INITIAL
Charter School
APPLICATION
for

Pearl Creek STEAM Charter School

FY 2025

Alaska Department of Education & Early Development
P.O. Box 110500
Juneau, AK 99811-0500

DIRECTIONS

Application for an Initial Charter

Parties interested in submitting an initial application for a charter school should familiarize themselves with all applicable state statutes and regulations contained within this document.

Local School Districts/School Boards may have developed a Charter Schools application form for approval at the local level that requires additional information, however for the purposes of seeking State Board of Education & Early Development approval, **this application form MUST be used.** Sufficient evidence must be presented to address all sections of this application form for the department to deem the application compliant and forward to the State Board of Education for approval.

Timeline:
Initial applicants must follow all local procedures to seek Charter School approval by their local boards.

Not later than 30 days after a local school board's decision to approve an initial application for a charter school, the local school board must forward the application to the State Board of Education & Early Development for review and approval by mailing to the department:
(1) the complete application filed with the local school board, including all supporting documents required;
(2) the written decision of the local school board;
(3) all other materials considered by the local school board in support or in opposition to the application; and
(4) the minutes of the local school board meeting at which the charter was approved.

In the event the local school district/local board has a separate application form that differs from the state required form, **it is the responsibility of the Charter School to transfer complete responses to the department form.**

Once the application form is completed, please submit an electronic copy via email to Don Enoch at donald.enoch@alaska.gov

An initial application approved by a local school board and submitted to the department ***must be received by the department at least 90 days*** before the next regularly scheduled meeting of the State Board of Education and Early Development. See the State Board schedule (education.alaska.gov/State_Board) for a list of upcoming Board meetings.

An initial application for a charter school approved by a local school board may not be submitted to the department more than 12 months before the planned start-up date for the new school.

Required Format:

1. Not more than 200 pages single-sided, *unbound,* in 12 point font.
2. ALL pages numbered in consecutive order (i.e. 1, 2, 3, …200).
3. A table of contents.
4. Follow in numerical order the numbered sections and sub-elements of the application.
5. ALL numbered sections and sub-elements must be addressed.

Upon receipt, the application will go through a technical review committee to determine if any additional information is necessary. Addressing each section with sufficient detail and evidence examples will decrease the likelihood of additional information being requested.

Once the technical review committee agrees the applicant has demonstrated compliance, the application will be scheduled to be addressed by the State Board of Education & Early Development at their next meeting.

Table of Contents

Charter School Application – Initial

Please provide narrative responses to the following areas. If referencing evidence within a document that is included as an appendix, please also provide sufficient detail in the narrative response for review purposes.

Section 1: Establishment of the Charter at the local level

i. Provide the primary purpose of the charter, how it will specifically differ from other educational options available in the community and the student population the charter hopes to attract. *AS 14.03.265(a)(1-3)*

Pearl Creek STEAM Charter School (PCSC) is a proposed 526-student K-5 elementary school with an emphasis on the integration of science, technology, engineering, arts, and mathematics (STEAM) through an interdisciplinary and inquiry-based approach. The STEAM education model is an approach to learning that integrates these disciplines as access points for guiding student inquiry, dialogue, and critical thinking, creating a holistic and interdisciplinary approach to learning. There are currently no schools focusing on STEAM education in the district.

Our school is a space where every child feels valued and supported, where diverse perspectives are celebrated, and where students are empowered to be the innovative problem-solvers and stewards of tomorrow. Through hands-on outdoor learning, collaborative projects, and an intentional focus on inclusion, we strive to nurture a love of learning that lasts a lifetime.

Depending on community interest and building capacity, PCSC will open as K-5 and expand to 6th grade in 2026-2027, 7th grade in 2027-2028, and 8th grade in 2028-2029.

ii. Provide evidence of the local school board approval of the new charter school marked as Appendix A. *AS 14.03.250(b)*

To be included after approval.

iii. Provide evidence of the signed contract between the new charter school and the local school board containing all required elements marked as Appendix B. *AS 14.03.255(c)(1-14)*

iv. Provide the charter schools' bylaws marked as Appendix C. *4 AAC 33.110(a)(4)*

The PCSC bylaws are included in Appendix C.

v. Provide evidence of the formation of an Academic Policy Committee (APC) consisting of parents of students attending the school, teachers, and school employees. Evidence includes a list of the members of the APC and their qualifications, as well as the written

minutes from meetings where discussions regarding academic policies, bylaws, school administration, and school educational programming occurred. Mark as Appendix D. *AS 14.03.250(a), 4 AAC 33.110(a)(1)*

A list of APC members, their qualifications, and the minutes from the first meeting are in Appendix D.

References: AS 14.03.250. Application for charter school, AS 14.03.255 Organization and operation of a charter school, AS 14.03.265 Admission, 4 AAC 33.110 Charter school application and review procedure.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 1	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Purpose	5	
Evidence of board approval	To be included after approval, Appendix A	
Evidence of signed contract with all required elements	See required element below (items 1-14)	
1. Description of educational program	11-29, 124-143 (Appendix F)	
2. Specific levels of achievement for the education program	15-16, 27-31	
3. Admissions Policy and Procedures	37-38, 48 (Appendix B) 144-149 (Appendices G & H)	
4. Administrative Policies	8, 119-123 (Appendix E)	
5. Statement of Charter funding	39-40, 150-161 (Appendix I)	
6. Method of accountability for	40, 49-50 (Appendix B), 69 (Appendix C)	

Section 1	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
receipts and expenditures		
7. Location and description of facility	33-36; 50 (Appendix B)	
8. Name of teachers who by agreement will teach in the charter	51-52 (Appendix B)	
9. Teacher to student ratio	26; 53 (Appendix B)	
10. Number of students to be served	5, 26	
11. Term of contract (not to exceed 10 years)	54 (Appendix B)	
12. Termination Clause	54 (Appendix B)	
13. Statement of state and federal law compliance	46 (Appendix B)	
14. Exemptions or requirements included in contract	47-48 (Appendix B)	
Evidence of bylaws	58-71 (Appendix C)	
Evidence of APC, including list of names/qualifications, meeting minutes	72-118 (Appendix D)	

Section 2: Organization and Administration

i. Provide information on how the charter school shall oversee the operation of the charter school to ensure that the terms of the contract required by AS 14.03.255 (c) are being met; including who will be responsible and what mechanism(s) they will use. *AS 14.03.255(b)(2)*

The Academic Policy Committee (APC) shall provide the governance for the charter school, and the operations of the school will be carried out by the administrative staff with input, guidance, and support from the APC as outlined in detail in the Bylaws available in Appendix C. Pearl Creek STEAM Charter School (PCSC) APC will ensure compliance with the contract required under AS.14.03.255(c). The APC must comply, when applicable, with any policies and provisions of the Fairbanks North Star Borough School District (FNSBSD) relating to charter schools, the Fairbanks Education Association (FEA), Alaska State Statutes pertaining to charter schools, and the Educational Support Staff Association (ESSA). When in doubt regarding any provisions or responsibilities under any applicable provision, law, or union contract, the APC will consult with the FNSBSD, FEA, ESSA, or State of Alaska (SOA).

ii. Provide the written administrative policy manual utilized by the charter marked as Appendix E. *4 AAC 33.110(a)(13)*

The Parent Handbook is included as Appendix E, which includes the administrative policy manual.

iii. Provide information on how the charter school will meet regularly with parents and with teachers of the charter school to review, evaluate, and improve operations of the charter school; including who will be responsible, what mechanism(s) they will use and how often contact(s) will take place. *AS 14.03.255(b)(3)*

The APC will meet monthly and parents will be welcomed and encouraged to attend, participate, and provide feedback. Administration and staff will remain in consistent communication with parents and provide avenues for parents to communicate and provide feedback in the Parent Handbook available as Appendix E. Pearl Creek STEAM Charter School will utilize the FNSBSD Parent Input Survey and Principal Survey, hold biweekly staff meetings, and utilize the AKSTEPP for setting goals and evaluating progress.

iv. Provide information on how the charter school will meet the requirements of conferring with the academic policy committee at least once each year to monitor progress in achieving the committee's policies and goals; including who will be responsible, what mechanism(s) they will use and if contact(s) will take place more frequently than once a year. *AS 14.03.255(b)(4)*

The APC will host an annual All School Meeting for parents and teachers in the first month of each new school year to report on progress toward APC goals. In addition to this large annual meeting, parents are welcomed and encouraged to attend monthly APC meetings.

v. Provide a description of the school schedule and calendar. *4 AAC 33.110(a)(9)*

Pearl Creek STEAM Charter School will follow the FNSBSD calendar (Figure 1).

Figure 1. FNSBSD Academic Calendar

vi. If applicable: Provide information on alternative educational options for students not wishing to attend the charter if the charter school is the only school in the community. *4 AAC 33.110(a)(12)*

PCSC, as a charter school, offers school choice to the community. Students who do not wish to attend PCSC may attend their neighborhood school or another school of choice.

References: AS 14.03.255. Organization and operation of a charter school, 4 AAC 33.110 Charter school application and review procedure.
Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 2	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Description of administrative oversight	8; 60, 68-69 (Appendix C) 119-123 (Appendix E)	
Evidence of written administrative policy manual	8, 119-123 (Appendix E)	
Description of regular parent and teacher contacts for continuous improvement	8; 65, 68 (Appendix C)	
Description of APC meeting(s) to monitor progress	8; 40, 48 (Appendix B) 64-66, 68 (Appendix C)	
Description of school schedule and calendar	8-9, 11, 13, 14, 53 (Appendix B) 120 (Appendix E)	
Alternative options for students if no other educational program exists	May be "not applicable"	

Section 3: Educational Program and Student Achievement

i. Provide a description of the educational program to be offered at the charter school. Information in this section should explicitly detail if the program is designed to meet the needs of students in a particular age group or grade level and/or meet the needs of students who will benefit from a particular teaching method or curriculum. *AS 14.03.255(c)(1), AS 14.03.265(a)(1-3), 4 AAC 33.110(a)(5)*

Mission

Pearl Creek STEAM Charter School students will engage in interdisciplinary project- and place-based learning and use critical thinking, creativity, and innovation to solve real world problems and develop the confidence and skills necessary for a technologically advanced future for our community, Alaska and beyond. By fostering strong connections with local experts, environments, and traditions, our students both learn from and contribute to the community, creating a reciprocal relationship that strengthens their sense of belonging and responsibility. Our mission is to continue to deliver our high standard of core reading, writing and math content areas, and weave STEAM throughout these subject areas. Our staff will integrate multidisciplinary teaching.

STEAM Integration

Pearl Creek Elementary STEAM Charter will innovate in our weekly schedule to provide daily "walk-to-STEAM" choice exploration courses for students to take deep dives into the areas of their interest (Figure 2). On Fridays, half of the school day will be dedicated to "Lab," which will allow for deeper engagement from the STEAM courses in longer experiments, tinkering, making, or field trips. Each STEAM course and lab will be tightly aligned with Next Generation of Science Standards and the FNSBSD school curriculum. Students would be given the opportunity to not only be consumers of science and STEAM lessons, but also collectors and interpreters of data as well as engineers designing projects to solve real world problems. We will provide professional development opportunities quarterly for staff to continue to build skills in STEAM integration, novel technologies, and current science and art trends, drawing from our extensive existing partnerships and future partners.

Family Engagement

Our current STEAM programming draws on strong parent involvement for facilitating our annual STEAM night, our annual STEAM student project fair, aiding in field trips and classroom projects, and facilitating many of our afterschool clubs. On average, parent and community volunteers operate 6-8 after-school clubs each quarter. At the core of our family engagement strategy is strong communication with our families. Our facebook and website are well-visited, and we maintain weekly communication newsletters from both the principal and each individual teacher. Pearl Creek's Parent Teacher Organization (PTO) and APC are also a strong network for family, teacher, and administrator engagement, and our PTO has historically been successful at fundraising toward school goals.

Community Partnerships

We build on a decades-long strength in community STEAM partnerships (Table 1). In addition to leveraging the cost-efficiency of the many thousands of dollars of in-kind support from these partners, we will have an advisory council of parents, teachers, and community stakeholders (FNSBSD leaders, STEAM program providers in the Fairbanks area, and STEAM workforce sector representatives) to help guide our program development and ensure it meets the workforce and education needs of our community.

Diversity and Equity

The Pearl Creek STEAM Charter model seeks to increase area-wide access to the rich STEAM programming our school provides and the new structural components we plan to innovate, should this proposal be successful. Curriculum, enrichment activities, family engagement and community partnerships are mindfully designed around equity across race, socioeconomic status, gender, culture and ability. Notably, our after-school care through Thrive and after-school club program provides increased accessibility to the STEAM model for working families. Our long-standing partnership with FNA, provides Alaska Native cultural grounding and role models in STEAM practice.

Program Structure

School Day

The Pearl Creek STEAM Charter Would create a school structure that meets all SOA standards on core subjects. It will include deep-dives into the areas of exploration by allowing students to choose their interest area, while teachers facilitate specific focus classes everyday. In addition, PCSC would like to create learning labs or field work experiences every Friday where the school partners with outside agencies, such as the University of Alaska Fairbanks (UAF), to bring scientists, engineers and experts into the classroom to promote learning and deepening of knowledge (Figure 2).

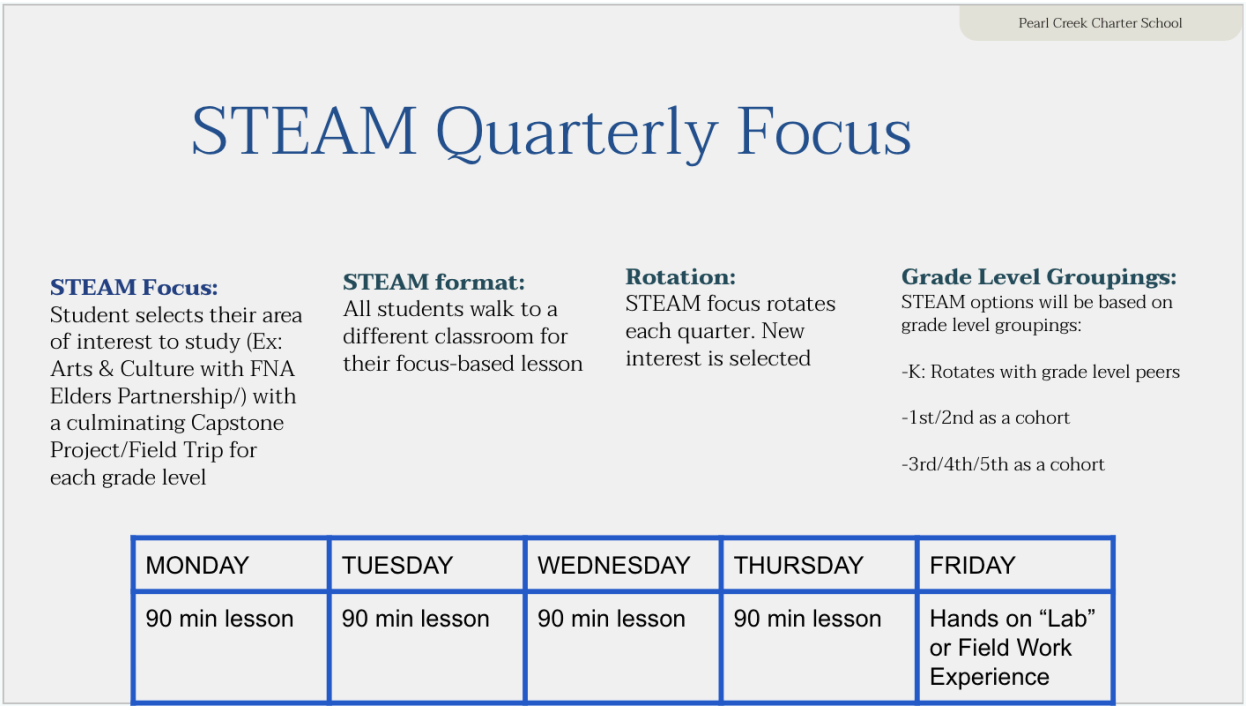

Figure 2. Proposed school day structure with STEAM embedded in the schedule.

After-school Programming

Pearl Creek STEAM Charter parents, teachers and community partners provide quarterly after-school clubs. The programming of these clubs changes each quarter to match the seasons and instructor availability. These come at a small cost to parent(s) or guardian(s) and provide after-school care in which students have time to learn new skills and hobbies. These are very popular programs and often fill entirely within minutes. An example of an existing after-school enrichment program schedules can be seen in Figure 3.

Club	Day	Instructor	Grade	Size	Location	Cost
Annual Pearl Creek Ski Club	Wednesday (1/22-2/26)	Sarah Widman	K-5th	40		Free
Knitting Club	Tuesday (1/21-2/25)	Rebecca Hammer	4th-5th	13	Rm. 326	$25
Battle of the Books	Wednesday (1/22-2/26)	Jacque Muehlbauer	2nd	10	Rm. 308	$25
Community Service	Monday (1/27-3/3)	Amber Hays	3rd-5th	10	Commons	$25
Lego Club	Tuesday (1/21-2/25)	Nikki Paul	2nd-3rd	15	Room 114	$25
Improv Club	Monday (1/27-3/3)	Molly Proue	2nd	7	Rm. 222	$25
Ball Games Club *(basketball, soccer, and other games)*	Monday (1/27-3/3)	Eamon O'Regan	3rd	15	Gym	$25
Advanced Ski Club	Tuesday (1/21-2/25)	Kristi Downing	3rd-5th	10		$25

Figure 3. Sample after-school enrichment schedule

Academic Partnerships

Pearl Creek STEAM Charter will continue the long-standing relationships with UAF and other organizations that will further grow, providing students with a robust academic experience. Examples of existing partnerships with Pearl Creekinclude, but are not limited to: the Permafrost Tunnel, U.S. Fish & Wildlife Service, AK Department of Natural Resource, City of Fairbanks (Stormwater Pollution), Project GLOBE, One Tree Organization, Calypso Farms, BLM Alaska Fire Service, and the UAF Volcanology Department.

Community Programming

Pearl Creek STEAM Charter will continue to offer Pearl Creek's outstanding STEAM community fair, which brings more than a thousand people to Pearl Creek each year. This draws on many of the existing partnerships listed above and in Table 1, and also allows the cultivation of new STEAM partnerships in the community.

Key Components of Pearl Creek's STEAM Charter School Logic Model

Inputs:

- *Human Resources*: All staff teaching STEAM courses, dedicated STEAM lab, guest speakers from our community, UAF and parent volunteers.
- *Financial Resources*: Fundraising by the school for specialized equipment, field trips, and potential grants to fund STEAM programming and staffing.
- *Community Partnerships*: Collaboration with local businesses, UAF, and other community partners (please see Table 1. Existing Community Partnerships).

Activities:

- *Place-Based Learning*: Integrate the local environment, history, and community resources into the curriculum, allowing students to engage in hands-on, real-world learning experiences. Teachers will design interdisciplinary projects that connect classroom lessons to the surrounding community through field trips, partnerships with local organizations, and outdoor exploration.
- *Project-Based Learning*: Designing and implementing hands-on STEAM projects aligned with curriculum standards with a culminating capstone project/field trip specific to each grade level.
- *Inquiry-Based Instruction*: Encouraging critical thinking and problem-solving through open-ended investigations, again using the NGSS framework for science inquiry.
- *Interdisciplinary Units*: Integrating STEAM concepts across different subjects, such as math, reading, writing, and social studies.
- *Mentorship Programs*: Pairing students with community professionals and UAF college students.
- *Competitions and Exhibitions*: Participating in STEAM challenges and showcasing student work in quarterly family nights and with capstone projects.

Outputs:

- *Student-developed Prototypes*: Tangible results from design thinking projects.
- *Presentations and Portfolios*: Demonstrating acquired knowledge and skills through presentations, digital portfolios, and a capstone project specific to each grade level.
- *Increased Participation in STEAM Competitions*: Higher student involvement in external STEAM challenges, i.e. robotics competitions, science fair, and other challenges such as the National Science Bee, World Robot Olympiad, Perennial Math Tournaments, STEM Racing, Math League, and Exploravision.
- *Community Outreach Events*: Sharing student projects and engaging the broader community in PCSC Family Nights and community events such as Food Bank participation.

Outcomes:

- *Improved STEAM Knowledge and Skills*: Increased student proficiency in science, technology, engineering, and math concepts, as determined by AK STAR and the Alaska Science Assessment.
- *Enhanced Critical Thinking and Problem-solving Abilities*: Students demonstrating advanced critical thinking and problem-solving skills.
- *Positive Attitudes Towards STEAM Careers*: Students' increased interest in pursuing STEAM-related fields in post-secondary education and training.
- *Greater Diversity in STEAM Pathways*: Attracting a wider range of students to pursue STEAM careers and participation in Kids2College work through UAF.

Important Considerations:

- *Data Collection*: Utilize the AK Star Assessment Results in Science and Math, the Alaska Science Assessment, student surveys, FNSBSD School Climate data and participation rates in STEAM activities.
- *Continuous Improvement*: Evaluate biannually the effectiveness of the program and make adjustments based on data analysis as well as parent and student feedback.
- *Stakeholder Engagement*: Involve parents, community members, and community partners in the design and implementation of the STEAM Charter program.

Curriculum Overview

Kindergarten

The Pearl Creek STEAM Charter School is dedicated to providing a dynamic, interdisciplinary learning environment that integrates STEAM principles into the kindergarten curriculum. Our program aligns with SOA statutes and adheres to the Alaska Early Learning Guidelines to ensure that young learners develop foundational skills in critical thinking, creativity, and problem-solving.

The Pearl Creek STEAM Charter School Kindergarten curriculum is designed to foster holistic development across key domains:

- *Physical Well-Being, Health, and Motor Development*: Emphasize activities that enhance gross and fine motor skills, promote health and personal care routines, and instill safety awareness. For instance, children engage in various physical activities such as walking, climbing, and choreography to build stamina and coordination. They also practice basic personal care routines, like handwashing, to develop independence in health skills.
- *Social and Emotional Development*: Support children in building trust with adults, developing friendships with peers, and understanding and managing emotions. Activities are designed to encourage cooperative play, empathy, and effective communication.

- *Approaches to Learning*: Cultivate curiosity and initiative by encouraging children to ask questions, explore new ideas, and engage in problem-solving. Through project-based learning, students develop persistence and the ability to work collaboratively.
- *Cognition and General Knowledge*: The curriculum integrates place-based STEAM concepts to enhance cognitive development. Children participate in hands-on experiments, explore basic engineering principles through building projects, engage with technology in age-appropriate ways, explore beginning math concepts, and integrate art across all concepts in various forms such as visual arts, drama, and music.
- *Communication, Language, and Literacy*: Aligned with the Alaska English Language Arts Standards and Alaska Cultural Standards, PCSC will focus on developing listening, speaking, reading, and writing skills. Children are introduced to a variety of texts, participate in storytelling, develop phonemic awareness, and practice writing letters and simple words to build foundational literacy.

Sample Daily Curriculum Based on Unit Themes:

Boreal Ecology: Exploring the Natural World

- *Morning Circle*: Discuss the day's theme and introduce the story and vocabulary related to local wildlife.
- *Literacy Activity*: Read a story about Alaskan animals and discuss their habitats.
- *Science Exploration*: Nature walk to observe and collect leaves, followed by a classification activity.
- *Art Project*: Create leaf rubbings and assemble them into a class mural.

*Building and Engineering***:**

- *Morning Circle:* Introduce basic engineering concepts using local examples and simple machines.
- *Math Activity*: Explore shapes and their properties through building blocks.
- *Engineering Challenge:* Design and construct a simple bridge using classroom materials.
- *Reflection:* Discuss what designs worked well and what could be improved.

Artistic Expression:

- *Morning Circle*: Explore different forms of artistic expression, focusing on music, dance and storytelling.
- *Music and Movement*: Learn a traditional Alaska Native dance.
- *Art Activity*: Create musical instruments using recycled materials.
- *Performance:* Students perform their dance using the instruments they've created.

*Technology and Coding**:***

- *Morning Circle*: Discuss the role of technology in everyday life.
- *Literacy Activity*: Read a story about a robot and discuss its functions.
- *Coding Exploration*: Introduce basic coding concepts using age-appropriate apps or games.
- *Art Activity***:** Imagine an invention to design and share through art media.
- *Hands-On Activity*: Use simple coding toys to navigate a maze.

Walk-to-STEAM Lab Day Example:

- *Morning Circle*: Review the week's content and introduce the day's activity.
- *Science Experiment*: Investigate the properties of water through melting and freezing activities.
- *Documentation*: Introduce the scientific method and have students draw and describe their observations in science journals.
- *Sharing Circle:* Students share their findings and reflect on the week's learning.

This sample curriculum illustrates PCSC's commitment to integrating STEAM principles into daily activities, fostering an engaging and comprehensive learning experience for our kindergarten students.

Grades 1-5

The Pearl Creek STEAM Charter School curriculum for grades 1-5 emphasizes foundational knowledge, skill-building, and hands-on exploration. Each grade level integrates core academic subjects with STEAM-focused inquiry and interdisciplinary projects.

Core + STEAM Academic Areas

English Language Arts (ELA)

- Aligned with district and SOA ELA Standards.
- Focuses on fluency, reading comprehension, writing, speaking, listening and critical analysis.
- Incorporates STEAM-related literature, technical writing, science communication, and research projects.

Mathematics

- Based on the Alaska Mathematics Standards.
- Emphasizes local problem-solving, coding, data analysis, and mathematical reasoning.
- Hands-on activities such as measuring and analyzing data in science experiments.
- Differentiating instruction based on individual needs and utilizing multi-modal learning techniques.

Science

- Incorporates Next Generation Science Standards (NGSS) and Alaska Science Standards.
- Includes hands-on experiments, inquiry-based learning, and collaboration with local scientists.
- Focus on local engineering principles, ecology, Alaskan resources, and address problems affecting our local community.

Social Studies

- Integrates district Social Studies Standards and Alaska Cultural Standards.
- Covers history, geography, civics, and cultural studies with an emphasis on Alaska Native perspectives.
- Explores STEAM's role in historical and societal advancements.

Arts

- Encourages creative expression through digital media, visual arts, music, and performance.
- STEAM-related art projects such as kinetic sculptures, coding for digital design, and maintaining science journals.

Technology & Engineering

- Embedded across all subjects through maker spaces, coding activities, and engineering challenges.
- Uses robotics, 3D printing, and digital storytelling to enhance learning experiences.
- Additional opportunities and projects offered through student choice projects during Walk to STEAM instruction time.

<u>STEAM Integration</u>

- *STEAM Courses*: Daily elective-style courses that explore topics such as robotics, science, art, technology, and engineering.
- *Lab Fridays*: Half-day sessions dedicated to project-based learning, fieldwork, art, field trips, and hands-on experimentation.
- *Inquiry-Based Learning:* Encouraging students to stay curious, ask questions, and develop hypotheses to conduct investigations aligned with the NGSS.
- *Interdisciplinary Units*: Projects integrate multiple disciplines to ensure STEAM principles are embedded in core subject areas.

Sample Daily Curriculum Based on Unit Themes Grades 1-5

Grade 1-5: Foundations in STEAM

Nature and Science Exploration

- Discuss local ecology, habitats and seasonal cycles.
- *Science Activity***:** Explore the surrounding boreal forest trails to look for evidence of animal life.
- *Art Project:* Nature journaling, for example, John Muir Laws method.
- *Math Activity:* Recording data and graphing observations from nature walks.

Engineering and Creativity

- *Literacy:* Read a story about inventors and discuss problem-solving. Try to find examples of local applications.
- *Engineering Challenge:* Using the knowledge gained from the literature, build a prototype using everyday materials.
- *Reflection:* Group discussion on successful designs, methodologies and potential improvements.

Digital Discovery

- *Technology:* Introduce basic coding with real-world examples and simple programming apps.
- *Writing:* Compose a short story about a robot or potential invention to solve a real-world problem.
- *Science Lab:* Give students the opportunity to apply learned skills to code a simple program.

Social Studies and Cultural Integration

- *History:* Research local Indigenous engineering and architectural achievements.
- *Art:* Create models of traditional dwellings.
- *Community Outreach:* Local Indigenous Elders are invited to share their stories and knowledge. Invite a local engineer or scientist to share their experiences and knowledge with the class.

STEAM Lab Day Examples

- Student choice inquiry projects.
- Collaborative group experiments.
- Maker space projects

- Presentation of weekly findings and reflections.
- Local field trips connecting to STEAM Unit themes
- Capstone art projects through visual, multimedia, musical, or performance art.

The Pearl Creek STEAM Charter School's educational plan for grades 1-5 is designed to inspire innovation, deepen academic knowledge, and prepare students for future STEAM careers. By integrating Alaska's academic standards with project-based and inquiry-driven instruction, we cultivate problem solvers, innovators, and lifelong learners.

The Pearl Creek STEAM Charter School's commitment to community engagement, family involvement, and continuous assessment ensures student success and the sustainability of the program.

Special Classes That May Be Offered

Physical Education

Pearl Creek STEAM Charter School's Physical Education (PE) program is designed to promote lifelong fitness, teamwork, and outdoor exploration by incorporating the surrounding boreal forest. By utilizing the surrounding natural landscapes in conjunction with the PCSC gymnasium, students engage in a variety of indoor and outdoor activities, including snowshoeing, cross-country skiing, hiking, and ice skating. Our program aligns with SOA standards for PE and integrates movement, wellness, and environmental appreciation.

PE Curriculum Overview

The PE curriculum emphasizes skill development, endurance, teamwork, and outdoor safety. Activities are adapted to seasonal changes to ensure year-round engagement and learning opportunities.

Core Components:

- *Cardiovascular Endurance:* Activities such as skiing, hiking, and skating improve heart and lung health.
- *Strength and Coordination:* Outdoor exercises enhance muscle development and motor skills.
- *Teamwork and Sportsmanship:* Cooperative activities and group challenges build social and leadership skills.
- *Environmental Awareness:* Students learn about local ecology and how to safely navigate outdoor terrain.
- *Personal Wellness:* Encouraging lifelong habits of physical activity and healthy decision-making.

Sample Seasonal Curriculum:

Fall (August - October)

- *Hiking and Trail Exploration*:
    - Learn proper hiking techniques and trail safety.
    - Identify local flora and fauna.
- *Outdoor Fitness Challenges*:
    - Strength and endurance exercises using natural elements (logs, hills, rocks).
    - Team-building relay races.
- *Outdoor Organized Team Sports*:
    - Learn the rules of common sports and practice working as a team utilizing PCSC outdoor soccer fields and basketball court.

Winter (November - March)

- *Snowshoeing*:
    - Learn proper snowshoe techniques and winter survival basics.
    - Participate in guided treks to explore winter landscapes.
    - Engage in snowshoe obstacle courses and relay races.
    - Multi-grade snowshoeing activities, allowing older students to mentor younger students.
- *Cross-Country Skiing:*
    - Introduction to classic skiing techniques.
    - Develop endurance and coordination through trail skiing.
    - Learn about proper ski maintenance and safety.
- *Ice Skating:*
    - Balance and agility drills on ice.
    - Basic skating skills (forward skating, stopping, turning).
    - Group games and relay activities to enhance skills.
    - Physical safety of self and others.

Spring (April - May)

- *Hiking and Orienteering:*
    - Explore advanced navigation skills.
    - Participate in eco-awareness projects.
    - Engage in team hikes with problem-solving tasks.
- *Outdoor Team Sports:*
    - Soccer, ultimate frisbee, and cooperative field games.
    - Focus on teamwork, communication, and strategy.

Year-Round Activities

- *Mindfulness and Yoga in Nature:*
    - Breathing exercises and stretching routines.
    - Guided meditation sessions outdoors.
- *Environmental Stewardship:*
    - Trail maintenance and Leave No Trace principles.
    - Collaboration with local conservation organizations.
- *Team and Individual Sports in the Gymnasium*

Music

The Pearl Creek STEAM Charter School music program integrates STEAM with music education through hands-on, grade-appropriate activities. Students explore sound science, rhythm, and digital music creation while designing instruments and experimenting with materials. They connect music to visual arts, movement, and environmental sounds, fostering creativity and interdisciplinary learning. The program also incorporates cultural music exploration, encouraging students to engage with diverse musical traditions. With an emphasis on technology, collaboration, and real-world applications, this curriculum builds musical understanding while enhancing critical thinking and problem-solving skills across all grade levels.

Example of a 2nd Grade Year-Long STEAM Music Education Plan:

Quarter 1: Exploring Sound and Science

Unit 1: Sound Science (Weeks 1-4)

- Investigate how sound travels
- Create simple instruments using recycled materials
- Measure sound waves with visual representations

Unit 2: Rhythm and Math (Weeks 5-9)

- Count musical beats using fractions
- Pattern recognition in music
- Create rhythm sequences using math patterns

Quarter 2: Music Technology and Engineering

Unit 3: Digital Music Making (Weeks 10-14)

- Introduction to basic music software

- Recording sounds from nature
- Creating digital soundscapes

Unit 4: Instrument Engineering (Weeks 15-18)

- Design and build simple percussion instruments
- Test different materials for sound quality
- Explore acoustic properties

Quarter 3: Art and Music Integration

Unit 5: Visual Music (Weeks 19-23)

- Color and sound relationships
- Drawing music patterns
- Creating musical art installations

Unit 6: Movement and Music (Weeks 24-27)

- Dance and rhythm coordination
- Musical story creation
- Geometric dance patterns

Quarter 4: Environmental Music and Culture

Unit 7: Nature's Symphony (Weeks 28-32)

- Outdoor sound collection
- Environmental music composition
- Weather and music connections

Unit 8: Cultural Music Exchange (Weeks 33-36)

- Alaska Native music traditions
- World music exploration
- Final STEAM music project

Note: Each unit incorporates hands-on activities, cross-curricular connections, and age-appropriate technology use.

Art

The Pearl Creek STEAM Charter School STEAM-integrated art program blends visual arts with STEAM fostering creativity, problem-solving, and interdisciplinary learning. Students explore color theory, movement in art, architectural design, and sustainability through hands-on projects such as sculpture, digital animation, recycled art, and scientific illustration. The curriculum emphasizes observation, mathematical patterns, engineering principles, and environmental awareness, encouraging collaboration and critical thinking. Age-appropriate activities introduce technology and real-world applications, allowing students to develop artistic skills while making meaningful cross-curricular connections. The program culminates in a final STEAM exhibition, showcasing student creativity and innovation.

Example of 4th Grade STEAM-Integrated Art Curriculum:

Quarter 1: Foundations and Nature Connections

- Color theory and scientific principles of light
- Nature-inspired art using mathematical patterns
- Environmental art and ecosystem studies
- Technology tools for digital art creation
- Engineering principles in sculpture design

Quarter 2: Movement and Forces

- Kinetic art and simple machines
- Balance and symmetry in composition
- Force and motion in mobile creation
- Digital animation basics
- Sound and visual art integration

Quarter 3: Innovation and Structure

- Architectural design principles
- 3D printing and sculpture
- Renewable energy art projects
- Mathematical perspective drawing
- Scientific illustration techniques

Quarter 4: Community and Sustainability

- Recycled materials art
- Community-based art projects

- Digital storytelling
- Environmental awareness art
- Final STEAM exhibition planning

Key Integration Elements Throughout:

- Scientific observation and documentation
- Mathematical measurements and patterns
- Engineering design process
- Technology integration
- Environmental awareness
- Problem-solving skills
- Collaborative project work

Note**:** This curriculum aligns with SOA standards for Visual Arts and STEAM for Grade 4, emphasizing cross-disciplinary connections and hands-on learning experiences.

Special Education

The Pearl Creek STEAM Charter School is committed to providing an inclusive and supportive educational environment for all students, including those with special needs. Students with Individualized Education Programs (IEPs) or 504 plans will be admitted in accordance with state and federal laws, ensuring that all necessary accommodations are made.

ii. Provide a written plan that addresses the teacher-to-student ratio, including projected enrollment figures. *4 AAC 33.110(a)(16)*

PCSC shall maintain the following pupil-teacher ratio unless the APC and Principal approves a new ratio: 18:1 (kindergarten), 22:1 (1st-3rd grade) and 24:1 (4th-5th and 6th-8th).

PCSC shall enroll a minimum of 150 students and a maximum of 526 students at all times. Student enrollment may be adjusted pursuant to the admissions procedures (Appendix H) if there is increased student demand to attend PCSC.

iii. Provide evidence of a written instructional program that addresses state content standards under 4 AAC 04 and aligns with the content on the statewide assessment system under 4 AAC 06.710-4 AAC 06.790 marked as Appendix F. *4 AAC 33.110(a)(6)*

A written instructional program is included as Appendix F.

iv. Provide a description of plans for serving special education, vocational education, gifted, and bilingual students. *4 AAC 33.110(a)(10)*

Special Education

The Pearl Creek STEAM Charter School is committed to providing an inclusive and supportive educational environment for all students, including those with special needs. The Pearl Creek STEAM Charter School will work collaboratively with parents, families and community agencies to develop, advocate and provide a quality educational program for students with disabilities. The school will also work to ensure that students with disabilities are provided an environment that allows them to be educated effectively and realize their maximum potential. Students with Individualized Education Programs (IEPs) or 504 plans will be admitted in accordance with state and federal laws, ensuring that all necessary accommodations are made.

Extended Learning Program (ELP)

Formerly known as the Gifted & Talented Program, the ELP is designed to create educational opportunities for students whose needs and abilities exceed those provided by the general curriculum. The ELP provides enrichment, curriculum differentiation, social and emotional support, and awareness of community opportunities for students accelerating through the general curriculum.

Multilingual Learner Program

The Multilingual Learner (ML) Program supports schools in delivering an equal educational opportunity to students who speak a language or languages other than English, who speak another language in addition to English, or who have a language other than English spoken in their home, and who are academically achieving below grade level. The program focuses on helping students gain basic interpersonal communication skills and academic language proficiency in English, while developing and maintaining a healthy cross-cultural perspective. The Pearl Creek STEAM Charter School will address multilingual learners' needs based on their ACCESS and WIDA scores.

v. Provide written objectives for program achievement desired by the charter. *4 AAC 33.110(a)(7)*

Program Objectives for Pearl Creek STEAM Charter

- *Foundational STEAM Proficiency*
    - Develop early literacy in STEAM through hands-on, play-based, and inquiry-driven experiences.
    - Pearl Creek STEAM Charter School will meet state and federal benchmarks in math, reading, writing, and science.
        - Assess growth using age-appropriate AK STAR, MAP, M-Class and Alaska Science Assessment benchmarks.
        - Meet all state and federal assessment requirements associated with Federal Guidelines and Alaska READS (per AS 14.03.123).

- *Early Critical Thinking and Problem-Solving Skills*
    - Encourage curiosity and creative problem-solving through structured play, design challenges, and collaborative projects.
    - Provide regular opportunities for students to experiment, ask questions, and present their findings through age-appropriate capstone projects, classroom showcases, and presentation of weekly findings and reflections during Friday STEAM Lab Day.
- *Introduction to STEAM Careers and Real-World Connections*
    - Spark interest in STEAM fields by consistently integrating guest speakers, simple mentorship opportunities, and interactive virtual experiences.
    - Partner with the UAF to provide engaging, hands-on learning activities that connect young students with real-world applications of STEAM.
- *Equitable Access to STEAM Learning for All Young Learners*
    - Ensure all students, regardless of background or ability, have access to quality STEAM instruction through inclusive lesson design, sensory-friendly activities, and differentiated learning strategies.
    - Provide transportation assistance, quarterly after-school enrichment programs, and community support networks to make participation accessible to all families in our community.
    - Develop partnership with at least one Title I school to provide access to STEAM learning opportunities to additional students in the community.
- *Integration of Indigenous Knowledge in Early STEAM Education*
    - Introduce students to Indigenous knowledge through storytelling, nature-based learning, and hands-on projects led by Indigenous knowledge holders and elders.
    - Design activities that honor traditional ecological knowledge, emphasizing local ecosystems and sustainability.
- *Place-Based Learning to Encourage Exploration and Discovery*
    - Utilize the school's natural surroundings to immerse students in outdoor STEAM lessons, environmental education, encouraging outdoor play and hands-on exploration.
    - Integrate natural exploration such as our partnership with NASA's The GLOBE program, harvesting for food security, and to build early science literacy skills.
    - Invite Title 1 partner schools to share in place based learning opportunities utilizing the campus and resources of PCSC.
- *Family and Community Engagement in Early STEAM Education*
    - Foster strong school-family partnerships by involving parents and caregivers in STEAM nights, classroom volunteering, and school projects.
        - Family volunteering: 70% of families will volunteer at the school.
    - Provide at-home learning resources, family newsletters, and accessible communication channels to keep families informed and engaged.
    - Collaborate with engineers, scientists, artists and other specialists to discuss the relevance of their work in our Arctic environment.
    - The school has a goal of involvement by community members to equal 20% of the total teaching hours budgeted each year.
- *Age-Appropriate STEAM Learning Practices*
    - Implement STEAM choice-based learning, where students can explore topics of interest in developmentally appropriate ways, such as engaging in close

observations, focus on personal meaning, conduct open exploration, designing with intention, iterations, and communicate about process and outcome.
    - Dedicate Fridays to "STEAM Lab" time, allowing students to engage in extended hands-on experiments, engineering challenges, field experiences, and collaborative art-science projects.
    - Develop mentorship skills through a knowledge exchange between peers within PCSC and with students from a sister Title I school.
- *Hands on and Interdisciplinary STEAM Learning*
    - Use hands-on learning techniques, including games, role-playing, and interactive storytelling, to make STEAM concepts fun and engaging for young children.
    - Incorporate music, movement, and creative arts to connect STEAM subjects with students' natural curiosity and creativity.
- *Ongoing Program Evaluation and Growth*
    - Use student portfolios, teacher observations, and developmentally appropriate assessments to track student progress and engagement in STEAM.
    - Gather feedback from families, teachers, and community partners through bi-annual surveys to refine and enhance the program's effectiveness in supporting early learners.
        - Parent satisfaction: The school has a goal of having 90% of the parents agree that the school meets their children's needs per biannual survey results
- *Stable Enrollment*
    - Excluding students who move out of the area, the school will aim for a voluntary re-enrollment rate of 80% the year after the first year, and 90% in the subsequent years.

vi. Provide a description of the mechanisms for student assessment to be utilized in addition to those required by state law. *4 AAC 33.110(a)(5)*

The K-5 Pearl Creek STEAM Charter School will implement a comprehensive assessment system that includes SOA-mandated assessments as well as additional measures to evaluate student growth in core subjects and STEAM competencies. These assessments will ensure students develop foundational academic skills while engaging in hands-on, inquiry-based learning experiences.

1. Assessments Required by State Law (4 AAC 33.110(a)(5))

As required by 4 AAC 33.110(a)(5), our school will administer all state-mandated assessments, including:

- *Alaska System of Academic Readiness (AK STAR)***:** Standardized assessments in English Language Arts (ELA) and Mathematics for students in grades 3-5 to measure proficiency in state standards.
- *Alaska Science Assessment***:** Administered in grade 5 to evaluate students' understanding of scientific concepts aligned with state standards.

- *English Language Proficiency Assessment (ACCESS for ELLs)***:** Required for students identified as English language learners (ELL) to measure language acquisition and proficiency.
- *Alaska Developmental Profile (ADP)***:** Used to assess incoming kindergarteners' readiness in early literacy, numeracy, and social-emotional skills.
- *Interim and Benchmark Assessments:* Additional state-required or district-adopted measures to monitor progress throughout the year.

2. Performance-Based Assessments

Young learners thrive when given opportunities to apply their knowledge in meaningful ways. The Pearl Creek STEAM Charter School performance-based assessments will include:

- *STEAM Exploration Projects:* Students will engage in age-appropriate engineering and science challenges, such as designing bridges with building blocks or creating simple circuits, assessed through observation and student reflections.
- *Hands-on Math & Science Tasks:* Teachers will assess problem-solving skills through real-world applications, such as measuring objects in nature, experimenting with basic physics concepts, or using manipulatives to demonstrate mathematical thinking.
- *Thematic Art & Design Activities:* Students will integrate creative expression with science and math, such as designing geometric patterns or illustrating scientific processes.

3. Portfolio Assessments

Students will maintain learning portfolios to document growth in core subjects and STEAM areas. Portfolios will include:

- *Drawings and Models:* Illustrations of scientific observations, engineering blueprints, and art projects.
- *Reflections and Journals:* Age-appropriate writing or dictation about learning experiences, problem-solving steps, and discoveries.
- *Teacher and Peer Feedback:* Structured, developmentally appropriate feedback on creativity, effort, and skill development.

4. Competency-Based Assessments

To ensure students progress at their own pace and master foundational concepts, PCSCwill utilize:

- *Play-Based and Interactive Assessments:* Observing how students use logic and reasoning in structured play, puzzles, coding games, and hands-on experiments.
- *Small-Group and One-on-One Demonstrations:* Teachers will assess skills through direct observation, discussions, and guided activities.
- *STEAM Skill Checkpoints:* Short, hands-on tasks where students demonstrate their understanding, such as categorizing materials by properties, sequencing steps in an experiment, or coding a simple command sequence with block coding tools.

5. Exhibition and Demonstration of Learning

Students will participate in STEAM Showcases each semester, where they share their learning with families and the community. These showcases will include:

- *STEAM Fair Projects:* Students will work on simple inquiry-based projects, such as growing plants in different conditions or building basic structures.
- *Classroom Demonstrations:* Kindergarteners might show how they mix colors, while older students might present group robotics projects.
- *Family STEAM Nights:* Interactive events where students guide parents through hands-on learning stations, reinforcing communication skills and confidence.

6. Teacher-Developed Formative Assessments

Teachers will integrate frequent, informal assessments to gauge learning in a low-pressure environment, including:

- *Observation and Checklists:* Tracking student progress in key areas like problem-solving, collaboration, and creativity.
- *Exit Tickets and Draw-and-Tell Activities:* Quick, simple responses to gauge understanding, such as drawing a concept they learned or explaining an idea in their own words.
- *Self and Peer Reflections:* Using simple tools like "thumbs-up/thumbs-to-the-side" or sticker charts to help students assess their own learning and support one another.

By using these assessment mechanisms, PCSC will create an engaging, student-centered learning environment that nurtures curiosity, critical thinking, and foundational STEAM skills, ensuring students are well-prepared for future academic success.

References: AS 14.03.255. Organization and operation of a charter school, AS 14.03.265 Admission, 4 AAC 33.110 Charter School application and review procedure.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 3	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Description of educational program	11-27; 46-47 (Appendix B)	

Section 3	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Evidence of written instructional program that addressees content standards and aligns with statewide assessment system	26; 124-143 (Appendix F)	
Evidence of written plan to address PTR and projected enrollment	26; 53 (Appendix B)	
Description of plans for serving special education, vocational education, gifted and bilingual students	26-27; 33; 50 (Appendix B)	
Evidence of written objectives for program achievement	27-29; 47 (Appendix B)	
Description of the mechanisms for student assessment in addition to those required by state law	29-31	

Section 4: Professional Development

i. Provide a description of and schedule for staff development activities. *4 AAC 33.110(a)(8)*

All provisions of applicable collective bargaining agreements apply to staff members at PCSC. Decisions regarding professional development are made in conjunction with the APC, principal and staff members. Many STEAM training programs are available for staff members including "fostering STEAM in the classroom" and through partnerships with the NASA GLOBE project. The Pearl Creek STEAM Charter School will seek grants to fund these training sessions.

The Pearl Creek STEAM Charter School will adhere to all state and district mandatory training, but also include professional development that is centered around STEAM practices.

Teachers and staff will be trained with the next generation science standards as a part of yearly professional development. The Pearl Creek STEAM Charter School will host three professional development days to collaborate with partners in STEAM to further teacher/staff's professional development journey. Professional development decisions are directly connected to the PCSC mission, philosophy and goals.

Over the course of the year, the PCSC principal and APC will determine which district trainings are beneficial to the schools' teachers and provide for NGSS training on in-service days.

References: 4 AAC 33.110 Charter School application and review procedure.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 4	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Description of and schedule for planned professional development	11, 32, 39, 47, 48, 79	

Section 5: Facility

i. Provide information on the location for the charter school, description of the facility and lease information. Information in this section should include a description of the process used by the school and district to comply with the right of first refusal for a lease of space in an existing school district facility or in a facility within the school district that is not currently being used as a public school. *AS 14.03.255(c)(7)(d), 4 AAC 33.110(a)(15)*

We propose that the existing Pearl Creek Elementary School is the ideal borough-owned facility for the PCSC School. As the FNSBSD voted to close Pearl Creek Elementary School on February 4, 2025, PCSC proposes to lease this building at 700 Auburn Drive, Fairbanks AK 99709, per AS 14.03.255(d). The school building is positioned in a fringe rural setting on 27.89 acres of mostly forested land surrounded by residential neighborhoods and adjacent to 121.4 acres of undeveloped land owned by the Fairbanks North Star Borough. It is approximately 2.5 miles north of UAF. Students at PCSC would have access to miles of public trails throughout the adjacent boreal forest for skiing or running and a pick-your-own raspberry farm to the north, as well as fields for sports, a fenced-in garden, and a playground.

As a school of choice, PCSC is open to and will draw students from across FNSB. It will be accessible to students living in the surrounding neighborhoods who can walk to school, as well as children in more remote locations. The school would occupy the two-story, 62,983 sq ft building located on the property. There are 22 full-sized classrooms, and three half-sized classrooms that would be divided accordingly among grade levels and special education and allow room for growth. Additionally, the building has an area for reception and administration that includes an open workspace, an office, conference room, and storage rooms. There is a library, one to two rooms for before and after school childcare, a gym, a multi-purpose commons area, two rooms for music/art/explorations, a kitchen that could be used to provide lunch for students, a faculty lounge with kitchen, a staff workroom, a nurses' room, custodial office, and storage spaces. PCSC would pay a yearly lease to be negotiated with the FNSBSD.

ii. Describe the plans for the charter school's facility and any plans for projected growth. *4 AAC 33.110(a)(15)*

Floor plans (Figures 4 through 6) for PCSC are included in this document below, as is a site plan (Figure 7) and map of the Pearl Creek Nordic Park (Figure 8). PCSC plans to open as a primary school, offering K-5 grade level instruction in the first year. Depending on community interest and building capacity, PCSC will open as K-5 and expand to 6th grade in 2026-2027, 7th grade in 2027-2028, and 8th grade in 2028-2029.

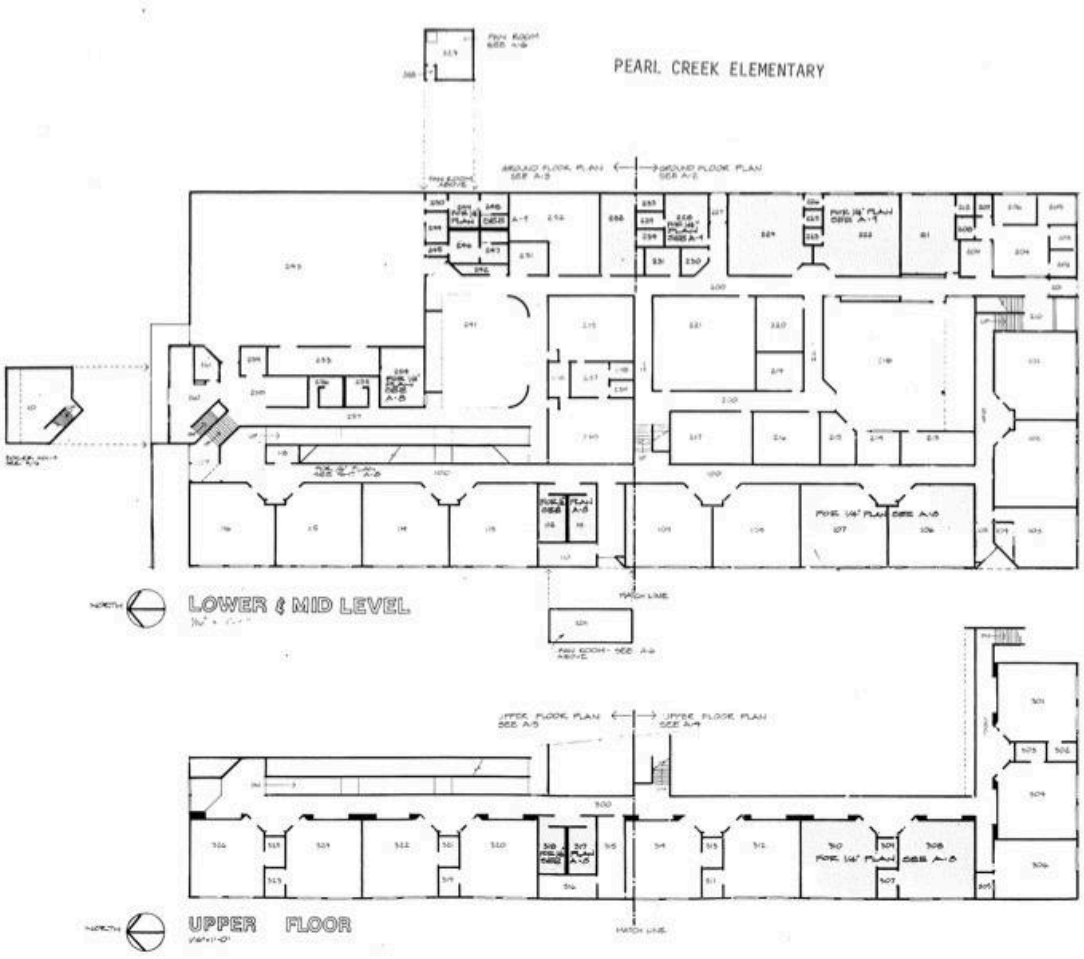

Figure 4. Pearl Creek Elementary School Floor Plans

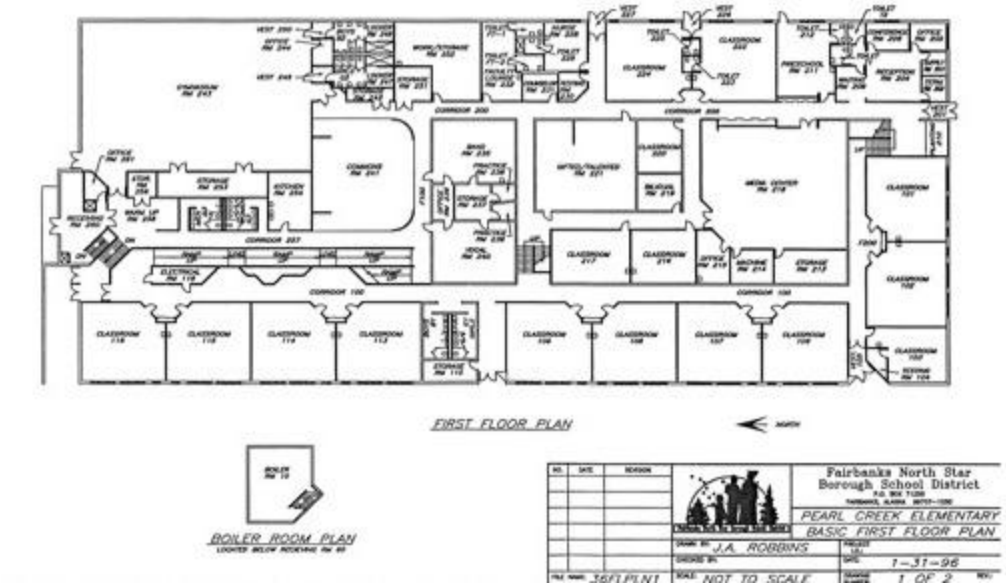

Figure 5. Pearl Creek Elementary School First Floor Plan

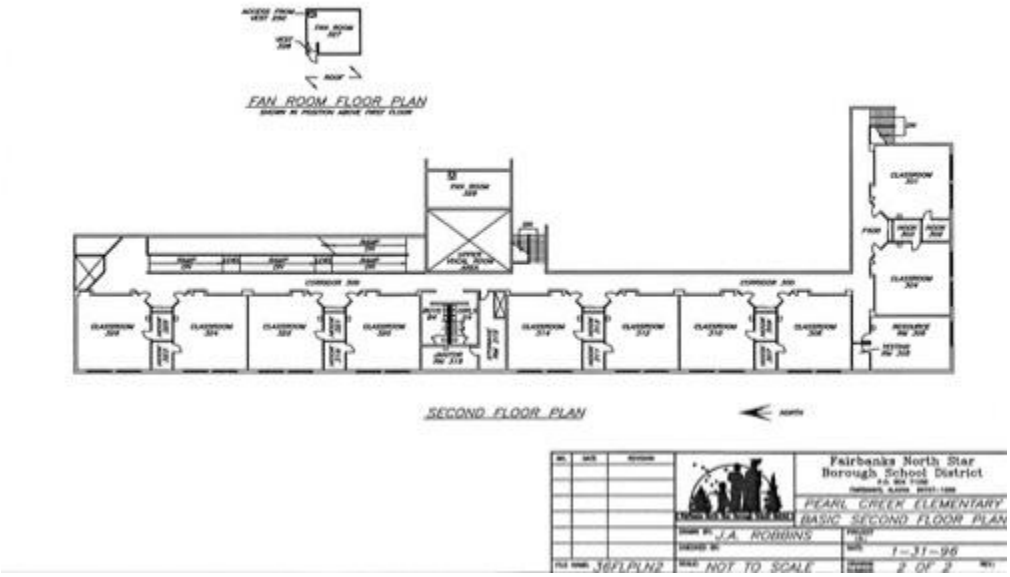

Figure 6. Pearl Creek Elementary School Second Floor Plan

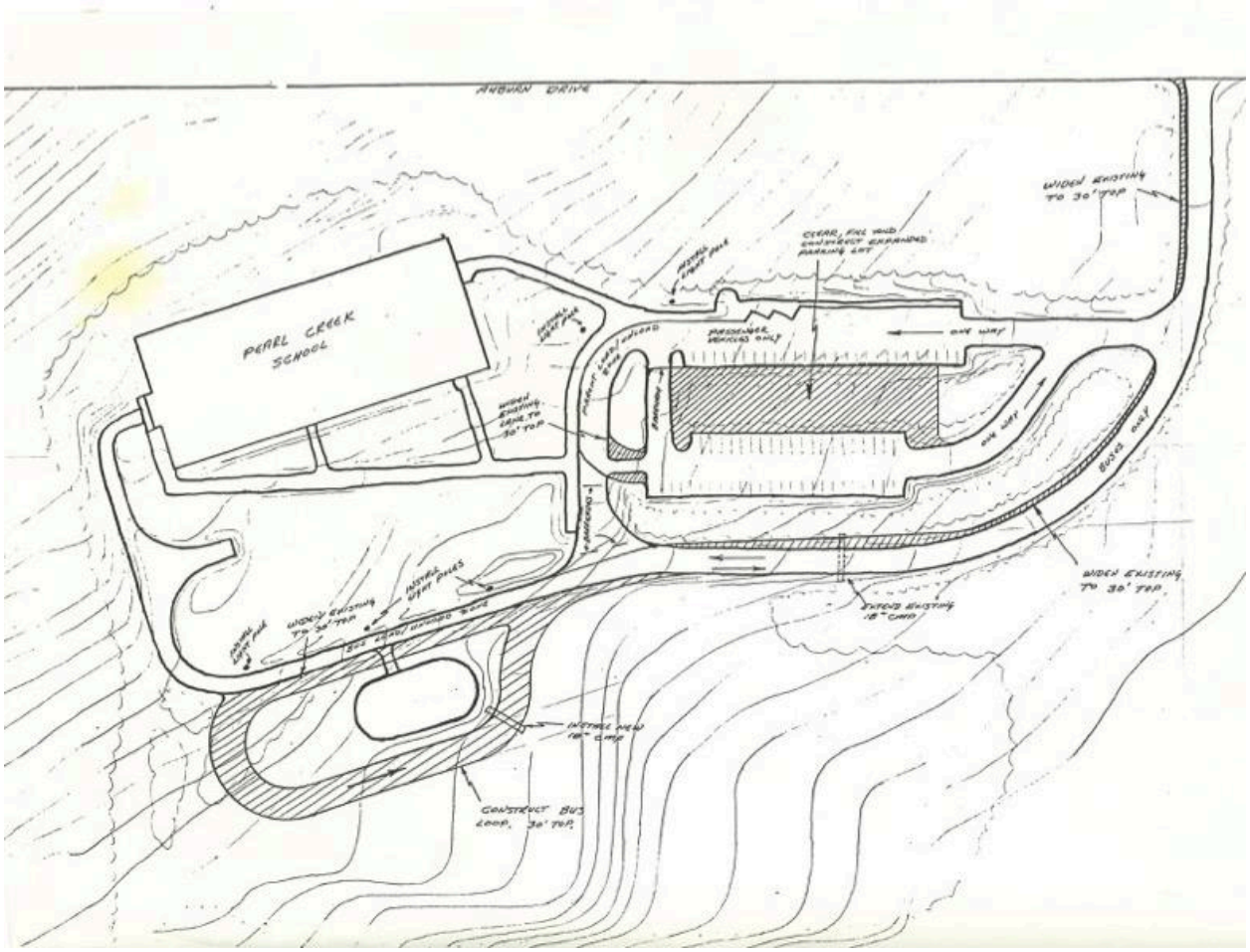

Figure 7. Pearl Creek Elementary School Site Plan

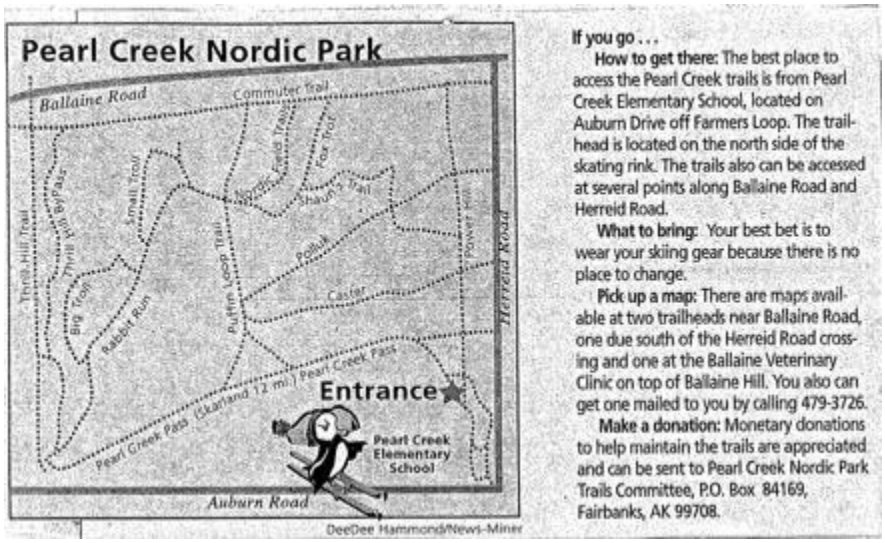

Figure 8. Pearl Creek Nordic Park

References: AS 14.03.255. Organization and operation of a charter school, 4 AAC 33.110 Charter School application and review procedure.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 5	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Description of facility and location of the charter school including addressing district leased space if applicable	33-36, 50 (Appendix B)	
Evidence of a written facility plans	33-36, 50 (Appendix B)	

Section 6: Admission

i. Provide the written admission policies and procedures utilized by the charter. Please include evidence that the school is ensuring an equal and bias-free access to all eligible students. Mark as Appendix G. *AS 14.03.255(c)(3), 4 AAC 33.110(a)(11)*

Nondiscrimination Statement

The Pearl Creek STEAM Charter School is committed to fostering a learning and working environment that is free from discrimination and harassment. PCSC prohibits discrimination against any individual as defined in the FNSBSD Policy on Nondiscrimination. The school ensures equal access and opportunities regardless of race, ethnicity, color, religion, creed, sex, gender identity, gender expression, sexual orientation, age, national origin, physical or mental disability, genetic information, marital status, including changes in marital status, pregnancy, parenthood, veteran status, or any other characteristic protected under local, state, or federal nondiscrimination laws.

Participation in this program is voluntary; no student is required to attend.

No student shall be denied participation based on a disability or special needs. This policy applies to all matters involving staff, students, contractors, the public, educational programs, facilities, services, and activities, as well as individuals and entities with whom the school conducts business.

This policy aligns with federal and state nondiscrimination laws, including but not limited to Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA).

Admission of Students with Special Needs

Pearl Creek is committed to providing an inclusive learning environment and will admit students with special needs in compliance with state and federal regulations. Students with Individualized Education Programs (IEPs) or 504 plans will be accommodated as necessary.

Admission Policies and Procedures

Admission Process:

1. In order for applicants to familiarize themselves with PCSC's philosophy and criteria, the prospective families will be encouraged to attend an orientation during the lottery application process.
2. Parent(s) or guardian(s) will read, complete, and sign the PCSC application.
3. If more students apply than can be accommodated within a grade level, applicants will be drawn by lottery for admission.

Admission Criteria:

All parent(s) or guardian(s) who enroll students in PCSC will be required to review and agree to the Student Handbook as well as to contribute volunteer hours to support the day-to-day operations of PCSC. Flexible volunteer opportunities will be offered.

In the event a family is unable to volunteer, a "Volunteer Bank" will be established. Families who are able to volunteer excess hours can donate to the Volunteer Bank for others to draw from if necessary. Organizations who donate time will have their hours donated to the Volunteer Bank as well.

ii. Provide a written student recruitment process, including a lottery or random drawing mechanism for enrollment if applicants exceed the school's capacity. Mark as Appendix H*. AS 14.03.265(b) Admission, 4 AAC 33.110(a)(17)*

The student recruitment process, including lottery, is included in Appendices G and H.

References: AS 14.03.255 Organization and operation of a charter school, AS 14.02.265 Admission, 4 AAC 33.110 Charter School application and review procedure.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template

Section 6	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Evidence of written admission policies and procedures	37-38, 48 (Appendix B) 144-149 (Appendices G & H)	
Evidence of a written student recruitment process, including plans if applicants exceed capacity	145-146 (Appendix G) 147-149 (Appendix H)	

Section 7: Fiscal

i. Provide a written budget summary and financial plan, including a statement of the charter school's funding allocation from the local school board and costs assignable to the charter school program budget. Information in this section should explicitly detail the amount and sources of the revenue streams; the specific indirect rate (not to exceed 4%) and details of what the indirect rate charges cover; as well as the charter's eligibility to receive additional revenue over the 2.65 mills required in the foundation formula. Projected budget marked as Appendix I. *AS 14.03.255(c)(5), 4 AAC 33.110(a)(14)(A)*

In Appendix I, there is a written budget summary, projected budget, and funding estimate that includes the required 4% indirect to the district for overhead, the school programmatic costs, and funds generated by grants, appropriations, federal impact aid, the required local contribution, the local contribution under AS 14.17.410(c), and special needs under AS 14.17.420(a)(1).

PCSC plans to apply for several grants to support the charter overall operations and further enhance and develop STEAM goals. In the first year, we will apply for the Charter School State Grant, pursuant to State of Alaska Sec. 14.03.264 Additionally in April 2025, the APC will submit an application to the Federal non-SEA CSP grant (ALN/CFDA 84.282B) to assist with program implementation that will be available in the years 1-5 of the charter.

For STEAM support in the first year, $200,000 will be available from NSF RAPID as a subaward to the school to support STEM education along with NASA ROSE funding for STEM professional development and collaboration. During the first year, the APC will apply to National Science Foundation (NSF) Discovery Research PreK-12 (ALN/CFDA 47.076), DoN STEM Education and Workforce Program (ALN/CFDA 12.330), Rasmussen Foundation, and Alaska Mental Health Trust to be utilized in the second year and preceding years depending on the grant length. The APC will continue to identify revenue opportunities to support both the operations and STEAM goals.

Additionally, the charter continues to foster and develop community partnerships to collaborate on mutually beneficial goals for Fairbanks and the schools within the district which will result in opportunities for fundraising, co-creation, and sponsorship opportunities to cultivate diverse and adaptive funding streams for long-term growth, sustainability and adaptability.

ii. Provide information on how the charter school will keep financial records, including who will be responsible, what mechanism(s) they will use and how often financial oversight will take place. *AS 14.03.255(b)(1)*

The Academic Policy Committee (APC) will ensure proper fiscal stewardship, strategic fiscal planning and fiscal oversight and management through periodic assessment of the school's compliance with policies and procedures and those of the Fairbanks North Star Borough School District. The Principal or designee shall provide monthly financial information to the Treasurer before the APC meetings to assist with the Treasurer's Financial Report. Annually, the Principal and Treasurer will work together to prepare proposed budgets to the APCS for approval and the FNSBSD. The APC is ultimately responsible for financial oversight which will be most strongly held by the Treasurer. The charter school reserves the right to reallocate funds from one line item to another as a result of budgetary changes. Any money not encumbered at the end of the fiscal year is automatically rolled over to the following year's operating budget.

PCSC plans to work closely with the FNSBSD's Finance Department to ensure compliance in all areas. The Charter School will comply with AS 14.17.910, Restrictions Governing Receipt and Expenditure of District Money, and conduct its business activities using the accounting principles, standards and procedures under the standards of Generally Accepted Accounting Principles (GAAP). The charter school will comply with all state and federal requirements for receipt and use of public money. The charter school shall provide the financial and accounting information requested by the local school board or the Department of Education and Early Development and shall cooperate with the local school district or the department in complying with the requirements of AS 14.17.910.

iii. Provide a description of the method by which the charter school will account for receipts and expenditures. *AS 14.03.255(b)(1)(c)(6), 4 AAC 33.110(a)(14)(B)*

PCSC will follow all district-approved practices to account for receipts and expenditures.

References: AS 14.03.255. Organization and operation of a charter school, 4 AAC 33.110 Charter School application and review procedure

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template

Section 7	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Written budget summary and financial plan	39-40, 49, 63, 69 150-161 (Appendix I)	
Description of how financial records will be kept	40, 49-50 (Appendix B) 69 (Appendix C)	
Description of accountability for receipts and expenditures	40, 49-50 (Appendix B) 69 (Appendix C)	

Section 8: Transportation

i. Provide a plan for pupil transportation and the district charter school transportation policy, if proposed or adopted, marked as Appendix J. *4 AS 14.09.010 (e)(1-3)(f)(g), AAC 33.110(a)(19)*

The Pearl Creek STEAM Charter School is committed to ensuring transportation is not an issue for those wishing to enroll. Recognizing that transportation is one of the most significant obstacles to school choice, PCSC will work within the FNSBSD transportation policy to develop practical solutions. The goal is to provide families with accessible, reliable transportation options, making PCSC a viable choice for all students.

For details on the transportation plan, see Appendix J.

References: AS 14.09.010 (e)(1-3)(f)(g) Transportation, 4 AAC 33.110 Charter School application and review procedure, 4 AAC 27.057 Charter School Transportation policy.

Use the reviewer rating template below to fill in the page numbers to depict the location of the responses for each sub-element. Do not use the reviewer's notes column.

Reviewer Rating Template		
Section 8	Page Number location(s) of response(s) including Appendices	Reviewer's notes Rating: Compliant/Noncompliant
Plans for pupil transportation	42, 162-163 (Appendix J)	

APPENDIX A

Evidence of Local School Board Approval

Pearl Creek STEAM Charter School

To be included after approval.

APPENDIX B

Contract

Pearl Creek STEAM Charter School

This Charter School Contract (the "Contract") is entered into and made effective as of the _____ of _____, 2025 (the "Effective Date"), by and between Pearl Creek STEAM Charter School, located at 700 Auburn Dr, Fairbanks, AK 99709 hereafter "Charter School," and the Fairbanks North Star Borough School District, acting through its School Board, located at 520 5th Ave, Fairbanks, AK 99701, hereafter the "District." Charter School and the District are referred to herein individually as a "Party" or collectively as "Parties."

WHEREAS The Charter School desires to operate within the District in conformance with Alaska Statutes 14.03.250-290 and all applicable District policies and procedures; and

WHEREAS, the District has reviewed and approved the Charter School's application, subject to any amendments or conditions noted by the District;

WHEREAS, by Board Resolution adopted _____, the District conditionally granted the Charter School's application contingent upon the negotiation and execution of a contract acceptable to the District and subject to certain other conditions, including approval by the State of Alaska Department of Education and Early Development; and

WHEREAS the Parties contemplate that this Contract will govern the relationship between the Parties and the operation of the Charter School;

NOW THEREFORE, in consideration of the mutual covenants and agreements contained in this Contract, the Parties agree as follows:

The Charter School shall provide an educational program in the District subject to the terms and conditions of this Contract, commencing on the _____ day of _____ for the school year _____. Services will be provided in accordance with the Charter School Calendar identified herein.

1. Compliance with Regulatory Requirements: The Charter School shall comply with all local, state, and federal laws and regulations applicable to public schools in Fairbanks, Alaska. The Charter School further warrants that it has reviewed and fully understands all requirements imposed by District policy and regulation on the operation of charter schools and warrants that it shall adhere to all such District policies and regulations, except as otherwise stated in Section 4 herein.

2. Educational Program: The Charter School will deliver a high standard of core reading, writing, and mathematics content areas, and weave STEAM and applied project-based learning throughout. As an elementary school, PCSC teachers and staff will continue to build upon the demonstrated effectiveness of integrated, multidisciplinary teaching. Our

weekly schedule will provide daily "walk-to-STEAM" choice exploration courses for students to take deep dives into the areas of their interest, which we will call "iSTEAM". On Fridays, half of the school day will be dedicated to "Lab," which will allow for deeper engagement from the iSTEAM courses in longer experiments, tinkering, making, or field trips. Each iSTEAM course and lab will be tightly aligned with Next Generation of Science Standards and with the Alaska State Standards. Students will receive science and STEAM lessons, as well as design their own questions, run experiments, collect data, and draw their own conclusions. We will provide professional development opportunities quarterly for staff to continue to build skills in STEAM integration, novel technologies, and current science and art trends, drawing from our extensive existing partnerships and future emergent partners.

Our "logic model" or "theory of action" promotes positive outcomes such as increased student engagement in STEAM fields, improved STEAM skills, and higher rates of post-secondary STEAM educational pursuits with higher rates of proficiency as measured by the Alaska STAR and Alaska Science Assessment.

3. Achievement Levels: The Charter School's educational program shall result in students attaining the specific levels of achievement described in the Charter School's application.

4. Administrative Policies and Procedures: The Charter School has requested and received authorization for the following exemptions from District policies and procedures: Pearl Creek STEAM Charter School has been granted the following waivers from District policies and procedures:

    1. **#341 Approval of Handbooks and Directives**

    PCSC Handbooks and Directives will be approved by the PCSC Principal. The APC will provide a formal written request to the FNSBSD to waive any part of the FNSBSD Policy manual before the start of the next school year for implementation when necessary for the success of the Charter School.

    2. **#324.1 Assignment and Transfer of Building Administrator:**

    The building administrator (Principal) is selected by the APC (AS 14.03.255). Due to the uniqueness of the educational programs, the reassignment or transfer of the building administrator would severely impact the charter school staff as well as students. The APC requests a waiver to ensure the long-term stability of the charter school administration

    a. Request for waiver to FNSBSD Policy Manual Policies: The Charter School shall request a waiver to the FNSBSD through a formal request presented by the PCSC

Principal to the Charter APC who will review the request and have APC board approval before submitting it to the FNSBSD for implementation in the following academic year or current year as needed.

b. Admission Policies and Procedures: The Charter School shall operate for ten (10) years. As per A.S. 14.03.265(b), the Charter School shall strive to enroll all eligible students who submit a timely application. If more students apply then there is space available, a lottery will be conducted. All students who are eligible to attend the FNSBSD are eligible to apply to the Charter School. The admission policy and procedures shall operate as described in the Charter School's application (Appendix H).

   The Charter School shall not discriminate in any way against any individual or group of individuals on the basis of any classification protected by state, local, or federal law or District policy.

c. Academic Policies: Academic policies and goals for the Charter School shall be established by the Academic Policy Committee ("APC"). The APC shall meet with the Charter School Principal at least four times each year to monitor progress in achieving the APC's policies and goals. The APC shall include seven (7) to eleven (11) members, including parents of students attending the Charter School, teachers at the Charter School, and other Charter School staff. Membership in the APC shall be determined in accordance with procedures developed and approved by the Committee. The APC's founding members shall be as stated in the Charter School's Application. Members of the APC shall be expected to participate in professional development activities that help them understand their responsibilities, stay abreast of new developments in education and law, and learn new ways to cope effectively with the problems they confront. APC shall be expected to participate in at least one such professional development activity per year. Funds for such professional development activities shall be provided annually by the Charter School. Neither the APC acting as a whole nor any of its members have any authority to bind the District in any way.

5. Funding: The District shall allocate funding for the Charter School based on a per pupil allocation for the students enrolled in the Charter School, computed in a manner consistent with the method in which the District receives revenues from the State of Alaska, less administrative costs retained by the District as determined by applying the indirect cost rate approved by the State of Alaska Department of Education and Early Development. The District may allocate additional revenue beyond the per pupil allocation based on the approved program for the Charter School; but any such increase

must be approved by the District's Board. The Charter School shall comply with all local, state, and federal requirements for the receipt and use of public money.

6. School District Charges: The Charter School shall operate under the terms of the approved program budget. The program budget utilizes anticipated District funding based on a per-pupil allocation for the students enrolled in the Charter School. The per-pupil allocation is computed in a manner consistent with the method in which the District receives revenues from the State of Alaska, less administrative costs retained by the District as determined by applying the indirect cost rate approved by the State of Alaska Department of Education and Early Development. The Charter School's funding allocation from the District for purposes of creating the program budget was based on the projected first year of enrollment. The approved program budget includes the revenues identified above. In addition, revenues generated for special populations of students, revenues from grants, and special revenue funds beyond the per-pupil allocation may be approved by the District's Board.

   Operating revenues provided to the Charter School by the District may exceed or be less than the approved program budget since actual revenues shall be determined from actual student enrollments in the Charter School during the year in which the Charter School is operating. The District shall be entitled to adjust the funding to reflect actual student enrollment. Actual student enrollment shall be determined in the same manner that the State of Alaska uses to determine student enrollment and state revenues generated in the District.

7. Student Fees and Charges: The Charter School shall not charge tuition to students who reside within the District. Any fees charged to students by the Charter School, including but not limited to supply and activity fees, shall be retained by the Charter School and included in the Charter School program budget.

8. Budget and Accounting: The Charter School's funding allocation for its first school year under this Contract, subject to adjustment based on state funding and enrollment, and a statement of costs assignable to the Charter School program budget is attached as part of the final District-approved Charter School application. The budget will be amended annually to reflect changes in the Charter School's funding allocation or assigned costs for subsequent school years. On or before the 15th day of November of each year, the Charter School shall provide the District with an annual budget for the following school year for approval.

The Charter School acknowledges that adjustments to the Charter School budget may be necessary if the estimated revenues are revised due to actions by the District's Board, the Alaska State Legislature, or the Fairbanks North Star Borough.

The Charter School shall account for receipts and expenditures by using and complying with the District's accounting, audit, and other fiscal procedures. The Charter School shall establish, maintain, and retain appropriate financial records per all applicable federal, state, and local laws, rules, and regulations. It will make such records available to the District upon request. The Charter School agrees that it shall comply with all local, state, and federal requirements for the receipt and use of public money.

9. Facility: The Charter School shall be operated at the following location:

The Pearl Creek STEAM Charter School is located at 700 Auburn Dr, Fairbanks, AK 99709. The school building is positioned in a fringe rural setting on 27.89 acres of mostly forested land surrounded by residential neighborhoods. It is approximately 2.5 miles north of the University of Alaska Fairbanks (UAF). Students at the Charter School would have access to miles of public trails throughout the adjacent boreal forest for skiing and running, a pick-your-own raspberry farm to the north, fields for sports, a fenced garden, and a playground.

The Charter School is a two-story, 62,983-square-foot building located on the property. There are twenty-two (22) full-sized classrooms and three (3) half-sized classrooms that would be divided accordingly among grade levels and special education, allowing room for growth. Additionally, the building has an area for reception and administration, including an open workspace, an office, a conference room, and storage rooms. There is a library, one (1) to two (2) rooms for before and after school childcare, a gym, a multi-purpose commons area, two (2) rooms for music/art/explorations, a kitchen that could be used to provide lunch for students, a faculty lounge with kitchen, a staff workroom, a nurse's room, custodial office, and storage spaces. The Charter School would pay a yearly lease to be negotiated with the FNSBSD.

The Charter School warrants that the Facility shall always comply with all local, state, and federal health and safety requirements applicable to public schools in the District. Should the Charter School wish to enter any facility lease or extension thereof, the Charter School shall be required to confer with and obtain prior written approval from the District's Director of Purchasing.

10. Procurement: The Charter School warrants that it shall comply with all District policies and procedures and all applicable state, federal, and local laws and regulations in

obtaining leased or rented space. The Charter School shall be solely responsible for funding the procurement of all leased or rented space, materials, and supplies. All Charter School personnel shall be recruited and furnished at Charter School's sole expense.

11. Teachers and Staff: At the time of executing this Contract, the parties **anticipate** that the following teachers and staff members will, under separate agreements, teach in the Charter School:

Paula Addis
Titles: Elementary Teacher

Kristen Alonzo-Taggart
Titles: Elementary Teacher

Myraflor Baguio
Titles: Elementary Teacher

Lisa Bishop
Titles: Elementary Special Education Teacher

Kristi Downing
Titles: Elementary Teacher

Arlene Fernandez
Titles: Elementary Teacher

Melinda Garnier
Titles: Student Behavior Support Technician

Samantha Hammer
Titles: Kindergarten Aide

Amber Hays
Titles: Kindergarten Aide

Barbara Keller
Titles: Elementary Teacher

Jessica McBrien

Titles: Elementary School Administrative Secretary

Suki McGrady
Titles: Nutrition Services

Karin Mensing
Titles: Elementary School Secretary

Allison Mogensen
Titles: Elementary Music Teacher

Jennifer Norton
Titles: Elementary Teacher

Dawn Olund
Titles: Elementary Physical Education Teacher

Eamon O'Regan
Titles: Elementary Teacher

Nikki Paul
Titles: Elementary Teacher

Joann Marie Ugay
Titles: Elementary Special Education Teacher

Moira Westervelt
Titles: Elementary Teacher

Kristen Zayon
Titles: Library Associate

The Charter School shall promptly provide the School District with written notice of any permanent changes to staff.

At the time of executing this Contract, the Parties anticipate that the following individual(s) will, under separate agreement(s), act as a principal/administrator in the Charter School:

- Shawna Henderson, Principal

The Charter School's principal/administrator, teachers, and staff shall have no authority to bind the District in any way. The Charter School shall promptly provide the District with written notice of any proposed changes to the Charter School's staff.

The Charter School agrees that certificated staff shall be evaluated in an equivalent manner as other teachers and administrators in equivalent positions in the District. Evaluation procedures for certificated staff must be identical to the District's procedures unless the Charter School's approved application includes a detailed description of the evaluation procedures to be used in the Charter School, in which case the Charter School may use that District-approved procedure. The Performance Standards adopted by the State of Alaska Board of Education and Early Development and the District for teachers and administrators must be included in any alternative evaluation procedures that are proposed for certificated staff. However, to clarify expectations, the Charter School's Academic Policy Committee may develop additional performance indicators that are relevant to the educational program of the Charter School. To the extent required by any applicable collective bargaining agreement, any changes to the evaluation procedures for teachers must be developed in consultation with the teacher's union, giving the union full opportunity to review and collaborate on those changes.

Unless the School District and any association representing an employee agree to an exemption, all provisions of any existing negotiated or collective bargaining agreement applicable to any employee shall remain in effect while the employee provides services at the Charter School.

12. Pupil-Teacher Ratio: The Charter School shall maintain the following pupil-teacher ratio unless the APC and Principal approves a new ratio: 18:1 (kindergarten), 22:1 (1st-3rd grade) and 24:1 (4th-5th and 6th-8th).

13. Enrollment: The Charter School shall enroll a minimum of 150 students and a maximum of 526 students at all times. Student enrollment may be adjusted pursuant to the admissions procedures set forth above if there is increased student demand to attend Charter School.

14. School Calendar: Unless otherwise specified in this Section 14, the Charter School shall follow the District's yearly calendar, including dates for mandated testing, holidays, and parent-teacher conferences.

15. Retirement: All employees of the Charter School shall be members of the Teachers' Retirement System or the Public Employees' Retirement System and shall be subject to the requirements of those systems.

16. Term: This Contract shall be effective upon complete execution and shall be reviewed annually. The Contract has been approved for a period of ten (10) years and will terminate on _____ (the "Termination Date"). The Charter School may apply for an extension of this Contract or reapply for a new Contract no later than 180 calendar days before the Termination Date. In its sole discretion, the District may grant or deny any such request for extension or reapplication.

    Although this Contract is for the operation of the Charter School for a period of ten (10) years, any financial commitment on the part of the District contained in this Contract is subject to annual appropriation by the District. The Parties agree that the District has no obligation to fund the financial obligations under this Contract other than for the current year of the Term. The Parties further agree that the District has no obligation to provide the services described within this Contract other than for the current year of the Term.

17. No Third-Party Beneficiaries: Nothing in this Contract is intended to confer upon any person, other than the Parties, any rights, remedies, obligations, or liabilities under or by reason of this Contract.

18. Termination: The District may, in its sole discretion, terminate this Contract for the Charter School's failure to meet educational achievement goals or fiscal management standards, for a default in any provision of this Contract, or for any other cause. The District shall provide at least 30 days' written notice to the Charter School of its intent to terminate this Contract and, if applicable, the reasons for doing so. If the Charter School fails to remedy the cause for termination within the time provided in this notice, then this Contract shall automatically terminate at the date stated in the notice. Upon termination, The Charter School shall immediately return any unused funds to the District.

    The Charter School may terminate this Contract for the following school year by giving written notice to the District on or before February 1 of a given school year of its intent to cease operations for the following year.

19. Risk Management: The Charter School agrees to adequately protect against liability and risk through an active risk management program. The Charter School agrees that it shall coordinate all risk management activities through the District's Department of Risk Management and Insurance (the "Department"). The Charter School shall not compromise, settle, negotiate, or otherwise affect any disposition of any actual or potential demands, claims, lawsuits, fines, judgments, or liabilities without first consulting with the Department and receiving the Department's prior written approval.

The Charter School shall always operate in such a manner as to minimize the risk of injury or harm to students, employees, and others. The Charter School shall comply with all District policies and procedures and all applicable local, state, and federal laws concerning student welfare, safety and health, including, without limitation, those policies, procedures, and laws addressing the reporting of child abuse, accident prevention, disaster response, and governing the operation of school facilities.

20. Contract Compliance: The Charter School shall actively oversee its operations to ensure that the terms of this Contract are met. The Charter School shall meet regularly with parents, teachers/staff, and (as appropriate) students to review, evaluate, and improve the operations of the Charter School. The Charter School shall meet with the Academic Policy Committee at least quarterly to monitor progress in achieving the Committee's policies and goals.

21. Indemnification: The Charter School shall indemnify, defend, and hold harmless the District and its officers, agents, and employees from and against all demands, claims, lawsuits, fines, judgments, and liabilities (including, without limitation, actual attorney's fees and expenses) arising out of this Contract or in any manner pertaining to the Charter School's operations. This expressly includes but is not limited to, any claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other losses of any kind or nature whatsoever. The obligations of this Section 21 shall survive the termination or other expiration of this Contract.

22. No Agency: Nothing in this Contract shall be construed to constitute the Charter School as an agent or employee of the District, nor shall the Charter School have any authority to bind the District.

23. Non-Assignability: Neither this Contract nor any duties hereunder may be assigned or subcontracted, in whole or in part, by the Charter School without the written consent of a duly authorized representative of the District.

24. Notices: Any notice to be given hereunder by either Party shall be in writing and personally delivered, emailed, or mailed to the other Party at the address(es) set forth herein:

    If to the District:
    FNSB School District
    Attn: Superintendent
    520 5th Ave,

Fairbanks, Alaska 99701

If to the Charter School:
Pearl Creek STEAM Charter School
700 Auburn Dr,
Fairbanks, AK 99709

25. Miscellaneous: This Contract shall be governed by and construed per the laws of the State of Alaska. Any action arising from this Contract shall be brought before a court of competent jurisdiction in Fairbanks, Alaska.

    The terms and conditions of this Contract shall not be amended, altered, waived, modified, or changed except by a written instrument duly executed by authorized representatives of each Party.

    If any term, covenant, or condition of this Contract or application thereof to any person or circumstances shall, to any extent, by invalid or unenforceable, the remainder of this Contract or the application of such term, covenant, or condition to persons and circumstances other than those to which it has been held invalid or unenforceable, shall not be affected thereby, and each term, covenant, and condition of this Contract shall be valid and shall be enforced to the fullest extent permitted by law. This Contract may be executed in counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same document.

26. Entire Agreement: In addition to the mutual covenants and agreements set forth herein, the Parties agree to be bound by the terms of the final approved Charter School Application attached hereto as Exhibit A, the terms of which are incorporated herein by reference. In the event of any conflict between this Contract and the Charter School Application, this Contract shall prevail. This Contract (which includes all recitals, exhibits, and documents incorporated by reference) constitutes the entire agreement of the Parties pertaining to its subject matter and supersedes and replaces in its entirety all prior and contemporaneous negotiations, understandings, and agreements. No covenant or condition not expressed in this Contract shall affect or be effective to interpret, change, or restrict this Contract. This Contract may only be amended or modified in writing, duly signed by the District's School Board President and the Charter School's authorized representative.

Dated _____

School Board President
Fairbanks North Star Borough School District

Dated _____

APC President
Pearl Creek STEAM Charter School

Dated _____

Principal
Pearl Creek STEAM Charter School

APPENDIX C

Bylaws

Pearl Creek STEAM Charter School

ARTICLE I

Name, Fiscal Year

SECTION 1. Name. The name of the organization shall be "Pearl Creek STEAM Charter School" and shall hereinafter be referred to as "the School," "Pearl Creek," or "PCSC."

ARTICLE II

Purpose and Definitions

SECTION 1. Purpose. The purpose of Pearl Creek STEAM Charter School shall be to educate children under a charter agreement between Pearl Creek and the Fairbanks North Star Borough School District ("FNSBSD") in accordance with the mission set forth in the charter agreement.

SECTION 2. Definitions.

(a) "Majority Vote" is defined as greater than fifty percent (50%+1) of voting members (1) in good standing and (2) present at a regular or special meeting.

(b) "Super Majority Vote" is defined as two-thirds (⅔) or 66.66% of the voting members (1) in good standing and (2) present at a regular or special meeting.

(c) "A quorum" is defined as the minimum number of voting members that must be present at an Academic Policy Committee meeting to conduct a valid meeting and conduct business. An APC meeting has achieved a quorum when greater than fifty percent (50%+1) of the voting members are present. Telephonic or virtual participation is permitted.

(d) "By resolution" is defined as an APC decision to take action. Every resolution requires a majority vote unless specified otherwise in these bylaws.

ARTICLE III

Governance

Pearl Creek STEAM Charter School shall be governed by the Academic Policy Committee ("APC"). The APC shall have the maximum power permitted by law, shall establish policy for the school, shall fulfill duties as prescribed in A.S. 14.03.250, *et seq.*, and set forth in these bylaws, and shall perform the following functions, including but not limited to:

SECTION 1. Ensure the fulfillment of the mission of Pearl Creek STEAM Charter School as stated in the PCSC/FNSBSD contract;

SECTION 2. Oversee and have the ultimate accountability and responsibility for academics, curriculum legal/risk management, personnel issues, finances, operations/maintenance, and budgeting issues, and as otherwise permitted or required by the above-mentioned contract or by law;

SECTION 3. Promote professional conduct in accordance with FNSBSD policies;

SECTION 4. Select a Principal.

SECTION 5. Delegate to the Principal those tasks deemed appropriate by the APC;

SECTION 6. Review non-personnel related contracts;

SECTION 7. Review, upon request by any parent, teacher, or staff, requests for any purchase of materials initially denied by the Principal;

SECTION 8. Review and rule on any other questions, issues, or policies that may from time to time arise, to the extent permitted by law;

SECTION 9. No members of the APC shall act on their own in the name of the APC unless so authorized by these bylaws or by resolution of the APC.

ARTICLE IV

Academic Policy Committee

SECTION 1. Membership. Membership of the Academic Policy Committee is by election, except as provided herein.

(a) The number of members constituting the entire APC shall be between seven (7) to eleven (11) voting members.

(b) There shall be teachers, staff, and parents with students in the school as members.

(c) At least two (2) members will be permanent staff members
    (i) At least one (1) of whom shall be a certified teacher.

(d) At least two (2) members will be parents of the students currently enrolled in the school.

(e) The Principal or Acting Principal, then, under contract with the school, shall be a non-voting ex-officio member of the APC.

SECTION 2. Term. The term of all elected members of the APC shall be two (2) years, beginning August 1 and ending July 31. The Bylaws' goal is that no more than half of the member positions shall be up for re-election in any regular election. If this balance is not maintained at any time, the APC may extend (but not shorten) the term of any APC member(s) until this balance is achieved. A majority vote of the APC shall be required to extend any term.

SECTION 3. Term Limitations. There shall be no limitation on the number of consecutive or non-consecutive terms that any member of the APC may serve.

SECTION 4. Vacancies. Any vacancy occurring in the APC may be filled by a majority vote of the remaining members of the APC. The replacement member of the APC shall be appointed for the unexpired term of their predecessor in office.

SECTION 5. Compensation. Participation in the APC is voluntary. Members of the APC shall not receive any monetary or non-monetary compensation for their participation in the APC.

SECTION 6. Resignation. Any APC member may resign at any time by giving written notice to the Chair or Secretary of the APC. Such resignation shall take effect at the time specified therein, and unless otherwise stated, the acceptance of such resignation shall not be necessary to make it effective.

SECTION 7. Removal. The APC may remove any APC member with or without cause when it determines that the best interests of the APC and the School would be served thereby. Removal shall require a supermajority vote of the APC, including the APC member subject to removal.

SECTION 8. Conflict of Interest. APC members have a fiduciary duty to act in the interest of the common good and for the benefit of the School. These Bylaws intend to maintain confidence and prevent the use of this membership for private gain or any other improper purpose. To avoid conflicts of interest, except for the staff positions, no voting members of the APC shall be paid staff members of the school, including the Principal and any other person who receives any monetary compensation from the school.

SECTION 9. Appointment of Additional Members. From time to time, by a supermajority vote, the APC may appoint an additional member to the APC when deemed necessary to benefit the mission of the School's charter.

ARTICLE V

Officers of the Academic Policy Committee

SECTION 1. Officers. The officers of the APC shall be Chair, Vice Chair, Secretary, and Treasurer, each of whom must simultaneously be a member of the APC. The APC may elect or appoint such other officers, including one or more assistant secretaries, as it shall deem desirable, such officers have the authority and perform the duties prescribed, from time to time, by the APC.

SECTION 2. Election and Term of Office. The term of all officers of the APC shall be one (1) year. The officers of the APC shall be elected annually by a majority at the first regular meeting following an election of the Academic Policy Committee or as soon as it is convenient to hold.

SECTION 3. Removal. Any officer elected or appointed by the APC may be removed from office by a majority vote of the entire APC whenever, in its judgment, the School's best interests would be served thereby.

(a) A successful removal of an officer from their elected or appointed position does not remove the member from the APC. A separate vote is required to remove an APC member per ARTICLE IV, SECTION 7.

SECTION 4. Vacancies. A vacancy in any office because of death, resignation, removal, disqualification, or otherwise may be filled by a majority vote at a regular or special meeting for the unexpired portion of the term.

SECTION 5. Chair. The Chair shall be a parent member of the APC and shall be the presiding officer at all meetings of the APC. The Chair shall have such authority and perform such duties as directed by the APC from time to time.

SECTION 6. Vice-Chair. The Vice Chair shall be a parent member of the APC. In the absence of the Chair, or in the event of their death, inability, or refusal to act, the Vice-Chair or other APC member designated by the Chair shall perform the duties of the Chair and, when so acting, shall have all the powers of and be subject to all the restrictions upon the Chair. Any Vice Chair shall perform such other duties as may be assigned to them by the APC from time to time.

SECTION 7. Secretary. The Secretary shall keep the minutes of the meetings of the APC in computer files and/or one or more books provided for that purpose, see that all notices and agendas are duly given and posted in accordance with the provisions of these Bylaws or as required by law, keep an updated list of the mailing address, e-mail address, and telephone numbers of each member of the APC, and in general perform such other duties as from time to time may be assigned to them by the APC.

SECTION 8. Treasurer. Each October, the Treasurer shall present to the APC the annual budget for the next year, which has been prepared by the School and shall ensure that it justly supports the School's mission and goals. The Treasurer will present a Treasurer's Report at each APC meeting. The Treasurer shall perform all duties incident to the office of Treasurer and other duties as assigned by the Chair or APC.

ARTICLE VI

Election of Members to the Academic Policy Committee

SECTION 1. Elections Committee. In September each year, the Chair of the APC shall appoint an Elections Committee of at least three (3) people. At least one (1) person shall be a parent of the APC, at least one (1) person shall be a staff of the School, and at least one (1) person shall be a person who is not a member of the APC. The Elections Committee shall oversee the election process for positions on the APC. The Elections Committee shall do the following:

(a) Solicit and accept applications from candidates for membership to the APC;

(b) In its discretion, nominate individuals who have not applied to be candidates for positions on the APC to meet the mission and goals of the APC;

(c) Will bring the complete list of candidates to the APC meeting held before the elections;

(d) Make the candidate slate and statements available online or hard copies to parents, students, or personnel at least one (1) week before the election;

(e) May establish a forum for public introduction of approved candidates;

(f) Prepare a secret ballot listing the slate of candidates;

(g) Distribute and collect the secret ballots and otherwise oversee the election so that it is conducted in a fair manner;

(h) Set date for election;

(i) Results of the election must be reported no later than December 1st;

(j) Announce election results to APC and candidates.

SECTION 2. APC Role in Elections. The APC shall do the following:

(a) At a regular meeting before the elections, approve the final election ballot;

(b) At a regular meeting after election results are announced, the APC shall swear in new members.

SECTION 3. Eligibility to Vote. A person is eligible to vote if they are in the following categories:

(a) Parents or legal guardians of students enrolled in the School on the day of the election;
(b) A Principal of the School; or
(c) School teachers, School teachers' aides, or School staff employed by the FNSBSD with a current contract for the School effective on the date of the election.

The Elections Committee shall be responsible for monitoring voter eligibility and resolving any disputes involving casting ballots.

SECTION 4. Casting of Ballots. The form and procedure of voting may occur at the discretion of the Elections Committee. All eligible voters, as defined in ARTICLE VI, SECTION 3 above, may vote for all positions on the APC.

ARTICLE VII

Meetings of the Academic Policy Committee

SECTION 1. Open Meetings Act. The APC formally adopts the Open Meetings Act, A.S. 44.62.310 *et. seq.* ("the Act"). All meetings are open to the public and shall be conducted, and all notices and agendas are posted in accordance with the Act. If any portion of these bylaws is more specific than the Act, then that portion of the bylaws shall control unless prohibited by law.

SECTION 2. Meetings. The APC shall also hold regular meetings, typically monthly, at least four (4) times a year. Parents, teachers, and staff members of the School are hereby invited to such meetings through school-wide communication via electronic, email, handouts, or other form at least one (1) week before the date set for such a meeting.

SECTION 3. Special Meetings. Special meetings of the APC may be called by the Chair, Principal, or any three members of the APC.

SECTION 4. Notice of Meetings. Notice of regular or special meetings stating the place, day, hour, and agenda shall be delivered to each member of the APC and posted at the School or in the school bulletin not less than one (1) week before the date set for such a meeting.

SECTION 5. Communication. Any materials pertinent to any regular or special meeting may be transmitted as the APC finds most effective and efficient.

SECTION 6. Executive Sessions. In accordance with the Open Meetings Act, an executive session may be held to discuss matters including but not limited to:

(a) Attorney-client matters;

(b) Non-personnel contract proposals or negotiations;

(c) Sensitive personnel matters; and

(d) Confidential student matters.

The motion requesting the executive session shall state the nature of the matter to be discussed. Only those people invited by the APC or permitted by law may be present during the executive session. Unless invited or permitted by law, any executive session in which personnel issues specific to a particular employee are discussed none of the following APC members shall attend:

(a) School teacher

(b) School teacher's aid

(c) School Staff

At any public meeting, school teachers, school teachers' aid, or school staff members shall not be entitled to vote on any personnel issues specific to a particular employee.

The APC shall not make final policy decisions, nor shall any resolution, rule, regulation, formal action, or any action approving a contract or any other final action be approved at any session closed to the public. Matters discussed during the executive sessions shall remain confidential among those attending. The Secretary of the APC shall maintain topical minutes of all executive sessions.

SECTION 7. Informal Action of Members. Any action that otherwise may be taken at any meeting of the APC may be taken without a meeting if consent in writing, setting forth the action so taken, is signed and unanimously agreed upon in writing or e-mail by 100% of the members of the APC entitled to vote with respect to the subject matter thereof. The member signature may be electronic.

ARTICLE VIII

Committees

SECTION 1. Membership of Committees. By resolution, the APC may designate and appoint one or more committees to perform specific tasks assigned by the APC. The APC will select committee members who will best serve the interests and mission of the School and APC.

SECTION 2. Instruction and Responsibility. Each committee shall be instructed on the length of time each member is being asked to serve, the service the APC wishes each committee to render, the resources the APC will provide, and the approximate dates on which the APC wishes to receive reports.

SECTION 3. APC Powers and Prerogatives. All committee recommendations must be submitted to the APC for official action. By resolution, the APC shall have the power to dissolve any committee at any time during the life of any committee.

SECTION 4. Meetings. Committee meetings shall comply with the Open Meetings Act.

SECTION 5. Curriculum Advisory Committee. The APC shall maintain a Curriculum Advisory Committee composed of subject matter experts in science, technology, engineering, art, and mathematics (STEAM). This committee shall have at least (7) members and shall advise the APC.

SECTION 6. Grants Committee. The APC shall maintain a Grants Committee comprised of experts in writing and administering grants for education, educational outreach, informal education, citizen science, etc. They will inform and assist in not only obtaining grant funding but also executing program evaluation and refinement.

SECTION 7. Student Experience Committee. The APC shall maintain a Student Experience Committee that will provide advice on how to make PCSC welcoming and accessible to all students in the FNSBSD.

SECTION 8. Elections Committee. The APC shall maintain an Elections Committee per ARTICLE VI.

ARTICLE IX

Principal

SECTION 1. Selection and Removal. The School Principal Shall be selected by a majority vote of the APC. Removal of the Principal shall require a supermajority vote of the entire APC when it is in the School's best interest.

SECTION 2. Duties and Responsibilities. The Principal shall have those day-to-day management and other duties as assigned and delegated by the APC or as required by law. The Principal shall select, appoint, or otherwise supervise employees of the school. The Principal shall see that all policies, orders, and resolutions of the APC are carried into effect. Upon delegation by the APC, the Principal shall:

(a) Maintain financial records of the school;

(b) Manage the day-to-day operation of the school;

(c) Meet regularly with parents and teachers of the school to review, evaluate, and improve operations of the School;

(d) Meet with the APC regularly to monitor progress in achieving the APC's policies and goals;

(e) Submit appropriate information as required by the School District, Department of Education, or Federal and State Agencies; and

(f) Submit for approval or disapproval to the APC all significant policy and financial decisions that may substantially impact the School.

ARTICLE X

Administration of Finances

SECTION 1. Fiscal Year. The fiscal year of Pearl Creek shall coincide with the fiscal year of the Fairbanks North Star Borough School District.

SECTION 2. Contracts. The APC has the authority to enter into contracts, execute and deliver instruments, and otherwise legally bind the School. The APC may delegate this authority, either in specific instances or in general, to the Principal or their designee, or to any officer of the APC.

SECTION 3. Budget and Purchasing Authority. The APC, with support from the Principal, is responsible for the development and approval of the School budget in accordance with FNSBSD timelines and standards. On or before the 15th day of November of each year, the School shall provide the FNSBSD with an annual budget for the following school year for approval. The annual budget for the following school year will be provided to the APC by the Treasurer and Principal in October.

Significant budget changes that may occur during the School year require APC approval. Withdrawals or transfers from all FNSBSD-monitored school funds for purchasing any single non-consumable item or capital improvement over ten thousand dollars ($10,000.00) shall be approved by both the APC and the Principal. In instances requiring emergent action, the Principal may act on behalf of the APC and shall report such expenditures and the reason for the emergent action to the APC at the next regular or special meeting following said action. Any expenditure for single non-consumable items less than ten thousand dollars ($10,000.00) and purchases of consumable items necessary for school operations from funds available for such purchases require only the approval of the Principal.

SECTION 4. Accounting. The Principal or their designee shall provide financial information to the Treasurer before the APC meetings to assist with the Treasurer's Financial Report. The Principal and Treasurer will work together to prepare proposed budgets to the APC for approval and the FNSBSD. The APC is responsible for the fiscal health of the School. At regular APC meetings, with an accounting of expenditures and performance relative to the approved budget. The APC may at any time cause a full and partial independent audit of the school monies to occur.

ARTICLE XI

Parliamentary Authority

SECTION 1. Conduct of Meetings. The rules contained in Robert's Rules of Order shall govern the conduct of meetings of the organization in all cases to which they are applicable and in which they are not inconsistent with these bylaws. The Chair may informally suspend or apply Robert's Rules to facilitate discussion amongst the members. Committee meetings are not required to use Robert's Rules of Order unless adopted voluntarily by that committee.

ARTICLE XII

Indemnification

SECTION 1. Indemnification. The School may, to the maximum extent permitted by law and in the absence of School or District insurance, defend, hold harmless, and indemnify all current and former members of the APC, all persons who, at the request of the APC have acted or not acted, and all persons currently or previously employed by the School, from and against any

claims, civil or criminal, in which that person is made a party by reason, in whole or in part, of being or having been an APC member or officer, at the request of the APC have acted or not acted, or being or having been an employee of the School, when that person has acted within the course or scope of their duties to the School. Indemnification shall be provided by a majority vote of the APC on a case-by-case basis.

ARTICLE XIII

Amendments to Bylaws

SECTION 1. Amendments. These bylaws may be altered, amended, or repealed, and new bylaws may be adopted if the following requirements are met:

(a) The proposed change in the bylaws has been submitted in writing to all of the members of the APC and posted publicly in the School at least two (2) days before the meeting at which the proposed change will come up for a vote;

(b) The proposal is submitted by an APC member, by a parent with at least one (1) student currently enrolled in the School, by the Principal, or other School Staff then under contract with the School; and

(c) A supermajority of the APC adopts the proposal at any regular or special meeting.

_____

Date Adopted by APC

APC Secretary Signature / Signature Date

_____

APC Chair Signature / Signature Date

APPENDIX D

Academic Policy Committee

Pearl Creek STEAM Charter School

Teachers	
Shawna Henderson Ex Officio	Shawnahen@hotmail.com
Kristi Downing	Kristi.Downing@k12northstar.org
Paula Addis	paddis1013@gmail.com
Dawn Olund	dawnslawns2020@gmail.com
Parents	
Katie Spellman	Katie.Lin.Spellman@gmail.com
Ben Loeffler	bloeffler3@gmail.com
Heidi Wood	heidi.wood@gmail.com
Jennifer Redmond	jen.miller907@gmail.com
Lou Frenzl	rfrenzl81@gmail.com
Edgar Henry	nizoonh@icloud.com

Pearl Creek STEAM

Charter School

Meeting Agenda

February 16, 2025

ZOOM LINK

Welcome and Call to Order (TIME 4:30 PM

APC Members: Note present (zoom or in person) or excused Shawna Henderson - on zoom - non-voting

Kristi Downing - in-person - Approving bylaws - yay

Paula Addis - in-person Teacher - Approving bylaws -yay

Dawn Olund - in-person - Approving bylaws -yay

Katie Spellman - zoom - parent and UAF - Approving bylaws -yay

Ben Loeffler - in-person - parent - Approving bylaws -yay

Heidi Wood - Zoom parent - Approving bylaws -yay

Jennifer Redmond - not here

Lou Frenzl - zoom - parent - Approving bylaws -yay

Edgar Henry - zoom - zoom - Approving bylaws - yay

Guests Present: Christina Turman, Amy Skraba, Dara Brann, April Monroe, Eleanor Guthrie, Naomi LaSota, Patty Miller, Peter Miller, Maria Stejskal, Shane Powers, Kristina Wood, Solomon Pomerantz, Brittney Deppe, Gwen Jackson, Emily Potter, Danielle Thomas, Kristi Reichart.
On Zoom: Sarah Heinchon, Robert Herrick, Allison Mogenson, Kyle Heinchon, Arena Herrin, Bennett Wong, Chelsea Shultz, Carolyn Loeffler, Katie Straub, Eamon O'Regan

Consent Agenda Approval

1. Motion to approve agenda: [Shawna Henderson]
2. Second: [Lou Frenzl second]
3. Debate - none
4. Vote: [passed]

Bylaws

1. Motion to approve: [Paul Addis]
2. Second to approve: [Kristi Downing]
3. Debate

Ben Section II A,B regarding voting - 50% + 1 must be in attendance to have a meeting and 50% + 1 of those can pass any resolutions

Kristi Downing recommended wording changes in sections IV and V - wording changes were made

Katie Spellman asked about October budget deadlines

Motion to approve bylaws as amended - Paula Addis

Seconded - Dawn

4. Vote: [Passed!)

Officer Elections

1. Chair

a. Nomination(s): Heidi Wood
b. Motion to vote on nominations: Ben moved to nominate
c. Second: Dawn Olund
d. Debate: None
e. Vote outcome: All in attendance voted Yay

2. Vice Chair

a. Nomination(s): Heidi nominated Ben Loeffler
b. Motion to vote on nominations: Lou
c. Second: Heidi
d. Debate: None
e. Vote outcome: All in attendance voted Yay

3. Secretary

a. Nomination(s): Heidi Wood nominated Kristi Downing
b. Motion to vote on nominations: Paula Addis
c. Second: Dawn
d. Debate: none
e. Vote outcome: All in attendance - Yay

4. Treasurer

a. Nomination(s): Jennifer Redmond
b. Motion to vote on nominations: Kristi Downing
c. Second: Paula Addis
d. Debate: none
e. Vote outcome: All in attendance voted Yay

Reports

1. PCSC Principal - Shawna wil make a public testimony Tuesday. Thankful for all the efforts put forth 🙂
2. Finance (Treasurer) -
3. Committee Lead Updates

1. Curriculum - Shawna believes it is done. Kristi asked about policy waivers. Look through chapter 9 (code 900/910) This can wait a work session after turning in the Charter contract.

2. Facilities - Judith Grunau finalized

3. Equity committee - Removing barriers to admission, transportation equity, admission weighted policy to Title I and migrant ed. Students Had folks at NAACP and FNA proof read and add ideas. FNA will have a committee report to APC

4. Transportation with Gwen - options: identify who needs transportation, maximize what we can do with the district, other options can be discussed based on finances and community involvement.

5. Letter of Intent committee - Got it done

6. By-laws and contracts - Kristina - bylaws are done! The contract is well done but can be tweaked with district. Not complete until signed with district.

7. Communications committee - Christina - pearlcreeksteamschool.com our FB is Pearl Creek Steam School. Danielle is our main FB person. News sources are in contact to do media pieces on our project.

   Emily - Testimony for Tuesday night school board meeting:

   - We want to start now, if not please hold the building
   - Need for a new charter the waitlist is long at all chapters
   - Financial - we are not sinking the ship. There is a demand for Pearl Creek, and closing it will deplete FNSBSD enrollment. We will bring in $$ for the district as a charter.
   - Accessibility - how were making it an accessible school
   - Vote for us not personal interests.
   - Some to give voice to what our plan includes - lab Fridays, UAF connections, etc.
   - We want to be open and we want to have more kids at Pearl Creek

8. Financial committee - Jennifer - Section I completed Appendix I is a financial analysis for the charter. PLC budget is not adding to the deficit. Revenue could be lost due to closing PLC due to the loss of students from outmigration.

1. Compile large PDF

New Business

1. Tuesday Testimony - Shawna Henderson, Heidi Wood , Ben Loeffler, Peter Miller, Emily Potter, Jennifer Redmond, Kristina Wood, Arena Herrin, Shane Powers, and Kristina Miller will contact other lawyer parents to see if they will testify.

2. Survey Results - Kristina Wood - 53 results #1 ask is outdoor time

#2 UAF partnership

#3 project-based learning and real-life skills

Other: Small class sizes, diverse, community bonds, before and after care, 96% want k-8, want specials - music, art, gym and gifted classes. 90% were interested in attending a charter 8% a maybe.

3. Communications Publicly - Christina Turman has reached out to news sources

Notes

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•

Action Items

1. Tuesday testimony
2. Connect with Shane Powers to get on Slack
3. Christina Turman will contact Dr. Meinert regarding a meeting addressing the charter after Tuesday. Christina, Jennifer, Ben, April, Maria
4. Saturday 10:00 am 2/22/2025 at UAF Wood Center - work session, NOT an APC, open to public - put it on FB by Danielle.
5. Get Zoom set up for meeting through Kristina Wood

For the good of the order:

How do we keep track of hours toward charter? Look for a spot on Slack.

If able, please read through the entire Charter Proposal before 10:00 pm
Dawn made a motion to adjourn the meeting, Paula seconded. passed

Next Meeting Agenda Items
Hiring the principal

Paula Addis

5080 Ringstad Ave, Fairbanks, AK 99709

paddis1013@gmail.com| 907-388-5733

Professional Summary

Dedicated and experienced educator with over 24 years at Pearl Creek Elementary, fostering strong relationships with students, families, and the community. Passionate about creating engaging learning environments that promote academic growth and confidence in students. Skilled in differentiated instruction, leadership, and curriculum development.

Professional Experience

Primary Multiage Classroom Teacher at Pearl Creek Elementary School – Fairbanks, AK
(August 2004 – Present)
- Lead a multiage classroom, fostering academic and personal growth through innovative teaching strategies.
- Develop and implement differentiated instruction tailored to diverse learning needs.

Building Leadership Team Member at Pearl Creek Elementary School – Fairbanks, AK
(August 2024 – Present)
- Contribute to school-wide decision-making.

Building Substitute at Pearl Creek Elementary School – Fairbanks, AK
(August 2002 – May 2004)
- Provided instructional continuity, maintaining structured and engaging classroom environments.

Special Education Aide at Pearl Creek Elementary School – Fairbanks, AK
(April 2002 – May 2002)
- Supported students with special needs through individualized instruction and assistance.

Substitute Teacher (District-wide) (January 2002 – April 2002)
- Taught various grade levels and subjects, adapting quickly to different classroom settings.

UAF Student Teacher & Methods Student at Pearl Creek Elementary School – Fairbanks, AK
(January 2001 – December 2001)
- Planned and delivered lessons under mentor guidance, refining instructional techniques.

Committee & Leadership Roles

Communications Co-Chair, Fairbanks Education Association (FEA) (April 2014 – Present)
– Develop and distribute communications to engage educators via radio and social media platforms.
Recording Secretary, FEA Board of Directors (April 2021 – Present)
– Maintain official records and support board initiatives.
Committee Member FNSBSD Board Curriculum Committee (August 2016 – April 2020)
– Contributed to district-wide curriculum updates.

North Chena Director, FEA Board of Directors (April 2008 – April 2018)
– Advocated for educators' interests at the FEA board level.
Pearl Creek Building Representative, FEA Representative Council (August 2005 – May 2008, August 2018 – May 2021)
– Served as a liaison between teachers, the association, and administration.
Bargaining Committee Member, Fairbanks Education Association (FEA) (August 2006 – October 2023)
– Assisted in contract negotiations.

National & State-Level Representation

NEA Representative Assembly, Elected Delegate (Alaska) (June 2020 – Present)
NEA-Alaska Delegate Assembly, Elected Delegate (January 2006 – Present)

Curriculum Development & District Work

- Participated in FNSBSD Curriculum Update Committees for Language Arts, Social Studies, Science, and Math multiple times.

Education & Certifications

Alaska Reads Act Certification (December 2024)
Masters in Literacy Education, Cambridge College (May 2011)
Bachelors in Elementary Education, University of Alaska Fairbanks (December 2001)
Scientific Diploma, Monroe High School (May 1993)

Professional Development & Training Highlights

- Daily 5 & Math Daily 3
- Thinking Maps & Write Their Way
- Kagan Strategies & Team Building
- Handwriting Without Tears
- Code.org & Google Classroom
- NEA-Alaska Bargaining Training
- Solution Tree Conference on Professional Learning Communities
- Mickelson ExxonMobil Teachers Academy
- NEA Leadership, Women & Minorities, and NCUEA Conferences (Various Locations)

Kristi A. Downing

PO Box 83912
Fairbanks, AK 99708
907-460-3202
1170downing@gmail.com

Education

1991 Graduated high school at Juneau-Douglas HS (Alaska)
1995 B.S. Geology from UAF - obtained all my credits leading to graduation from several institutions:
University of ID, Moscow - participated in the Juneau Icefield Research Project (JIRP)
UAS, Juneau
Boston College, MA (2 years)
2016 Post-Bacc. Teaching licensure UAF
2022 - Master of Education - Elementary Education from UAF

Work Experience

2022 - present - 2nd Grade Teacher - Pearl Creek Elementary
I work in collaboration with my 2nd-grade cohort to ensure all our students are receiving a quality education and meeting 2nd-grade standards. I am also on our school's Leadership Team and the district's IDEA Team, supporting other teachers in their work. In addition, I am completing my LETRS class and thus finishing my Reading Specialist Endorsement coursework.

2022 - Education Specialist - BEST Homeschool
Daily tasks include:

- Assist families with enrollment and guidance on finding curriculum materials to meet their needs
- Advocating for students and families and connecting them with community and district resources including SSM's, ANE, Migrant Ed., McKinney-Vento, local libraries, tutors, and alternative academic and/or job skills programs.
- Understanding graduation requirements, scholarship opportunities, and qualifying curriculum options to ensure a successful path through high school

Homeschool Parent/Teacher 2018-2022
I homeschooled my son from 3rd - 7th grade through BEST Homeschool (FNSBSD) and my daughter was dual-enrolled for 3 years (10th - 12th grade) with BEST/West Valley High School/North Star College. As a homeschool parent, I have been able to explore many different curriculums, teach through different learning styles, and have a lot more involvement in the community as part of education.

McKinney-Vento Tutor/Mentor 2019-2021
I worked for the McKinney-Vento Federal Program as a tutor/mentor for high school youth experiencing homelessness/displacement/transitional housing. My time was divided between Hutchison High School and West Valley High School. The position required me to be an advocate for youth, a team player at

each school, a good communicator with a wide range of school staff and teachers as well as an empathetic, consistent, and reliable adult for the students I worked with.

2nd Grade Teacher 2016-2018
I had the joy of teaching 2nd grade for 2 years at Nordale Elementary School. I had fantastic support from the administration, as well as from my coworkers. I received high marks and praise from my principal in my reviews and connected with my student's families.

Post-Bacc. Teacher Licensure Program UAF 2015-2016
I spent the school year completing my UAF post-bacc. teaching licensure at Anne Wien Elementary School in a 2nd-grade classroom.

RTI Tutor at Pearl Creek Elementary School 2014 to 2015
I worked 15 hours/week as a math tutor for 4th, 5th, and 6th graders at Pearl Creek Elementary School, as well as a reading tutor for 1st, 2nd, and 3rd graders.

Volunteer Activities
Preparing food boxes at the Fairbanks Food Bank
Serve as a Parent voice on the FNSBSD Special Ed. Advisory Board
Alaska Songbird Institute bird bander
Trails Steward for Skyline Ridge Park Trails
Community support for Fairbanks Street Outreach - helping meet the needs of Fbx homeless

Edgar M. Henry

PROFILE

I am Dene (Koykukon Athabascan) from the Huslia and Tanana Tribes. I was raised across the interior on the Yukon and Koyukuk Rivers. By way of traditional introduction, my mother is Audrey Edwin from Nuchalwoyya, my father is Silas Henry from Huslia. My life experiences, both good and bad, blessed me with an interest in traditional healing and culture. I am currently employed at Housing First, a program designed to house the chronically inebriate and homeless community. I also own and run a small company that makes traditional medicines based off of historical Dene practices, and manage the seven rental properties I own. My first and most important roles are husband and father.

EDUCATION

Jimmy Huntington School, High School Diploma, 1997
Health Aide CPR/Early Response, 2011
Water Management and System Design Certification, 2011
Indigenous Medicinal Plants, cultural internship 2013-2017
Bachelor of Arts Alaska Native Studies, University of Alaska Fairbanks 2012-2015

WELLNESS/ EDUCATION

Old Minto Recovery Camp, 2011
Alcoholics Anonymous, 2012-Present
Beauty for Ashes, 2012
Trauma Counseling, Sunshine Counseling, Fairbanks 2013
Men's Talking Circle, 2014-Present

CURRENT ENDEAVORS

Treasurer, Director at Large Board of Directors, 2012-Present, Fairbanks Four and Innocence Movement
2015-2019
Owner, Nizoonh a traditional medicines maker, 2016-Present
Owner, Henry Properties, 2014-Present
Substance Abuse Technician, Housing First, Tanana Chiefs
2015-Present

SH

SHAWNA HENDERSON

PRINCIPAL | PEARL CREEK ELEMENTARY
SHAWNA.HENDERSON@K12NORTHSTAR.ORG

OBJECTIVE

I am interested in continuing employment with Pearl Creek Elementary Charter School within the Fairbanks North Star Borough School District.

EXPERIENCE

PRINCIPAL • PEARL CREEK ELEMENTARY • 2018-CURRENTLY EMPLOYED
Maintain school wide discipline, communicate with the school district, staff and families, provide instructional leadership, support district initiatives and goals and evaluate staff

PRINCIPAL • TICASUK BROWN ELEMENTARY • 2013-2018
Maintain school wide discipline, communicate with the school district, staff and families, provide instructional leadership, support district initiatives and goals and evaluate staff

ASSISTANT PRINCIPAL• ARCTIC LIGHT ELEMENTARY • 2012-2013
Maintain school wide discipline, communicate with the school district, staff and families, provide instructional leadership, support district initiatives and goals

RTI FACILITATOR• JOY ELEMENTARY• 2011-2012
Budget, train and oversee ERII, EMII and Title 1 tutors, determine students' needs in reading and math through data testing, facilitate PLC meetings and inform teachers of student progress using Aimsweb

PRINICPAL INTERN• BADGER ELEMENTARY• 2010-2011
Maintain school wide discipline, communicate with the school district, staff and families, provide instructional leadership, support district initiatives and goals

EDUCATION

MASTERS DEGREE IN EDUCATIONAL LEADERSHIP AND ADMINISTRATIVE CERTIFICATE • 2009 • UAA

TYPE A TEACHING CERTIFICATE • 2003 • UAF

BACHELORS OF ARTS, ENGLISH • 2001 • UAF

Ben Loeffler

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Fairbanks, AK 99709
678 372 3337
bloeffler3@gmail.com

Education and Certification

University of Alaska Fairbanks, Fairbanks AK, Candidate - PhD Engineering (Anticipated graduation summer 2025)	2022
Georgia Institute of Technology, Atlanta GA, M.S. Mechanical Engineering,	2012
Georgia Institute of Technology, Atlanta GA, B.S., Mechanical Engineering,	2010
Professional Mechanical Engineer (PE), State of Alaska [License # 124432]	2019
AEE Certified Energy Manager (CEM) [expired 12/2022]	2016

Employment

Research Professional 08/2019-present

Alaska Center for Energy and Power (ACEP) at UAF, Fairbanks, AK

- Pacific Marine Energy Center (PMEC) Co-Director
    - Leads team of 8 engineers and scientists to assess Alaska hydrokinetic resources and develop and demonstrate hydrokinetic energy technologies
    - Writes proposals and serves as Principal Investigator on research projects totaling over $20M in grant funding
    - Leads UAF collaboration with partner institutions and Department of Energy on energy research projects and initiatives
- USA Subject Matter Expert on international energy standards development (IEC TC114 MT 62600-200 and ahG 12)

Engineering Consultant 01/2020-present

Loeffler Engineering, Fairbanks, AK

- Design of solar arrays, battery energy storage system enclosures, and HVAC systems for off-grid applications [2020 - present]
- Designed and built 6-star energy rated home in Fairbanks [2022 – 2024]

Energy Management Engineer 07/2016-08/2019

Fairbanks North Star Borough, Fairbanks, AK

- Served as Project Manager for energy conservation projects. Implemented 20 energy reduction projects with total cost of $550,000 and lifetime energy savings of $2,000,000.
- Worked with Borough stakeholders and ACEP researchers to evaluate emerging and existing energy efficient technologies relevant to the Borough.
- Performed energy system engineering duties; evaluated building systems for proper operation.
- Provided input for and recommendations for Capital Improvement Projects to reduce energy costs. Scoped $2.5M lighting upgrade project with projected lifetime savings of $19,000,000.

Research Technician 09/2015-07/2016

Alaska Center for Energy and Power (ACEP), Anchorage, AK

- Data analysis of micro-grid hydrokinetic Emerging Energy Technology Fund (EETF) and Renewable Energy Fund (REF) projects, including ORPC and Oceana.
- Independent analysis and reporting of project viability or economic and power quality impact on communities. Final report writing for dissemination and publication.

Lab Technician and Research Engineer 1/2013-05/2015

Extreme Tribology Laboratory at Georgia Tech, Atlanta GA

- Assembly and operation of small caliber 0.1 MJ electro-magnetic launcher
- Design and fabrication of launch packages and launcher modifications
- Report review of existing railgun diagnostics technologies covering magnetic field, electric field, strain, temperature, composite health in rail gun environment
- Preparation and presentation of monthly written reports and quarterly presentations to Office of Naval Research

Professional Engagement

- 2024 Panelist at Alaska Rural Energy Conference, Fairbanks, AK
- 2024 Panelist at Alaska Forum on the Environment, Anchorage, AK
- 2023 Panelist at Offshore Technology Conference, Houston, TX
- 2023 Panelist at Alaska Sustainable Energy Conference, Anchorage AK
- 2022 Panelist at Alaska Sustainable Energy Conference MHK Workshop, Anchorage AK
- 2020 Presenter at Pacific Marine Energy Center All-Center, Portland OR
- 2018 Presenter at National Rural Electric Cooperative Association Conference, Anchorage, AK
- 2018 Presenter at Rural Energy Conference, Fairbanks, AK
- 2018 Panelist at North-by-North Conference, Anchorage, AK
- 2017 Presenter at Alaska Wood Energy Conference, Ketchikan, AK
- 2016 Rural Energy Conference, Fairbanks, AK
- 2016 Islanded Grid Wind Power Workshop, Fairbanks, AK

Research Highlights

- Principle Investigator on DOE WPTO ($9.5M) Galena River Energy Project [2024 – present]
- Principal Investigator on ARPA-E SHARKS ($4.5M) hydrokinetic turbine development [2021 – present]
- Task Lead on ERDC Secure and Resilient Power Generation in Cold Region Environments [2019 – 2023]
- Research Lead for DOE WPTO ($1.1M) Water Horse hydrokinetic riverine energy system [2019 – 2022]
- Passive Thermal Management of AC/AC convertor cells for DOE ARPA-E “Agile Delivery of Electrical Power Technology” program (6/2011-12/2012)
- Lead thermal engineer for technology development for smart-grid applications and integration of renewable power sources.
- Analytical modeling and optimization of advanced thermosiphon in Matlab, design for manufacturing and fabrication of three unique full scale systems. Instrumentation, control, and data collection using Labview and NI DAQ system.

Lou Yur'acung' Frenzl

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Fairbanks, AK 99709
(907) 460-9736
rfrenzl81@gmail.com

Objective

To serve as a parent representative on the Academic Policy Committee for the proposed FNSBSD 2025-2026 Pearl Creek Charter School, contributing my experience in community engagement, event coordination and advocacy.

Experience

AUGUST 2024 - PRESENT

Native Movement - *Community Engagement and Volunteer Coordinator for Fbks Queer Collective*

- Maintain communication with a diverse array of community members regarding FQC events, ensuring timely updates via our newsletter.
- Organize and execute family-friendly events, managing volunteers before, during and after events.
- Assist FQC Director with organizational outreach, meeting facilitation, and curriculum-development.

OCTOBER 2022-MAY 2024

College of Indigenous Studies, UAF - *Student Coordinator for Festival of Native Arts*

- Managed communication with Festival participants, including dance group leaders, vendors, volunteers, and staff.
- Coordinated administrative efforts, including issuing contracts, processing vendor payments, facilitating meetings, and organizing files.
- Directed public outreach through social media, radio, news channels, and print media.
- Supervised backstage operations, coordinated event production, and led volunteer teams.

Education

AUGUST 2022-DECEMBER 2023

College of Indigenous Studies, UAF - *Yup'ik Language Degree in Progress*

Studying my first language, Yugtun (Yup'ik) while balancing work and parenting.

Awards

Special recognition from the UAF Chancellor for outstanding contributions to the Festival of Native Arts.

Dawn A. Olund

1528 Scenic Loop
Fairbanks, AK 99709
907-378-1838
dawnslawns2020@gmail.com

OBJECTIVE

Passionate dedicated educator with a love of learning, seeking elementary teaching position. Enjoys teaching students of all ages both in the classroom and outside, with many different activities across all subjects.

EDUCATION & CERTIFICATION

Bachelor in Elementary Education, University of Alaska Fairbanks — Dec. 2002
- Grade Point Average: 3.59

State of Alaska Type A Certificate, Elementary Education GR K-8 — Jan. 2003
"Highly Qualified" status — Dec. 2004

SPECIAL TRAININGS

Kagan	Zoo-phonics Reading Curriculum	The Daily 5
The Café	Peace Games	Teaching with Love and Logic
RTI	Alaska Statewide Mentor Project	Anxiety Awareness
Leadership		

SKILLS

Reliable and motivated to accomplish tasks to the fullest
Effective and healthy communication skills
Punctual and always willing to help others
Excellent organizational and planning skills
Compassionate and patient
Team player and great listener
Macintosh and Windows (word, excel, power point, iphoto, imovie, lamp, google classroom, and document camera)

EXPERIENCE IN EDUCATION

Elementary Physical Education Teacher
Pearl Creek Elementary School Fairbanks, AK; FNSBSD — Aug. 2024 – Present

- Design and deliver safe engaging physical activity lessons
- Focus on developing fundamental movement skills
- Promote and educate healthy lifestyle activities, nutrition, and habits
- Foster a positive attitude towards exercise
- Consistent and effective classroom management
- Assess students' progress and adapt activities to meet individual needs
- Communicating with parents and staff about PE curriculum and student progress
- Organize and guide multiple classes for outdoor activities (snowshoeing, ice skating, skiing)
- Teach and model teamwork, sportsmanship, integrity, and character development
- Participation in NYO events
- Organize and promote American Heart Association fundraiser

Kindergarten, First Grade, & K/1 Teacher
Pearl Creek Elementary School Fairbanks, AK; FNSBSD — Aug. 2004 – May 2024

- Assess students periodically to monitor growth
- Organize and develop lesson plans appropriate for students' needs and meet state and FNSBSD standards
- Teach 18-27 kindergartners in all academics and guide their social and emotional development

- Communicate with parents/guardians of students through phone calls, conferences, e-mail, class webpage, and weekly newsletters
- Implement classroom management for guidance and encouragement
- Participate in 'Intervention' meetings; implement behavioral and academic interventions to promote student achievement
- Collaborate with grade level teachers in team teaching environment
- Attend staff meetings and participate in whole school goals
- Develop and organize all kindergarten field trips
- Organize and produce plays for students and parents
- Assure student safety at all times

Building Substitute
Hunter Elementary School Fairbanks, AK; FNSBSD Aug. 2003 – Aug. 2004

- Educate and guide students k-6 in music, gym, special education, and regular education classrooms
- Follow teacher lesson plans
- Meet staff, student, and parent expectations
- Communicate positively with staff and students
- Flexible and resourceful each day
- Proactive with school discipline

Coach
Hunter Elementary School Fairbanks, AK; FNSBSD Sept. 2002 – Nov. 2002
Sept. 2003 - Nov. 2003

- Motivate girls to play team basketball
- Organize A and B teams
- Communicate with players, parents, and teachers
- Educate players of basketball rules and sportsmanship
- Coordinate and schedule games with other schools
- Assess student safety while playing and traveling

Assistant Coach
West Valley Varsity/JV Softball & HCF 6U Hockey

- Work directly with various age groups
- Organize and implement practice drills
- Provide positive encouragement
- Educate players of rules and sportsmanship

AWARDS & ACHIEVEMENTS

Education Student of the Year, UAF 2002
Karen Lewandoski Sportsmanship Award, Fairbanks Women's Hockey 2010-2011

REFERENCES

Jenny Norton
907-750-2235
Jnorton18@yahoo.com

Anne Jackson
907-987-0072
upsguy@gci.net

Moira Westervelt
907-978-8739
moira.westervelt@k12northstar.org

Maggie Matheson
907-978-5012
Maggie.b.matheson@gmail.com

JENNIFER ANNE REDMOND

(907) 322-5639
jen.miller907@gmail.com

EMPLOYMENT

Alaska Communications, Fairbanks, Alaska
Grants Controller, Project Management Office Department July 2024- Present

- Overseeing and managing approximately $200M in telecommunication grants to ensure compliance and with Federal rules, regulations, laws and terms of agreements.
- Review and process all reimbursement requests to funders, ensuring reasonability, eligibility, and allocability of costs. Coordinate with project managers to forecast financial needs and provide insights for effective resource allocation.
- Assist in preparing grant proposals, budget justifications, and other financial documents required for grant applications and renewals.
- Develop and generate grant fiscal reports and analyses to support strategic decision-making and provide insights into project financial performance.
- Lead, develop, implement, and maintain ACS grant financial systems, software, and internal controls in coordination with ACS Controller and Finance to ensure compliance with grant requirements and scalability.
- Review and provide update requests to the ACS's SOX Policies and Procedures to ensure compliance with current and changing grant regulations, laws, policies, and guidelines as needed and for review and approval of ACS Finance.
- Collaborate with ACS Controller and Finance audit team in developing grant audit work plans and audit preparation per funder, partners, and external auditors.
- Support the ACS Controller and Finance audit team to execute required ACS Federal site visit audits, grant annual audits, grant Federal funder desk audits, and other grant-related audits per acceptable standards.

Alaska Native Tribal Health Consortium, Anchorage, Alaska
Lead Grants Management, Grants Management & Accounting Department July 2022- July 2024

- Responsible for organization-wide grant management and compliance processes and procedures to ensure compliance with State, Federal, and agreement laws, regulations, and terms.
- Authored the ANTHC grant post-award policies and procedures
- Implemented organization-wide software systems, Google Workspace, and SmartSheets for greater efficiency, transparency, and compliance per audit report corrective actions, resulting in significant increase in compliance and efficiency.
- Implemented corrective action regarding Single Audit findings by setting up internal controls, software, grant training, and a robust grant compliance infrastructure.
- Cultivated a productive working relationship between Grants Management, Grants Accounting, and Grants Planning and Development(GPDD) to ensure synergistic operations for grant administration throughout the grant lifecycle.
- Supervised, mentored, and trained subordinates on grant administration and technical knowledge and skills.
- Created and presented monthly to the CFO the ANTHC Grant Compliance Report on key performance indicators, which were used in Board of Directors reports.
- Provided organization-wide grant training for over 300+ ANTHC staff

Chugachmiut, Anchorage, Alaska
Grants Administrator (Manager), Grants Department May 2020- May 2022

- Annual strategic grants application plan completed in alignment with Chugachmiut's strategic planning processes to support known and emerging needs critical to achieving long-term goals.
- Management of Chugachmiut's grant & contract administration, proposal writing, project development, and compliance with all State, Federal, and agreement laws, regulations, and terms.
- Responsible for implementing and managing Chugachmiut's granting process, including the deployment of training and other duties that will enhance organizational efficiency and support a culture of continuous improvement, creation of value, and customer satisfaction.
- Provides technical support to the Alaska Tribal Health System on matters related to grant development and proposals.
- Development of funding sources for Chugachmiut and Tribal strategic plans
- Evaluate the capacity of Chugachmiut and Tribes in administering projects, funding, and other factors.
- Foster partnerships between Chugachmiut and Tribes and external experts and professionals to meet strategic goals or for project development and implementation.
- Acts as a primary point of contact regarding grant regulations and compliance between Chugachmiut and federal agencies, member Tribes, individual tribal members, other tribes, consortia, and other entities.

- Create and implement efficient processes and procedures through automation, streamlining, and training while keeping internal controls intact.
- Supervision and allocation of subordinate workload, completion of annual performance and procedures and providing for staff training and support on both grant technical issues.

University of Alaska Anchorage, Anchorage, Alaska
Assistant Director of Pre-Award, Office of Sponsored Programs (UAA OSP) July 2019- May 2020

- Administration and management of proposal development, review, and authorization of proposals submitted on behalf of the University of Alaska Anchorage to external funding agencies for project funding.
- Create and implement cost-saving processes and procedures due to State budget cuts through automation, streamlining, and training while keeping internal controls intact.
- Supervise and allocate subordinate workload, complete annual performance and procedures, and provide staff training and support on both grant technical issues.
- Directing organization-wide grant applications, reporting processes, and guardrails to ensure all grants awarded can achieve 100% compliance.
- Facilitating executive grant reporting, including KPI's on applications, awards, compliance, and other key metrics used to manage the department and grants program.
- Expert institutional resources by maintaining technical knowledge by attending workshops, maintaining a professional network of colleagues, and staying current with new policies, rules, regulations, and laws.
- Liaison between Principal Investigators/Project Directors of grants and contracts and sponsors.
- Professional communication and outreach to all stakeholders, including external sponsors
- Training of Grant Analysts, Grant Technicians, and Student Workers in OSP for Pre-Award related functions.
- Perform weekly and monthly outreach and training to UAA Staff and Faculty, proposal development, restricted funding compliance, and establishing good working relationships.
- Oversaw and created administrative functions in the Office of Sponsored Programs through coordination with multiple University of Alaska Offices across all three Universities from Procurement and Contract Services, Human Resources, Travel, Budget, and our sister grants and contracts offices at UAS and UAF.
- Built and implemented standard operating procedures and policies to achieve department goals of grant and contract compliance throughout the UA system that is streamlined, efficient, and cost-effective.
- Create data management of OSP Pre-Award activities for office functionality, core competencies, and executive-level management evaluation.
- Develop and implement process improvement for subaward weaknesses in internal controls to ensure compliance with Federal regulations.

University of Alaska Fairbanks, Fairbanks & Anchorage, Alaska
Fiscal Officer, Alaska INBRE Program UAF November 2015- June 2019

- Oversee and create reports for federal grant and state budget projecting and reporting using the UA accounting systems and excel across all three major institutions (UAF, UAA, UAS) to audit for compliance and advise INBRE leadership and stakeholders in their decision making.
- Lead, develop, and administer process improvement projects implementing policies and procedures that enhance effectiveness and increase efficiency and compliance of research administration at all campuses and partner institutions through streamlining opportunities in information technology, reducing the administrative burden
- Develop and execute training opportunities, and share best practices for research administration in both pre and post-award to build research capacities and a statewide research administration network across the UA system and the state of Alaska.
- Be an expert and point of contact for all matters related to research administration, apply GAAP/CAS/ and fund accounting principles, apply and interpret 2 CFR 200, BOR Policy, University Procedures, and relevant court decisions for the INBRE program and other statewide programs.
- Producing and retaining backup and audit documentation per Federal, State, and Institutional policies using technical writing, tick marks, and paper trails
- Creating and manipulating excel data tables for financial analysis of business operations
- Foster relationships throughout the State of Alaska to further Biomedical Research and develop opportunities for research and find solutions for growth and development
- Professionally communicate with University of Alaska leadership, National Institute of Health Grant Management external stakeholders in Alaska biomedical research
- Assures that all grant-related charges are properly reviewed for compliance with specific grant and general cost principle requirements and limitations.
- Responsible for accounting and reporting of compliance with grants, including but not limited to compliance with project budget allocations, compliance with both regulatory and grant-specific allowable cost restrictions, compliance with specific contractor/grantor requirements and compliance with applicable cost-sharing requirements.

Grant Fiscal Officer, Central Admin Office, UAF Provost Office April 2014- October 2015

- Financially administer over Multi-million dollar federal, state, and foundation-funded projects and programs through budget administration, financial projections, oversight over direct expenditures
- Oversee and audit of internal controls and expenditure documentation to reduce the risk of fraud or misuse of government, state, and foundation funds
- Assist 20+ PIs and directors read, interpreting, and applying legal language in proposals and awarded projects
- Conduct monthly meetings with directors and PIs that support the economic analysis of spending to help with understanding the spending patterns from year to year
- Created the business structure for administering the largest and most complex awards the UAF has received from the National Institute of Health totaling approximately $24 million over five years (BLaST program)
- Assured that all grant-related charges are properly reviewed for compliance with specific grant and general cost principle requirements and limitations.
- Responsible for accounting and reporting of compliance with grants, including but not limited to compliance with project budget allocations, compliance with both regulatory and grant-specific allowable cost restrictions, compliance with specific contractor/grantor requirements and compliance with applicable cost-sharing requirements.

Fiscal Tech. II/PPA, Central Admin Office, UAF Provost Office July 2012- March 2014

- Performed daily, weekly, and monthly financial and human resource transactions and reconciled
- Proficient understanding of procurement, human resources, and travel rules, policies, regulations, and processes to meet the office's high volume of customer services needs
- Assures that all grant-related charges are properly reviewed for compliance with specific grant and general cost principle requirements and limitations.

EDUCATION

Bachelor of Science Business, Accounting, May 2011
University of Idaho, Moscow, ID
Certified Research Administrator (CRA), December 2018
Society of Research Administrators International Certificate in Financial Management, March 2019

PROFESSIONAL AFFILIATIONS
Secretary, Western Section, Society of Research Administration 2022-2023
President, Alaska Chapter, Society of Research Administration, 2018 - 2020
Society of Research Administrators International Member, October 2017- Present

COMPUTER PROGRAM EXPERIENCE

- SmartSheets
- DocuSign
- Microsoft 365
- Canva
- Quickbooks
- Sharepoint
- OnBase
- JP Morgan
- University of Alaska Accounting & Data Systems: TOAD, QMenu, Banner
- Google Forms, Docs, Sheets, Slides, Data Studio, Sites, Analytics
- Adobe Acrobat Pro
- Excel, Windows XP, Powerpoint on Mac and Windows

VOLUNTEER EXPERIENCE

Board Member, Treasurer - Breadline Inc. 2020 - Today
Volunteer - Youth Soccer Coach 2016-2019
Mentor - Big Brothers Big Sisters of America 2007-2009

Katie V. Spellman

Email: katie.spellman@alaska.edu • Tel: (907) 474-1554

Website • ResearchGate

Education

2017	Post Doc Education and Outreach	International Arctic Research Center, University of Alaska Fairbanks
2015	Ph.D. Biological Sciences	Resilience and Adaptation Interdisciplinary Program, University of Alaska Fairbanks
2008	M.S. Biology	University of Alaska Fairbanks
2003	B.A. Biology (Magna Cum Laude)	Whitman College, Walla Walla, WA

Primary Research Interests

1. Citizen science, community science, and community based monitoring
2. Ecology of boreal and arctic non-native plant invasions
3. Impacts of environmental change on boreal and arctic plants, with focus on subsistence berry species
4. Education strategies for resilience of Alaska communities to climate change
5. Interdisciplinary approaches to ecology and education research

Professional Experience

May 2023 - present	**Research Associate Professor,** International Arctic Research Center, University of Alaska Fairbanks (UAF)
Aug 2018 – May 2023	**Research Assistant Professor,** International Arctic Research Center, University of Alaska Fairbanks (UAF)
March 2020 - Present	**Faculty Fellow,** Honors College, Climate Scholars Program, UAF
June 2017 – July 2018	**Research Associate**, International Arctic Research Center, UAF
Jan 2016 – May 2017	**Post-doctoral Research Fellow,** International Arctic Research Center, UAF
May 2015 – Nov 2016	**Research Professional**, Bonanza Creek Long Term Ecological Research Program, Citizen Science Program, UAF
Sept 2015 – Dec 2020	**Adjunct Instructor**, Resilience and Adaptation Interdisciplinary Program, UAF
Aug 2010 – May 2015	**Interdisciplinary Research Fellow,** Resilience and Adaptation Program and Institute of Arctic Biology, UAF

Jan 2012 - Feb 2012	**International Research Traineeship,** Bio-Protection Research Center, Lincoln University, Lincoln, New Zealand
Aug 2011- May 2012	**Science Teaching Fellow,** National Science Foundation gK-12 program, UAF
Oct 2008 – Aug 2010	**Program Director**, Center for Alaskan Coastal Studies, Homer, AK
Aug 2007 - Oct 2008	**Curriculum Developer,** Contractor through UAF
Jan 2007 - Aug 2008	**Research Assistant,** Institute of Arctic Biology, UAF
Jan 2006 - Dec 2006	**Science Teaching Fellow,** National Science Foundation gK-12 program, UAF
Fall 2005, 2007, July 2008	**Teaching Assistant,** Biol 104 Natural History of Alaska, Biol 105 Fund. of Biology, Department of Biology and Wildlife, UAF
Aug 2003 - Aug 2005	**Program staff**, Nativity House Homeless Shelter, Jesuit Volunteer Corps, Tacoma, WA
Summers 2002, 2003	**Field Technician,** Institute of Arctic Biology, UAF
Sept - Dec 2001	**Research Intern,** Forestry Association of Botswana, Gaborone, Botswana

Honors

2024 Usibelli Award for Teaching, Research and Public Service Awardee (UAF's highest award for faculty, selected for extraordinary public service)

2024 Association of Public Land Grant Universities C. Peter Magrath Exemplary project Award for Fresh Eyes on Ice (Recognizes programs that demonstrate how colleges and universities have redesigned their learning, discovery, and engagement missions to deepen their partnerships and achieve broader impacts in their communities)

2024 Invited Keynote Speaker for the Alaska Invasive Species Conference with Dr. Terry Chapin

2024 Invited Keynote Speaker for the GLOBE International Annual Meeting

2024 Invited Keynote Speaker for the 17th Annual Texas STEM Conference

2023 Associated Students of UAF Award for Outstanding Faculty and Staff - Faculty Member of the Year

2023 UAF Usibelli Award for Public Service Nominee

2023 UAF Robert Picenza Award for Excellence in Education Teacher of the Year Nominee

2022 National Academy of Sciences Kavli Fellow for outstanding research in the frontiers of science in the US.

2022 UAF Robert Picenza Award for Excellence in Education Teacher of the Year Nominee

2021 Invited Keynote Speaker for the Arctic Research Consortium of the United States Citizen and Community Science in the Far North Conference

2021 Western Alaska Interdisciplinary Science Conference Todd Radenbaugh Award for work that embodies the vision of WAISC: to promote science, innovation, and education in western Alaska

2020 University of Alaska Fairbanks Chancellor's Recognition for Excellence in Research and Creative Activity
2020 Invited Keynote Speaker Yukon Invasive Species Council Annual Meeting
2019 NASA Science Mission Directorate Science Activation "Puffin Award" for most outstanding science communication among the collective
2019 NASA Science Mission Directorate Science Activation Film festival "Best Picture Award" for our outreach film "Cryokids"
2019 University of Alaska Fairbanks Chancellor's Recognition for Excellence in Instruction and Outreach
2019 Nominee, Emma Walton Award for exemplary science educator in Alaska
2016 Arctic Research Consortium of the United States "Arctic in the Classroom" scientist
2015 Fairbanks Education Association Friend to Education Award
2011 Ecological Society of America Education Scholar Award
2011 Invited Keynote Speaker Invasive Species Council of British Columbia Annual Meeting
2008 Phi Delta Kappa Golden Apple Award for Outstanding Service to Education
2004 Krista Foundation for Global Citizenship Social Justice Volunteer Award
2003 Whitman College C. Lechner Most Outstanding Graduating Biology Student Award
2001 NCAA Div III First Team Academic All-American Nordic Skiing
1999 Whitman College Sherwood Leadership Award (Whitman's most prestigious scholarship)

Grants and Fellowships

2024 NASA SCoPE Seed Grant "Arctic and Earth SIGNs and Fresh Eyes on Ice - Media Production Empowering STEM and Citizen Science Participation in Arctic and Sub-Arctic Communities" (Co-PI, $10,000, with M. Scragg (PI), E. Sparrow and C. Arp)

2024 USGS Alaska Climate Adaptation Science Center "Building community-based monitoring partnerships between rural schools and wildlife refuges in Alaska: focus on freshwater ice, climate change, and beyond" (Co-PI, $499,055, with C. Arp (PI), K. Bodony of USFWS, M. Winfree of USFWS)

2024 Native Village of Pilot Point "Vegetation mixtures for reducing coastal erosion" (Contract PI, $68,000 with C. Mulder and C. Maio)

2023 NASA "UNBOUND for Food, Water, and Energy in Tribal Communities"- augmentation to award 80NSSC21K0858 (PI, $99,983, with E. Sousa, H. Buurman of UAF, S. Bostwick of Northwest Indian College)

2023 NSF Planning "FIRE-PLAN: Social-Ecological Engineering and Design of Sustainable (SEEDS) Boreal Forest Fuel Breaks" (Co-PI, $199,865, with J. Johnstone and M. Mack)

2023 UAF office of Undergraduate Research & Scholarly Activity (URSA) “Supplies Award for Climate Scholars Undergraduate Climate Research Intensive” (PI, $3,059)

2023 NSF NNA Collaboratory: ACTION - Alaska Coastal Cooperative for Co-producing Transformative Ideas and Opportunities in the North (Co-PI, $9,549,309 UAF portion, with C. Maio (PI), M. Balazs, T. Schwoer, C. Ferguson of UAF, S. BurnSilver of ASU, A. Petrov of UNI, C. Tweedie of UTEP and many others)

2022 NASA ROSES Citizen Science for Earth Systems Program, “Community Eyes on River Ice - Broadening Participation in Freshwater Ice Observation - Full Implementation” (PI, $1,242,377, with C. Arp, E. Sparrow, B. Woods, D. Brown)

2022 NASA Science Mission Directorate Science Activation, “Augmentation to 2.0 Arctic and Earth STEM Integrating GLOBE and NASA Assets” (CoPI, $642,041, with E. Sparrow, M. Chase)

2022 NSF DEB “LTER:Changing Disturbances, Ecological Legacies, and the Future of the Alaskan Boreal Forest”(Sen. Pers., $7,650,000 total, PI M. Mack of NAU, $166,022 direct support for my work)

2022 GeoData Cooperative, “Geospatial data literacy and workforce development for Alaska K12 and beyond” (IARC PI, $130,000, with H. Buurman, E. Sparrow)

2022 USDA Forest Service Pacific Northwest Research Station, “Invasive Plants and Wildfire in Boreal Forests of Alaska: State of Science Project”(PI, $112,736)

2022 NSF Geomorphology and Land-use Dynamics Program “Collaborative Research: Sediment fluxes in boreal rivers: determining relative seasonal loads and expanding long-term monitoring capability” (CoPI, $460,237 total, $149,816 UAF Portion with E. Eidam & T. Pavelsky of UNC, C. Arp of UAF)

2022 NSF CAS Climate “Collaborative Research: The Hydrologic Connection between Permafrost-Plateaus and Thaw-Bogs: Impact on Methane Emissions” (CoPI, $637,679 total, $58,421 UAF Portion, with R. Neumann of UW, C. Mulder of UAF)

2021 NSF Navigating the New Arctic National Research Traineeship “Convergent Arctic Research Perspectives and Education” (Contract PI, $131,327 UAF Contract Portion, total $3,299,651, PI R. Varner of UNH)

2021 NASA ROSES Citizen Science for Earth Systems Program, “Community Eyes on River Ice - Broadening Participation in Freshwater Ice Observation to Support Hydrologic Research, River Forecasting, and Winter Travel Safety - Pilot Project” (PI, $293,362 for 18-month pilot, with C. Arp, E. Sparrow, B. Woods, D. Brown)

2020 NSF Navigating the New Arctic Community Office, “NNA-CO: A Community Office for Coordination, Partnership, and Capacity-Building to Support Crucial and Societally-Relevant Arctic Research” (Sen Pers. with PI M. Druckenmiller of UCBoulder, $4,972,677 total, $398,650 UAF portion (CoPI)

2020 USGS Alaska Climate Adaptation Science Center, “Alaska’s Berry Future: Planning for Changing Resources in an Altered Climate” (CoPI, $199,648, with C. Mulder, M. Chase, M. Muscarella et al.)

2020 NASA Science Mission Directorate Science Activation, “2.0 Arctic and Earth STEM Integrating GLOBE and NASA Assets, renewal” (CoPI, $3,400,000, with E. Sparrow, M. Chase, G. Kahoe, J. Fochesatto, K. Yoshikawa, et al.)

2020 NSF Collaborative Research: LTREB “Long-term changes in peatland C fluxes and the interactive role of altered hydrology, vegetation, and redox supply in a changing climate” (Sen. Pers. with PIs E. Kane of Michigan Tech and S.E. Euskirchen of UAF, $367,023 total, $76,316 UAF portion)

2020 Alaska EPSCoR Diversity, Education and Workforce Development Seed Grant “Fostering Science: Expanding Access to Science Camp to Youth in Care of the State” (PI, $15,365, with C. Mulder and T. Hollingsworth)

2018 NSF Arctic Observing Network, “NNA: Fresh Eyes on Ice: Connecting Arctic Communities through a Revitalized and Modernized Freshwater Ice Observation Network” (Co-PI, $2,627,872, with C. Arp, D. Brown, L. Oxtoby)

2017 NSF Advancing Informal Science Learning, “Arctic Harvest- Public Participation in Scientific Research” and Winterberry Citizen Science (PI, $878,592, with C. Mulder and E. Sparrow)

2017 NSF Population and Community Ecology Program, “Collaborative Research: Can variation in flower development explain variation in phenological responses to temperature?” (Sen. Pers., $192,694 total, $108,963 UAF portion with C. Mulder and P. Diggle of UConn)

2015 NASA Science Mission Directorate Science Activation, “Arctic and Earth STEM Integrating GLOBE and NASA Assets” (Co-I, $3,400,000, with E. Sparrow, C. Fabbri, K. Yoshikawa, D. Verbyla et al.)

2014 NSF IGERT Fellowship-Resilience and Adaptation Program ($30,000)

2011 NSF GK12 Fellowship-Changing Alaska Science Education ($30,000)

2010 NSF IGERT Fellowship-Resilience and Adaptation Program ($30,000)

2010 Student Travel Grants- UAF Graduate School ($1100)

2009 U.S. Forest Service Invasive Plants Program Grant (CoPI, $40,000)

2007 Melinda Grey Ardia Environmental Education Foundation Grant (CoPI, $1000)

2007 Center for Global Change Science Outreach Grant (PI, $5000)

2007 Salcha-Delta Soil and Water Conservation District Noxious Weed Outreach Grant (PI, $4000)

2007 Student Travel Grant- College of Natural Science & Mathematics ($1100)

2006 Center for Global Change and Arctic Systems Research Grant (PI, $4500)

2006 Center for Invasive Plant Management Seed Money Grant ($5000, with C. Mulder and T. Hollingsworth)
2006 NSF GK-12 Fellowship-Teaching Alaskans, Sharing Knowledge ($30,000)
2006 Arctic Audubon Society Research Grant Recipient ($1000)
2002 Garden Club of America Award for Summer Field Studies ($2000)
2002 Whitman College Parents Association Summer Research Internship Award ($3000)

Publications

PEER-REVIEWED JOURNAL ARTICLES

29. Christian, J.E., R.M. Buzard, **K.V. Spellman**, H.L Baldwin, R. Bogardus, J. Carlson, G. Dunham , S. Flensburg, R.J.T. Glenn, J.R. Overbeck, C.V. Maio. 2024. Community-based monitoring: shoreline change in Southwest Alaska. *Frontiers in Climate* 6:1410329. doi: 10.3389/fclim.2024.1410329

28. Jennings L., K. Jones, R. Taitingfong, A. Martinez, D. David-Chavez, R. Alegado, A. Tofighi-Niaki, J. Maldonado, B. Thomas, D. Dye, J. Weber, **K.V. Spellman**, S. Ketchum, R. Duerr, N. Johnson, J. Balch, S.R. Carroll. 2025. Governance of Indigenous Data in Open Earth Systems Science. *Nature Communications* 16:572. https://doi.org/10.1038/s41467-024-53480-2

27. Arp, C.D., A. Bondurant, S. Clement, E. Eidam, T. Langhorst, T. Pavelsky, J. Davis, **K.V. Spellman.** 2024. Observation of high sediment concentrations entrained in jumble river ice. *River Research and Applications*, 1–11. https://doi.org/10.1002/rra.4309

26. Abdelkader, M., J. Bravo, M. Temimi, D.R.N. Brown, **K.V. Spellman**, C.D. Arp, A. Bondurant, H. Kohl. 2024. A Google Earth Engine platform to integrate multi-satellite and citizen science data for the monitoring of river ice dynamics. *Remote Sensing* 16(8):1368. https://doi.org/10.3390/rs16081368

25. Clement, S., **K.V. Spellman**, E. Eidam, T. Langhorst, C.D. Arp, J. Davis, T. Pavelsky, A. Bondurant (2024). How do you sample a frozen river? Increasing K–12 STEM engagement through real-world problem solving and scientific research. *Connected Science Learning* 6(2):66-76. https://doi.org/10.1080/24758779.2024.2328225

24. Engram, M., F.J. Meyer, D.R.N. Brown, S. Clement, A. Bondurant, **K.V. Spellman,** L. Oxtoby, & C.D. Arp. 2024. Detecting early winter open-water zones on Alaska rivers using dual-polarized C-band Sentinel-1 synthetic aperture radar (SAR). *Remote Sensing of Environment.* doi: 10.1016/j.rse.2024.114096. link

23. Hamilton, C. W., E. A.H. Smithwick, **K.V. Spellman**, A.P. Baltensperger, B.T. Spellman, G. Chi. 2024. Predicting the suitable habitat distribution of berry plants under climate change. *Landscape Ecology* 39:18. doi: 10.1007/s10980-024-01839-7. link

22. Brown, D.R.N., C.D. Arp, T.J. Brinkman, B.A. Cellarius, M. Engram, M. E. Miller, **K.V. Spellman.** 2023. Using satellite imagery to detect the changing seasonality of river ice. *Alaska Park Science* 22(1): 80-89. link

21. Langhorst, T., T. Pavelsky, E. Eidam, L. Cooper, J. Davis, **K.V. Spellman,** S. Clement, C.D. Arp, A. Bondurant, E. Friedman, & C. Gleason. 2023. Increased scale and accessibility of sediment transport research in rivers through practical, open-source turbidity and depth sensors. *Nature Water*. doi: 10.1038/s44221-023-00124-2

20. Brown, D.R.N., C.D. Arp, T.J. Brinkman, M. Engram, B.A. Cellarius, M.E. Miller & **K.V. Spellman.** 2023. Long-term change and geospatial patterns of river ice cover and navigability in southcentral Alaska detected with remote sensing. *Arctic, Antarctic, and Alpine Research* 55 (1):2241279. doi: 10.1080/15230430.2023.2241279

19. Clement S., **K.V. Spellman**, L. Oxtoby, K. Kealy, K. Bodony, E.B. Sparrow, C. Arp. 2023. Redistributing Power in Community and Citizen Science: Effects on Youth Science Self-Efficacy and Interest. *Sustainability* 15(11):8876. doi: 10.3390/su15118876

18. Santangelo, J.S., R.W. Ness, B. Cohan, C.R. Fitzpatrick, S.G. Innes, [...] C. Ornelas, **K.V. Spellman**, [...] M.J. Johnson. 2022. Global urban environmental change drives adaptation in white clover. *Science* 375(6586):1275-1281. doi: 10.1126/science.abk0989

17. Mulder, C.P.H., **K.V. Spellman,** J.D. Shaw. 2021. Berries in winter: a natural history of fruit retention in four species across Alaska. *Madrono* 64(4):487-510. doi: 10.3120/0024-9637-68.4.487

16. **Spellman, K.V.**, D. Cost, C.P. Villano. 2021. Connecting community and citizen science to stewardship action through scenarios storytelling. *Frontiers in Ecology and Evolution,* 9:695534. doi: 10.3389/fevo.2021.695534

15. Schwoerer, T., **K.V. Spellman,** T. Davis, O.A. Lee, A. Martin, C.P.H. Mulder, N. Swenson, A. Taylor, G. Winter. 2021. Harnessing the power of community science to address data gaps in the changing North: Arctic invasive species as case examples. *Arctic* 75 (1):1-14. doi: 10.14430/arctic73773

14. Eicken, H., F. Danielsen, J.-M. Sam, M. Fidel, N. Johnson, M. K. Poulsen, O. A. Lee, **K.V. Spellman,** L. Iversen, P. Pulsifer, M. Enghoff. 2021. Connecting top-down and bottom-up approaches in environmental observing. *BioScience* 71(5): 467-483. 10.1093/biosci/biab018

13. Wasowicz P., S. Alexander, K. Westergaard, **K. V. Spellman**, M. L. Carlson, B. Bennett, J. Saarela, S. Seefeldt, L. Gillespie, C. Bay, S. Ickert-Bond, H. Vare. 2020. Non-native vascular plants in the Arctic - diversity, characteristics and biogeography. *Ambio* 49(3): 693–703 https://doi.org/10.1007/s13280-019-01296-6.

12. Spellman, K.V., J.D. Shaw, C.P. Villano, C.P.H. Mulder, E.B. Sparrow, and D. Cost. 2019. Citizen science across ages, cultures, and learning environments in Alaska. *Rural Connections* 13(1): 25-28. [PDF]

11. Mulder, C. P., and **K. V. Spellman. 2019.** Do longer growth seasons give introduced plants an advantage over native plants in Alaska's boreal forest understory? *Botany* 97: 347–362. DOI: 10.1139/cjb-2018-0209.

10. Duffy, L.K., L. De Wilde, **K.V. Spellman,** K.L. Dunlap, D. Bonita, S. McCullough, B. Luick, M. van Muelken. 2018. Resilience and adaptation: Yukon River watershed contaminant risk indicators. *Scientifica* 2018 (ID 8421513):1-12.

9. Spellman, K.V., E.B. Sparrow, M.J. Chase, A. Larson, K. Kealy. 2018. Connected climate change learning through citizen science: an assessment of priorities and needs of formal and informal educators and community members in Alaska. *Connected Science Learning* 1(6): 1-24.

8. Spellman, K.V., C.P.H. Mulder, and M.L. Carlson. 2016. Effects of invasive plant patch size and distance on the pollination and reproduction of native boreal plants. *Botany* 94: 1151–1160.

7. Spellman, K.V., C.P.H. Mulder. 2016. Validating herbarium-based phenology models using citizen science data. *BioScience.* 66(10):897-906.

6. **Spellman, K.V.,** A. Deutsch, C.P.H. Mulder, and L.D. Carsten-Conner. 2016. Metacognitive learning in the ecology classroom: a tool for preparing problem solvers in a time of rapid change? Ecosphere 7(8):e01411.10.1002/ecs2.1411. [PDF]

5. Spellman, K.V., L.C. Schneller, C.P.H. Mulder, M.L. Carlson. 2015. Effects of non-native *Melilotus albus* on pollination and reproduction in two boreal shrubs. *Oecologia* 179:495-507. DOI: 10.1007/s00442-015-3364-9

4. Spellman, K.V. 2015. Educating for resilience in the North: Building a toolbox for teachers. *Ecology and Society* 20(1):46.

3. Bestelmeyer, S.V., M.M. Elser, **K.V. Spellman**, E.B. Sparrow, S.S. Haan-Amato, A. Keener. 2015. Collaboration, interdisciplinary thinking, and communication: new approaches to K-12 ecology education. *Frontiers in Ecology and the Environment* 13: 37–43.

2. Spellman, K.V., C. P. H. Mulder, and T. N. Hollingsworth. 2014. Susceptibility of burned black spruce (*Picea mariana*) forests to non-native plant invasions in interior Alaska. *Biological Invasions* 16:1879-1895 [PDF]

1. **Spellman, K.V.** and C.P. Villano. 2011. Early primary invasion scientists: first graders engage in real research to help battle invasive plants. *Science and Children* 7(1):27-31. [PDF]

JOURNAL ARTICLES IN REVIEW

Link, N.T., J.F. Johnstone, X.J. Walker, F. Amundsen, H.K. Berrios, L. Bibeau, D. Cooley, A.C. Erickson, C. Johnson. J.M. Little, N. Lojewski, D. Cooley. A.C. Erickson, C. Johnston, J.M. Little, N. Lojewski, C.A. Phillips, D.C. Rees, L.B. Saperstein, E.E. Sousa, **K.V. Spellman**, A. Spring, M.C. Mack. Co-Benefits for Fuel Breaks in the Boreal Forest of Western North America. *One Earth*, In Review.

THESES

Spellman, K.V. 2015. Invasive plants and pollination of Alaskan berry species: integrating ecology and education. Doctoral Dissertation. University of Alaska, Fairbanks, AK. [PDF]

Villano, K. L., 2008. Wildfire burn susceptibility to non-native plant invasions in black spruce forests of interior Alaska. Master's Thesis. University of Alaska, Fairbanks, AK. [PDF]

Villano, K. L. 2003. Effects of airboat disturbance on vegetation and permafrost in the Tanana Flats floating mat fens, Alaska. Honors Thesis. Whitman College, Walla Walla, WA.

BOOKS

Lisuzzo, N., T. Wurtz, E. Napoleon, G. Smith, W. Charles, L. Mackey, R. Paddock III, **K.V. Spellman,** B.T. Spellman, J. Robinnette, D. Cannon, J. Hamilton, S. Ebbert, L. Lerum, J. Heys, L. Shaw, T. Davis, M. Lamb, S. Trimble, S. Swenson. 2011. KELLUTELLRA ALASKA-M UNGALAQLIRNERA ENIARITULINUN ITRALLERKAANENG KASS'AT YUP'IIT-LLU QANERYARAITGUN / Protecting Southwestern Alaska from invasive species: a guide in the English and Yup'ik languages. USDA Forest Service Alaska Region, Fairbanks, AK, and Center for Alaskan Coastal Studies, Homer, AK.

Villano, K. L., and C. P. Villano. 2008. Weed Wackers: K-6 educators guide to invasive plants of Alaska. Alaska Committee for Noxious and Invasive Plant Management. Fairbanks, AK. 256 pp. [PDF]

TECHNICAL REPORTS

14. Sousa, E., **K.V. Spellman**, H. Buurman, M.J. Chase, K. Heeringa, M. Pittas, S. Bostwick, E.B. Sparrow, G. Guala, R. Atti, M. Banner, S. Brown, J. Carl, S. Dowty, B. Gray, T. Holley, S. Holley, I. Johnson, L. Martin, R. Mathew, C. Merrick, B. Metteba, T. Rutherford-Gobert, A. Vidal Meza. (2024) *UNBOUND for Food Energy and Water in Tribal Communities - Outcomes and Recommendations Report.* Prepared for NASA Earth Science Data Systems UNBOUND Program. University of Alaska Fairbanks International Arctic Research Center, Fairbanks, Alaska. doi: https://doi.org/10.22541/essoar.173193367.77531725/v1 [link]

13. Parkinson, L.V., C.P.H. Mulder, M. Putman, and **K.V. Spellman.** (2024). Salmonberry in a Changing Climate: Threats and Opportunities. Berries in Alaska's Changing Environment Series: *Rubus spectabilis*. Institute of Arctic Biology and International Arctic Research Center, University of Alaska Fairbanks, Fairbanks, Alaska, USA.

12. Parkinson, L.V., C.P.H. Mulder, M. Putman, A. Ruggles, E. Sousa, and **K.V. Spellman.** (2024). Crowberry in a Changing Climate: Threats and Opportunities. Berries in Alaska's Changing Environment Series: *Empetrum nigrum*. Institute of Arctic Biology and International Arctic Research Center, University of Alaska Fairbanks, Fairbanks, Alaska, USA.

11. Seitz, T.J., **K.V. Spellman**, C.P.H. Mulder. (2024). Wildfire and invasive plants in Alaska's boreal forest – state of the science report. University of Alaska Fairbanks International Arctic Research Center and Institute of Arctic Biology. Fairbanks, Alaska. 30 pp. [link]

10. Parkinson, L.V., C.P.H. Mulder, K. Schroder, L. Bird, M. Putman, H. Foss, E. Sousa, and **K.V. Spellman.** (2024). Lowbush Cranberry in a Changing Climate: Threats and Opportunities. Berries in Alaska's Changing Environment Series: *Vaccinium vitis-idaea*. Institute of Arctic Biology and International Arctic Research Center, University of Alaska Fairbanks, Fairbanks, Alaska, USA.

9. Mulder, C.P.H., L. Weingartner, L.V. Parkinson, L. Bird, M. Putman, E. Sousa, P. Diggle, **K.V. Spellman**, and A. Smyth. (2023). Bog Blueberry in a Changing Climate: Threats and Opportunities. Berries in Alaska's Changing Environment Series: *Vaccinium uliginosum*. Institute of Arctic Biology and International Arctic Research Center, University of Alaska Fairbanks, Fairbanks, Alaska, USA.

8. Mulder, C.P.H., L.V. Parkinson, K. Schroder, H. Foss, M. Putman, **K.V. Spellman**, A. Ruggles, and P. K. Diggle. (2023). Cloudberry in a Changing Climate: Threats and Opportunities. Berries in Alaska's Changing Environment Series: *Rubus chamaemorus.* Institute of Arctic Biology and International Arctic Research Center, University of Alaska Fairbanks, Fairbanks, Alaska, USA.

7. Sigman, M., J. Warburton, **K.V. Spellman**, P. Carlson, E. B. Sparrow, E. Filardi M. Dibert, K.S. Ericson, Q.T. Judkins, D. HIrshberg, A. Lunda, T. Kushin, M. Mahoney, P. Morris, S. Storms, B. Trowbridge, A. Wills. (2019) Report of the Working Group on Culturally Responsive Science Outreach and Engagement. Report to the North Pacific Research Board, Alaska Sea Grant, and ARCUS, Anchorage, AK. [PDF]

6. Danielsen, F., M. Fidel, N. Johnson, M.K. Poulsen, H. Eicken, A. Alba, S.G. Hansen, L. Iversen, M. Enghoff, O. Lee, P.L. Pulsifer, P. Thorne, N. Levermann, R. Sulyandziga, **K. Spellman** and N. Vronski. 2018. Survey of existing community-based monitoring programmes in the Arctic: Capabilities, good practice and challenges. Report prepared for Integrated Arctic Observation System (INTAROS), European Commission Horizon 2020 program. 31 January 2018. [PDF]

5. Spellman, K.V., E.B. Sparrow, A. Larson. 2016. Needs assessment of target audiences for the Arctic and Earth SIGNs project. NASA Science Mission Directorate STEM education Activation Program, Washington DC.

4. Sigman, M., C. Behé, R. Dublin, G. Beaujean, C. Kaynor, H. McCann, L. Morrow, R. Sparks, **K.V. Spellman**, B. Trowbridge, E. Tyler. 2015. Community-based monitoring of Alaska's coastal and ocean environment: Best practices for linking Alaska citizens with science. Alaska Sea Grant, Anchorage, AK. [PDF]

3. Spellman, K.V., and Swenson, N. Y. 2012. Assessing the vulnerability of Western Alaska ecosystems and subsistence resources to nonnative plant invasion. Technical Report for Western Alaska Landscape Conservation Cooperative project number F11AC00570. DOI: http://dx.doi.org/10.13140/RG.2.2.31556.37763

2. Spellman, K.V. 2010. Invasive plants education in Alaskan schools. Forest Health Conditions in Alaska - 2009. United States Department of Agriculture, Forest Service Alaska Region R10-PR-21. April 2010. p.57-58. [PDF]

1. Villano, K. L., and C. P. H. Mulder. 2008. Invasive plant spread in burned lands of interior Alaska. Final report for National Park Service—Alaska Region and National Aeronautics and Space Administration. Fairbanks, AK. 25 pp. [PDF]

PEER-REVIEWED ESSAYS

Villano, K. 2004. I am these people: finding God and community in the streets. *The Global Citizen* 2(8).

Villano, K. 2006. Creating change in a changing climate. *The Global Citizen* 3(7).

Other Written Products

York, A., M. Gillespie, M. DeLue, K.V. Spellman. (2024) Let's bring wildfire education into the classroom. Alaska Beacon, 10 Sept 2024. Commentary. [LINK]

Eidam, E., C.D. Arp, J. Davis, A. Bondurant, S. Clement, L.M. Cooper, T. Langhorst, T.M. Pavelsky, K.V Spellman (2023). Sediment, Ice, and Learning on the Tanana (SILT) River. *Witness the Arctic Community HIghlights,* April 2023 Issue [LINK]

Arp, C., **K.V. Spellman**, L. Oxtoby, D. Brown (2021) Observing the Cycle of Ice through Fresh Eyes. *Witness the Arctic Community Highlights,* April 2021 Issue [LINK]

Spellman, K.V., L. Oxtoby, C. Arp, D. Brown (2021) Broadening participation in freshwater ice science and education with Fresh Eyes on Ice. *Witness the Arctic Community HIghlights,* April 2021 Issue [LINK]

Mulder, C.P.H., **K.V. Spellman**, E.B. Sparrow (2020) Winterberry: understanding the dynamics of fleshy fruit loss in fall and winter. *Witness the Arctic* 24(2): 27-31. [LINK]

Selected invited presentations and seminars

Chapin, FS III and **Spellman, K.V.** 2024. ***CONFERENCE KEYNOTE:*** How Do We Manage for Conservation When We Don't Know How Alaska Will Change? Alaska Invasive Species Workshop. Fairbanks, AK. November 13, 2024.

Spellman, K.V. 2024. ***CONFERENCE KEYNOTE:*** GLOBE Year of Climate and Carbon - Past, Present and Future of GLOBE Climate Change Research and Action. GLOBE International Annual Meeting. Fredonia, NY. July 18, 2024 https://www.youtube.com/watch?v=KZy5pbxV0qY

Spellman, K.V. 2024. ***CONFERENCE KEYNOTE:*** Turning Citizen Science Data into Youth Climate Action during the GLOBE Year of Climate and Carbon. 17th Annual Texas STEM Conference. Virtual: Texas STEM Coalition, March 2, 2024

Spellman, K.V. 2022. Fresh Eyes on Ice: Using Citizen Science to advance UN Sustainable Development Goals. Generation Connect Global Youth Summit. Kigali, Rwanda and virtual: United Nations, International Telecommunication Union. [Invited]

Spellman, K.V. 2022. Citizen and community science for climate resilience education- linking program design and outcomes in diverse learning environments. American Geophysical Union Fall Meeting 2022, San Francisco, CA. [Invited]

Spellman, K.V. 2021. ***CONFERENCE KEYNOTE:*** Alaska Berry Citizen and Community Science - A Decade of Science, Learning, and Navigating the Program Design Tradeoffs Between the Two. Community and Citizen Science in the Far North. Virtual: Arctic Research Consortium of the US.

Spellman, K.V. 2021. Fire and Invasive Plants in Alaska's Boreal Forest. 9th International Fire Ecology and Management Congress. Virtual: Association for Fire Ecology.

Spellman, K.V., Mulder, C., & Chase, M. 2020. Alaska's Berries in a Changing Climate: What do we know and what do we need to know? Alaska Tribal Conference on Environmental Management. Virtual: Alaska Native Tribal Health Consortium.

Spellman, K.V. 2019. Alaska's Berries and their Changing Seasons. Invited public lecture for Discover Alaska Series, UAF Summer Sessions, July 2019. Fairbanks, AK [link to recording]

Spellman, K.V. 2018. Citizen science, diversity, and social-ecological resilience: improving access and outcomes by design. Invited Seminar for Life Sciences Seminar Series, UAF Department of Biology and Wildlife, Jan. 2018. Fairbanks, AK. [link to recording]

Spellman, K.V. 2017. Early Career perspective for AGU Union Panel- Linking research, Education, and Public Engagement in Geoscience: Leadership and Strategic Partnerships. Invited panelist with C. McEntee (American Geophysical Union), S.C. Moosavi (Geological Society of America), C.E. Laj (Ecole Normale Supérieure Paris), L.H. Chambers (NASA Langley

Research Center), P. Harcourt (University of Maryland). AGU Fall Meeting, Dec. 2017. New Orleans, LA.

Spellman, K.V. and M. Sigman. 2017. Engaging students in community-based efforts, STEM learning, and community resilience. NOAA Climate Stewards Education Program workshop, July 2017. Fairbanks, AK.

Spellman, K.V. 2011. ***CONFERENCE KEYNOTE:*** Wildfire and Invasive Plant Spread. Invasive Species Council of British Columbia Annual Meeting, Nov, 2011, Richmond, BC [link to recording]

Student Supervision

Graduate Advisor:

- **Sarah Clement** (PhD Natural Resources and Sustainability, 2020-2025)
- **Kate Schaberg** (MS Natural Resources Management, 2021-2022)
- **Natalie Detwiler** (MS Biology, 2024-present)

Graduate student committee:

- **Ethan Overton** (MS Biology, 2024-present)
- **Jessica Christian** (MS Geoscience, 2021-2023)
- **Kara Kornhauser** (MS Biology, 2019-2022)
- **Allison Wylde** (MEd Elementary Ed, 2018-2020)
- **Samuel Adams** (MS Natural Resources Management, 2019-2020)
- **Lindsey Parkinson** (MS Biology, 2017-2019)

Interdisciplinary Studies student committee:

- **Tori Shoemaker** (BA Environmental Change and Society 2022-2024)
- **Edith Mari** (BA Environmental Sustainability and Indigenous Perspectives 2021-2022)
- **Mike Willis** (BS Environmental Studies, 2020-2021)

Research Experience for Undergraduates (REU) Mentor:

- **Ezekial Adams** (UAF Climate Scholars, URSA Research Award, Spring 2025)
- **Soka Vanegas-Farrara** (UAF Climate Scholars, Bonanza Creek LTER NSF REU and URSA Research Award, Summer 2024)
- **Jessie Skalisky** (UAF Climate Scholars, Summer 2023; URSA Research Award, Fall 2023 - Spring 2024)
- **Katherine Le Blanc** (UAF Climate Scholars, Summer 2023)
- **Caroline Brose** (Colorado College, Summers 2019 & 2020)
- **Cristina Ornelas** (Santa Ana College, Bonanza Creek LTER NSF REU, Summer 2019)

- **Bobbi Bevaqua** (Western Washington University, Summer 2018)

Teaching

Undergraduate Courses Taught

- **HONR/NRM F125 Our Changing Climate: Past, Present, Future**, 3 credits - Primary Instructor with K. Timm (Spring 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024, Spring 2025) I have taught this in 3 formats: in-person, online synchronous, and online asynchronous
- **HONR F291 Indigenous Knowledge in Climate Research Intensive,** 2 credits - Primary Instructor (Winter 2025)
- **HONR F293 Data to Action: data literacy and environmental monitoring for climate planning and action,** 2 credits, Primary Instructor (Spring 2023)
- **HONR F294 Summer Climate Research Intensive**, 2 credits - Primary Instructor (Summer 2021, 2022, 2023, 2024, 2025)
- **Santa Ana College MESA Intensive Field Course** – Primary instructor, UAF host institution for Santa Ana College course (Aug 2016, 2017, 2018, 2019)
- **BIOL 104 Natural History of Alaska**, 4 credits – Teaching assistant and lab instructor (Fall 2005, 2008)
- **BIOL 105 Fundamentals of Biology**, 4 credits - Teaching assistant and lab instructor (Summer 2008)

Graduate Courses Taught:

- **BIOL 616 Ecological Background for Resilience and Adaptation**, 1 credit- UAF Main Campus (Spring 2012, Fall 2015, Fall 2016, Fall 2018)
- **BIOL/ANTH/NRM 667 Resilience and Adaptation Seminar**, 1 credit- UAF Main Campus (Fall 2015)
- **NRM 668 Interdisciplinary Research Methods Seminar**, 1 credit- UAF Main Campus (Spring 2016, 2017, 2018, 2019)
- **LAS692 Application of Resilience Theory to Workforce Opportunities**, 1 credit- UAF Main Campus (Spring 2016)

Professional Development Courses Taught

- **NRM 593 Climate Change and Water in My Community,** 3 credits - year long course (2024)
- **NRM 593 Climate Change and Food Security in My Community,** 3 credits - year long course (2023)
- **ED 593 Data to Action: data literacy and environmental monitoring in your community,** 3 credits - year long course (2022-23)
- **ED 593 Designing Ice Science Inquiry with Youth in the Classroom,** 3 credits - year long course (2021-22)
- **ED 593 Observing Ice through Community and Youth Engaged Environmental Monitoring,** 3 credits - year long course (2020-21)

- **NRM/ED 595 Climate Change and My Community**, 3 credits – UAF Summer Sessions (2016, 2017, 2018, 2019)- Year-long course
- **ED 582 Invasive Plants of Alaska for Educators**, 1 credit- UAA-Kachemak Bay Campus (March 2010), **ED 581** UAA-College of Education Professional and Continuing Education Program (June 2010, Oct. 2010, Oct. 2011); **ED 595** UAF Summer Sessions (July 2010, July 2011, July 2012, July 2013)
- **ENVI 193 Invasive Plants of Alaska for Land Managers**, 1 credit- UAF-Bristol Bay Campus (March 2011)
- **ED 581 Alaska's Changing Forests**, 1 credit – UAA-Anchorage Summer Teacher Academy (May 2017)
- **ED 582 Coastal Environments of Kachemak Bay**, 2 credits - UAA-Kachemak Bay Campus (June 2009)

Service

K-12 Schools Scientist in residence

- **John Fredson School,** scientist teaching partner, T. Mynatt K-2 class, Venetie, AK (2-3 three-day long trips each year plus zoom sessions, >50 hours teaching time per year, Oct 2016 – 2023)
- **Denali Elementary School,** scientist in residence, D. Martin-Muth, C. Villano, P. Tellup 1st grade classrooms, Fairbanks, AK (20 hrs per week, Aug 2007 - May 2008, Aug 2015 - May 2016)
- **Joy Elementary School,** scientist in residence, M. Hinzman 2nd grade classroom, Fairbanks, AK (20 hrs per week, Jan 2006 - Dec 2006)
- **North Pole Middle School,** scientist in residence, A. Deutsch 7th grade biology, North Pole Alaska (20 hrs per week, Aug 2011- May 2012)

Public education and outreach programs

- **Fostering Science Program**, co-director with C. Mulder (director), 2017-present. This program provides a summer outdoor science camp for youth in foster care within the Bonanza Creek LTER. (20 youth in care of the state have participated to date)
- **Fresh Eyes on Ice**, co-PI with C. Arp (PI) and L. Oxtoby and D. Brown (co-PIs), 2019-present. This program engages k-12 youth, educators and community members in community-based observations of freshwater ice thickness and couples these measurements with in situ sensors and remote sensing data to better understand changing freshwater ice conditions in Alaska.
- **Community Eyes on River Ice**, PI with C. Arp, D. Brown, B. Woods, E. Sparrow (co-PIs), 2021-present. This program expands the diversity and reach of Fresh Eyes on Ice to the broader public in Alaska through photo observations of ice conditions, social media and ice science and geospatial data education. Citizen science photo data informs ice jam flood forecasting in real time.
- **Arctic and Earth SIGNs**, co-PI with E. Sparrow (PI) and M. Chase, J. Fochesatto, G. Kahoe, K. Yoshikawa, C. Dierenfield. 2016-present. This program engages community teams and youth in climate change science, adaptation planning, and problem solving through GLOBE

environmental monitoring and NASA assets. (29 communities, 384 participants in core program to date)

- **Winterberry Citizen Science Project**, PI with C. Mulder and E. Sparrow, co-PIs, 2016-present. This project involves adults and K-12 youth from rural and urban Alaska in collecting data on berry ripening and loss during fall and winter. (28 communities, 1090 participants to date)
- **Late Bloomers Project,** coordinator and Senior Personnel (with P. Diggle, University of Connecticut and C. Mulder), 2017-present. This project engages rural Alaskan communities in investigating flower bud primordia developmental stages and in reporting late blooming flowers through a collaboration with the LEO network.
- **Project BrownDown Citizen Science Project,** coordinator and co-director (with C. Mulder), 2014-2016. This project involved adults and K-12 students across Alaska in collecting plant phenological data on timing of leaf senescence for native and non-native species. (5 communities, 862 participants)
- **Melibee Citizen Science Project**, Coordinator and co-director (with C. Mulder) 2012-2014. This project was created as a part of my PhD and involved citizen scientists from urban and rural Alaska in collecting phenological data on native berry-producing plants and an invasive plant potentially competing for pollinators. (17 communities, 247 participants)
- **Center for Alaskan Coastal Studies Programs,** coordinator and educator, 2008-2010. I led several ecology education and citizen science programs and supervised a seasonal staff of 7. Programs included 1) the Alaska Coastal Ecology program, a 3-day intertidal and forest ecology immersion trip for youth groups and classrooms to the remote Peterson Bay Field Station or Kasistsna Bay Lab (>2,000 students per year), 2) the CoastWalk Program, a 34 year old community-based monitoring program focused on coastal change and marine debris (500 volunteers per year), and 3) a multitude of classroom visits, natural history tours, youth ecology camps, curriculum development projects, and public science events.

K-12 Student Research Project Mentor

- **Anabelle Grunau, Lief O'Regan, Ben Fields** (Pearl Creek Elementary), GLOBE NW and Pacific Regional Student Research Symposium, Pasadena, CA, 2024
- **Elena Prichard** (West Valley High School) - 4th place statewide, Alaska Statewide High School Science Symposium 2020)
- **William Keechi** (West Valley High School), Wildfire and Invasives in Alaska project greenhouse work, Fairbanks, AK
- **Alexandra and Mari Fujioka** (Sitka 4-H), GLOBE NW Regional Student Research symposium, Fairbanks, AK 2020, 2021
- **Madalynn Eningowuk** (Shishmaref School)- 1st Place at Alaska Science and Engineering Fair 2019, Anchorage, AK
- **Sarah Graham, Jeremiah Druck, Lauren Pymn, Shelly Erick** (John Fredson School, Venetie) - Alaska Berry Science Student Research Symposium 2019, Anchorage, AK
- **Kyla Martinez, Destini Paxton, Bella Meglitsch** (Takotna School) Alaska Berry Science Student Research Symposium 2019, Anchorage, AK

- **Ava White, Baylor Wasson** (Polaris K12 Charter, Anchorage) Alaska Berry Science Student Research Symposium 2019, Anchorage
- **Kiera Wilson** (Eagle Community School) - Alaska Gateway School District Science Fair, Champion 2018
- **Mia Winter, Michael Duran, Ma'Karii Martinez** (Metlakatla Boys and Girls Club) - GLOBE NW Regional Student Research Symposium (Redmond, WA) Reviewers' Choice (recognized for community impact, use of GLOBE data, and research process) and Students' Choice awards, selected to attend GLOBE International Annual Meeting (Detroit, MI)
- **Haylie Sundown, Charles Smith, Kayla Beckham, Jordan Wheeler** (Bethel Regional High) - GLOBE NW Regional Student Research Symposium (Bozeman, MT), Alaska Forum on the Environment (Anchorage, AK)
- **Justine Erickson-Bradney** (Bethel Regional High) Alaska Forum on the Environment 2021, Western Alaska Interdisciplinary Science Conference 2021, Co-recipient of the Todd Rodenbaugh Award with me!
- **Aidan Coy, Sean Richard, Angie Samash, Jordan Buster** (Nenana High School) - Alaska Forum on the Environment 2019 (Anchorage, AK)

Public Events

2024	Host and co-organizer Fresh Eyes on Ice Student Research Symposium
2022,23,24	Coordinator of UAF Arctic and Earth SIGNs and UAF Climate Scholars Community Awards at the Interior Alaska Regional Science Fair
2022, 23	Host and co-organizer GLOBE Alaska Student Research Symposium
2022	Host and co-organizer of Arctic Educator's Fair
2021,22,23	Organizer of Pearl Creek Elementary Science Fair
2020	Host and co-organizer GLOBE Student Research Symposium for Northwestern United States (Cancelled due to COVID19)
2019	Reviewer for NASA eClips Spotlight student videos addressing science misconceptions
2017-2019	Farthest North Girl Scout Council Citizen Science Junior Event Day Organizer (Feb 2019, 40 scouts) and
2017-present	Girl Scouts Citizen Science Badge and Plants Badge facilitator (multiple Brownie and Junior troops)
2017-present	Outreach activity table host, routinely at outreach, education and event fairs (eg. Arctic Research Showcase, Fairbanks Earth Day fair, Fairbanks school family nights, rural community family science nights, UA Museum of the North Family days, conferences, etc.) ***Minimum of 4 per year.***
2016-present	Guest scientist, classroom visits or skype sessions with classrooms, camps, or youth groups throughout Alaska on topics of climate change, invasive plants, berries, or phenology. ***Average 2 to 4 per month*** depending on the year.

2015-2018 Scientist Partner and science curriculum content reviewer, REACH- Raising Educational Achievement through Cultural Heritage program

2008 Co-instructor, Ecological Society of America SEEDS field course for minority undergraduate students and students from historically black universities

2005-2011 Naturalist and Weed Pull Coordinator, Friends of Creamer's Field Refuge, Fairbanks, AK

2006-present Science Fair and Symposium Project Judge and Overjudge, Alaska Statewide High School Science Symposium, Fairbanks North Star Borough School District science fairs (school & district levels), Kenai Peninsula Borough School District science fairs. ***Average 3 per year.***

2016 Project citizen judge, Tanana Middle School

Professional Service

2024 Project advisor for NSF Polar Explorer Project (PI Deborah Huntzinger, Northern Arizona University)

2024 Education Advisory Board member, Gulf of Maine Research Institute

2023, 24 Board member, Fairbanks Climate Action Coalition, UAF representative

2022 Reviewer, Government Canada Strategic Science Fund's Arctic education proposals

2021, 24 ARCUS Community and Citizen Science in the Far North conference planning committee

2020-24 AGU Session Convener (convened 5 sessions to date on Arctic science education and climate change education)

2021 Rising Voices Center for Indigenous and Earth Sciences Conference Planning Committee (RV9)

2021-24 Project advisor for NSF iTest **Molly of Denali** Community Science - Investigating environmental identity development among children in rural Alaska Native communities through intergenerational, culturally responsive community science programming (PI Jessica Andrews, WGBH)

2021 Project Advisor for NSF NNA **Molly of Denali** Exploring the potential of digital education frameworks to build understanding of socioecological impacts of Alaskan environmental change (PI Bill Shribman, WGBH/PBS Learning Media)

2020, 21 Co-Organizer for **Solve Climate by 2030** teach-in initiative Alaska site

2019, 21 Alaska NSF EPSCoR Education and Outreach Seed Grant review committee

2020-present Board of Directors, Alaska Science Teachers Association

2019 Committee on Culturally Responsive K12 Science Education and Outreach for Alaska, Alaska Sea Grant and Arctic Research Consortium of the United States

2018 Reviewer for National Climate Assessment, Education resources- Alaska Chapter

2016-present Peer-reviewer for *BioScience, Ecology and Society, Biological Invasions, American Journal of Botany, Trends in Ecology and Evolution,* and *Arctic*

2017 Technical reviewer, Alaska Non-native plants invasiveness rankings, Alaska Exotic Plants Information Clearinghouse, Alaska Natural Heritage Program

2005-2020 Board of Directors, Alaska Invasive Species Partnership (Alaska's invasive species research, management, education and policy committee, formerly called Alaska Committee for Noxious and Invasive Pest Management), roles held:

- Strategic Planning Working Group (2019-2020)
- By Laws Committee (2018-2019)
- Board of Directors (director 2016-2019, secretary 2018)
- communication planning committee (2017-18)
- co-author of research section in strategic plan (2015)
- Education and Outreach Sub-Committee (2007-2008, chair 2009)

2011-2013 Ecological Society of America EcoEd Digital Library Editorial Board

2008 Technical reviewer for GLOBE invasive plants protocol

University Service

2015-present Education and Outreach Committee, UAF Bonanza Creek LTER

2021-present UAF International Arctic Research Center Strategic Planning Team, Education strategic initiative lead

2021-present Diversity, Equity and Inclusion Committee, UAF Bonanza Creek LTER

2023-present UAF Honors College Faculty Advisory Committee

2024 URSA Student Proposal Reviewer

2023 UAF Unit Review Promotion and Tenure Committee

2022 UAF Undergraduate Climate Change Education Summit, Co-organizer

2022 UAF University-wide Promotion and Tenure Committee

2022 Project advisor for UAF Research Coordination Network – Undergraduate Biology Education incubator project AKDaTUM Alaska Data for Undergraduate Educational Modules (PI Diane Wagner)

2020 Reviewer, UAF Micro-credentialing pathways program proposal

2020 Designed and conducted the UAF Climate Scholars Program needs assessment

2019 UAF Accreditation Task Force for Outreach and Engagement

2019-2020 Strategic Planning Committee, UAF Bonanza Creek LTER Program, Education committee co-lead, Phenology committee member

2019-2020 Education and Outreach Committee, UAF Georgeson Botanical Garden

2016-2019 Resilience and Adaptation Program, Program Advisory Panel, Student Admissions Committee

2011-2015 UAF Center for Global Change Science Steering Committee

Public Media Interviews and Coverage

- "Fresh Eyes on Ice Project Wins Award" NASA News and Events (Dec 2024)
- "Climate change is the focus of the 25th annual Alaska invasive species workshop" UAF News (Nov 2024)
- "Let's bring wildfire education into the classroom" Frontiersman (Sept 2024)
- "UAF researchers document wild alaska berries and climate change" Alaska Public Radio, Alaska News Nightly, starts at 5:31 or text article here (Aug 2024)
- "Boylan, Simpson, Spellman named 2024 Usibelli Award Winners" UAF News (Aug 2024)
- "Invasive Plant Seedbank Development after Wildfire in Alaska's Boreal Forest: Jessie Skalisky" URSA Research Spotlight (July 2024)
- "URSA Announces Summer 2024 Student Project Award Recipients" UAF Cornerstone News (May 2024)
- "SAR Data Help Alaskans Travel Safely on River Ice" NASA Earth Data Blog (April 2024)
- "Scientists, communities work together to monitor Alaska ice conditions" Fairbanks Daily News-Miner (April 2024)
- "SAR Data Help Alaskans Travel Safely on River Ice" NASA Earth Data Blog (April 2024)
- "New radar analysis method can improve winter river safety" UAF Geophysical Institute News (April 2024)
- "Satellites Reveal Deadly Holes in Alaskan 'Ice Highways'" Newsweek (April 2024)
- "2024 Alaska Forum on the Environment – Science for Alaska communities" Alaska Climate Adaptation Science Center News (Feb. 2024)
- "Predicting Alaska's Spring Break Up" Aurora Magazine (Spring 2024)
- "URSA announces 2023-24 Travel Award recipients" UAF Cornerstone News (November 2023)
- "Spellman and Wald receive ASUAF Faculty and Staff Awards" UAF Cornerstone News (November 2023)
- "URSA announces 2023-24 Climate Change Project Award recipients" UAF Cornerstone News (November 2023)
- "New 'berry booklets' for Alaska pickers combine traditional knowledge and science" Alaska Public Media, KYUK Radio (September 2023)
- "Late spring brings bumper crop of salmonberries to Western Alaska" KYUK Radio (September 2023)
- "Arctic invasives heating up with climate change and development" Alaska Public Radio, Alaska News Nightly, starts at 12:27 (July 2023)
- "Satellites and citizen science predicting Alaska's spring break-up" Fairbanks Daily News Miner (June 2023)
- "Your photos could help scientists predict spring floods and track climate change" Alaska Public Media - NPR (May 2023)

- "Citizen observers in Alaska river communities help scientists predict spring breakup flooding" Anchorage Daily News (May 2023)
- "Calendar says spring but Old Man Winter still resides in Alaska" ABC Fox Alaska News (May 2023)
- "Flex your photography skills to help predict flooding" Fairbanks Daily News Miner (May 2023)
- "Public powered Earth Science" NASA EarthData Blog (April 2023)
- "Student scientists put their research on display at global symposium" Fairbanks Daily News Miner (April 2023)
- "Are berries in New Hampshire ripening earlier because of climate change?" New Hampshire Public Radio, Outside/In (October 2022)
- "Project aims to gather multi-year berry growth data" Fairbanks Daily News Miner (August 2022)
- "AGU Thriving Earth Exchange project forecasts berry futures in Alaska" NEON Spotlight (June 2022)
- "University of Alaska Fairbanks sponsors Earth day symposium for students across Alaska" KTVF Channel 11 News (April 2022)
- "Student shatters stereotypes, studies plants' urban evolution" Fairbanks Daily News Miner (April 2022)
- "Shattering stereotypes while studying how plants evolve in the city" UAF News (April 2022)
- "University of Alaska Fairbanks student featured in Science" KUAC 89.9 FM story starts at 4:51
- "Alaska Educators invited to a virtual Arctic Educators Fair" Anchorage Press (Feb 2022)
- "New CASC Microberry Project kicks off" Alaska Climate Adaptation Science Center News (Oct 2021)
- "University of Alaska Fairbanks launches 'Fresh Eyes on Ice' project" KTVF Channel 11 (Oct 2021)
- "Western Alaska residents fill buckets of late-budding salmonberries" Alaska Public Media/KNOM (Sept 2021)
- "Fostered youths have fun week at Bonanza Creek camp" UAF Cornerstone (July 2021)
- "National Weather Service needs your help! Requests community observations to improve river break-up forecasts" KTVF Channel 11 (April 2021)
- "Break up round up: two things to know as the ice goes out" Fairbanks Daily News Miner (April 2021)
- "UAF Ice monitoring project expands with NASA help" KUAC News 89.9 FM (April 2021)
- "How a US Arctic research initiative is pushing to connect science with Arctic Communities" Arctic Today (Feb 2021)
- "New community office guides national Arctic research initiative" UAF News (Feb. 2021)
- "United States GLOBE Partner Yearbook 2019" The GLOBE Program (2020)
- "Researchers take on berry timing amid climate change" KNBA and KDLL Radio (July 2020)
- "Fresh Eyes on Ice encourages community to share ice observations" KTVF Channel 11 (April 2020)
- "Katie Spellman and Kristin Timm named faculty fellows in Honors' Climate Scholars Program" UAF News (March 2020)

- "Venetie teacher, students help NASA research" Fairbanks Daily News-Miner (February 2020)
- "Program helps students see signs of a career path in the sciences" UAF News and Information (Dec 2019)
- "Researcher offers ways to get public involved in science" UAF News and Information (Dec 2019)
- "Berry crops becoming more unpredictable" Fairbanks Daily News-Miner (August 2019)
- "Seasonal change in Alaska may hold silver lining for restoration efforts" LTER Network News (July 2019)
- "Alaska Wild Berries Research" KFBX Radio (June 2019)
- "Arctic and Earth SIGNS workshop seeks to educate communities" International Arctic Research Center News (June 2019)
- "How a new project links community members with scientists to monitor Alaska's river and lake ice" Arctic Today (April 2019)
- "University and communities will monitor Alaska's inland ice" UAF News and Information (April 2019)
- "New ice monitoring project engages kids to become community scientists" UAF Water and Environmental Research Center news (April 2019)
- "Natural Connections: Climate change and my community" The Chippewa Herald (July 2018)
- "Climate change is affecting wild berries, and the people who depend on them" Arctic Today (March 2018)
- "Course helps educators engage students in climate change" UAF Cornerstone (March 2018)
- "Warming Climate affecting Alaska berries" KTVF Channel 11 (Jan 2018)
- Northern Soundings interview on women in science, citizen science and the Winterberry project (October 2017)
- "The Berry Jams Challenge on Sitka Public Radio Transglobal Music Express" KCAW Radio, Sitka, Alaska (September 2017)
- "Story49: A New Season in Shishmaref" KNOM Radio, Nome, Alaska (September 2017)
- "Wanted: Berry pickers for new Winterberry project from UAF" Peninsula Clarion (August 2017)
- "UAF berry study gets community involved" Fairbanks Daily News Miner, Fairbanks, Alaska (August 2017)
- "New UAF project hopes to enlist citizen scientists to monitor Alaska berries" Anchorage Daily News, Anchorage, Alaska (August 2017)
- "Scientists are recruiting Alaskans to help them track berry patches" United Press International (August 2017)
- "Researchers ask citizens to monitor Alaska's berries" Eye on the Arctic (August 2017)
- "Berry research project seeks volunteer citizen scientists" UAF News, Fairbanks, AK (August 2017)
- "Science Isn't Just for Scientists—We Can All Take Part" YES! Magazine (February 2017)
- "UAF teaches science basics to West Coast students- Science for students from afar" Fairbanks Daily News Miner, Fairbanks, Alaska (August 2016)
- "Project BrownDown brings an end to fall season" Fairbanks Daily News Miner, Fairbanks, Alaska (November 2015)
- "Berry harvests becoming less predictable" Peninsula Clarion, Kenai, Alaska (October 2015)

- "Researchers investigate Invasive Plants" Fairbanks Daily News Miner, Fairbanks, Alaska (August 2014)
- "Invasives pollination study shows mixed results for Alaska berries" Fairbanks Daily News Miner, Fairbanks, Alaska (August 2013)
- "UAF researching bee pollinators with invasive plants" Capitol City Weekly, Juneau, Alaska (June 2013)
- "Citizen science volunteers shed light on a "berry" intriguing question about invasive plants in Alaska" Hand on the Land News Blog (June 2013)
- "The beauty of pollen is nothing to sneeze at" Fairbanks Daily News Miner, Fairbanks, Alaska (May 2013)
- "Invasive plant project needs citizen scientists" Fairbanks Daily News Miner, Fairbanks, Alaska (May 2013)
- "Invasive plant phenology and berries in Alaska" KBYR Radio, Garden Party with Jeff Lowenfels, Anchorage, Alaska (May 2013) Interview begins at 41:10 in the 18 May 2013 episode of the talk show
- "The Melibee Project and Citizen Science" My Alaska Forests, Chugach National Forest, Alaska (June 2012)
- "Second Graders Get a Glimpse of Climate Research" International Arctic Research Center, Fairbanks, Alaska (May 2013)
- "Local Educators Earn Award for Science Writing on Student Project" Fairbanks Daily News Miner, Fairbanks, Alaska (April 2012)
- "Denali Elementary students explore the Chatanika watershed" Fairbanks Daily News Miner, Fairbanks, Alaska (Sept. 2010)

Highlighted Professional Development Training

- *Mental Health First Aid for Youth,* April 2024
- *Creative Collaborations Ideation Studio,* the MIX @UAF and the Center for Teaching & Learning, March 2024
- *NASA's Applied Remote Sensing Training (ARSET) Program, Connecting Citizen Science with Remote Sensing,* Jan. 2023
- *Research and Indigenous Peoples,* with Dr. Cana Uluak Itchuaqiyaq, hosted by UAF eCampus. 2022
- *Beyond Land Acknowledgements*- Feb. 2022
- *Canvas Barnraising*- UAF eCampus instructional design and delivery in Canvas training, Dec. 2021
- *Level Up* - UAF eCampus online instructional design and delivery training, May 11-15, 2020
- *Controversial Topics & Difficult Dialogues: Effectively Engaging in Critical Conversations,* Alaska Climate Adaptation Science Center, Feb. 2020
- *Stop Talking: Indigenous Ways of Teaching and Learning* training, Alaska Climate Adaptation Science Center, Feb. 2020
- *Untangling Colonialism — Decolonizing Advocacy Workshop*, Native Movement, Oct. 2019

- *Decolonizing Education Practice Training*, GLOBE Annual Meeting (Detroit, MI), July 2019
- *Research Planning and Strategies for Early Career Faculty Workshop*, UAF Faculty Development, Jan 2018
- *Leadership Workshop for Early Career Women in Science*, Alaska Climate Science Center, Aug 2017
- *Climate Change Teaching Faculty Collaborative*, UAF eCampus and Vice Chancellor of Research Office, Spring Semester 2017
- *UAF iTeach - Instructional Design and online learning workshop*, May 2016
- *Global Learning and Observation to Benefit the Environment (GLOBE) Trainer Certification,* Summer 2016
- *Project Design and Evaluation*, NOAA Coastal Services Center, Fall 2009
- *Global Learning and Observation to Benefit the Environment (GLOBE) Protocol Certification*, Summer 2008

Professional Memberships

Global Learning and Observations to Benefit the Environment, 2007- Present
Fairbanks Climate Action Coalition, 2015-present
Association of Interior Native Educators, 2019-present
Rising Voices Center for Indigenous and Western Science, 2017-present
Alaska Invasive Species Partnership, 2005-present
American Geophysical Union, 2017-present
Association for the Advancement of Participatory Science (formerly “Citizen Science Association”), 2016-present
Association for Women in Science, 2015-present
Ecological Society of America EcoEd Digital Library Editorial Board, 2011-2013
Ecological Society of America, 2011-present
Alaska Science Teacher Association, 2009-present
Kachemak Bay Environmental Educator’s Alliance, 2008-2010
Phi Beta Kappa, 2003-2005
Sigma Xi, 2003-2005

Heidi Ann Wood, PT, DPT, MPH
790 Pelican Way
Fairbanks, Alaska
99709
907.978.4744
heidi.wood@gmail.com

EDUCATION

University of North Dakota—Fargo, ND 2018-2024
Master's in Public Health: American Indian and Alaska Native Health

University of Colorado – Denver, CO 2010-2013
Doctor of Physical Therapy

Western Washington University – Bellingham, WA 2002-2005
Bachelor of Science in Human Biology and Anthropology, Minor in Chemistry

PROFESSIONAL EXPERIENCE

Tanana Chiefs Conference – Physical Therapy and Integrated Care – Fairbanks, AK 2015-Present
- Comprehensive evaluation and treatment of Alaska Native Individuals
- Treatment of individuals four through 98 years old
- Use of video technology for care
- Management of staff
- Development of communication system between Alaska Native Medical Center and Tanana Chiefs Conference to best manage orthopedic patients

Adient Orthopedic Physical Therapy – Fairbanks, AK 2013-2015
- Comprehensive evaluation and treatment of patients with orthopedics injuries
- Staff Physical Therapist

CERTIFICATIONS

Level One Dry Needling	Nov 2023
Clinical Instructor Certification Physical Therapy	Nov 2018
Graston Technique, Level One Practitioner	Oct 2014
Lee Silverman Voice Treatment BIG Certified Therapist	Jan 2013
Yandara Yoga Institute – Todos Santos Mexico	April 2008

PROFESSIONAL DEVELOPMENT

Foundations of Leadership and Management	2023
Level One Dry Needling	2023
Advanced Topics of Pregnancy & Postpartum PT	2020
Fundamental Topics in Pregnancy and Postpartum PT	2019
Evaluation and Manual Therapy for Temporomandibular Joint Dysfunction	2015
Developing Positive Emotional Habits	2013
Advanced Joint Manipulation	2012
Medical Spanish	2012
The Female Athlete Triade	2011
Yoga and Pilates in Physical Therapy	2011

PROFESSIONAL ORGANIZATIONS

Alaska Physical Therapy Association	2013-Present
Young Professionals Council	2014-2017
American Physical Therapy Association	2010-Present
Certified Yoga Instructor with Yoga Alliance	2008-2017

PREVIOUS EMPLOYEMNT

Adjunct Faculty Yoga Instructor, University of Alaska Fairbanks—Fairbanks, AK	2009-2010
Physical Therapy Aide, Fairbanks Urgent Care Physical Therapy—Fairbanks, AK	2008-2009
Commercial Fisherman, Full Moon Fisheries—Dillingham, AK	2007-2009
Substitute Teacher, Fairbanks North Star Borough School District—Fairbanks, AK	2006-2010
Sternman, Kathleen Lobster Fishing Vessel—Mohegan Island, ME	2007
Undergraduate Teaching Assistant, Human Anatomy and Physiology and Biology 101 (for credit)—Bellingham, WA	2003-2004
Undergraduate Research Assistant—Bellingham, WA	2003-2005

SERVICE

Hockey Club Fairbanks 6U Volunteer—Fairbanks, AK	2023-Present
Junior Nordics Parent Volunteer—Fairbanks, AK	2022-Present
Pearl Creek Parent Teacher Organization—Fairbanks, AK	2022-Present
Fairbanks Children's Museum Board Member —Fairbanks, AK	2021-Present
Alaska Physical Therapy Association Board Member	2021-2022
KUAC Phone Bank Volunteer—Fairbanks, AK	2015-2023
Equinox Marathon Volunteer—Fairbanks, AK	2015
Midnight Sun Run, Medical Staff Volunteer—Fairbanks, AK	2015
Chena River Run, Medical Staff Volunteer—Fairbanks, AK	2015
Golden Mile Race, Logistics Volunteer—Fairbanks, AK	2014
North Star Ballet, Medical Staff Volunteer 2013—Fairbanks, AK	2013
National Public Parks Tennis Wheelchair Championship—Denver, CO	2012
Rock 'N' Roll Marathon, Medical Staff—Denver, CO	2011
Mile High Down Syndrome: Step Up For Down Syndrome Charity Walk –Denver, CO	2011
Stout Street Clinic, Clinic for homeless and indigent population—Denver, CO	2011-2012
9 News Health Fair, posture and balance screens –Denver, CO	201
National Western Stock Show, health screens—Denver, CO	2011
Relay for Life, American Cancer Society—Fairbanks, AK	2008-2011
Yoga Club University of Alaska Fairbanks—Fairbanks, AK	2009-2010
Remar Children's Orphanage, volunteer—Cuenca, Ecuador	2006
Alcohol and Other Drugs, Lifestyle Advising Group Coordinator—Bellingham, WA	2003-2005
Special Olympics of the Tanana Valley—Fairbanks, AK	2001-2002

APPENDIX E

Administrative Policy Manual

Pearl Creek STEAM Charter School

PEARL CREEK STEAM CHARTER SCHOOL serves an energetic, involved community. The staff is committed to excellence. Parents are viewed as "first teachers." We appreciate working cooperatively to teach all students.

Our Mission: Pearl Creek Elementary STEAM Charter students engage in interdisciplinary project- and place-based learning and use critical thinking, creativity, and innovation to solve real world problems and develop the confidence and skills necessary for a technologically advanced future.

The content of the parent handbook is not intended to be all inclusive and is not **exhaustive**. It reflects areas of importance to Pearl Creek and reinforces critical items pertinent to our mission. Other questions should be addressed to the principal.

Attendance Policies

School begins promptly at 9:15 a.m. and concludes at 3:45 p.m. Beginning at 9:00 a.m., staff members supervise students outside on the playground and at the school entrances. Prior to that time, students shall not enter the building and should not be dropped off early. During recesses and before/after school, students are expected to remain outside when the temperature is above -20 degrees. Students shall be dressed in appropriate clothing to accommodate an arctic setting, including proper footwear.

Absences require notification from a parent by one of the following methods:

a. Written or email explanation from parent.
b. Phone call from a parent. Call 479-4234 and press 1 to leave a msg.
c. All absences must be excused within 24 hours.

Pearl Creek feels absences negatively impact student achievement and will be monitored by the school principal and brought to the attention of parents when they accumulate to over 5 unexcused school days. Please communicate with the school office and your child's teacher to help track your child's attendance accurately.

Tardiness -Those arriving at school after 9:25 a.m. or leaving before 3:45 p.m. should report to the office for an attendance slip. Parents must come into the office to sign their child out and the students will be called to the office. This is to ensure the safety of your child.

Make-Up Work for Illnesses

Teachers will provide assignments for students who are absent from class due to illness and will indicate the length of time during which make-up work will be accepted.

Vacations It is helpful to know in advance about vacations and their duration. Please inform **both** the **classroom teacher** and the **attendance secretary** of planned absences. Students can obtain vacation work packets from the front office. Grades will be assigned for students who attend a minimum of 20 days.

Behavior Expectations

1. Respectfully follow directions of adults.
2. Swearing, cruel teasing, or put-downs and bullying will not be permitted.
3. Use hands, feet, and objects safely.
4. Walk quietly in the building.
5. Encourage respect and cooperation.
6. Respect the property of others.

Conduct that interferes with the educational process or the lawful activities of others is prohibited. Meeting with the principal and notification to parent/guardian may be required by the teacher or staff member.

Disciplinary action may occur for violation of school district policy. Each pupil is under the control and direction of the principal or teacher in charge of the school.

Restricted & Prohibited Items at School

Electronics, games, trading cards, and gum are all subject to restriction at school. In general, these items should not be used, seen or accessible during the school day. Exceptions may be made for special needs or activities, but we cannot be responsible for the potential loss, damage, and/or friction these items cause. Students are discouraged from bringing large sums of money to school as we are unable to assure proper security. Cell phones may be used in the office waiting area, or outside, before or after the school day, with direct permission from the closest supervising adult.

Inhalants, explosives, laser pens, lighters, weapons, or objects that look like weapons, or any object used like a weapon, aerosols and breath fresheners containing alcohol are not allowed at Pearl Creek. This list is not exhaustive and any object used in misconduct or aggression may be confiscated. These items may be confiscated permanently and may carry disciplinary consequences depending on the situation. Students are advised to self-disclose if they have prohibited items at school.

Bicycles

Bicycles on roadways are subject to state law. They must be ridden on the bike path or with the traffic on the roadway. Riders must wear helmets on school property. Helmets are required for class trips with bicycles. It is impossible to provide

assurance of their safety. Security of bikes cannot be assured. Students who cause safety concerns or who must repeatedly be reminded to follow rules, may lose their right to ride their bikes to school. Bikes may be confiscated and held for a parent to pick up. Unauthorized motorized vehicles are not permitted on school property.

Cold Weather and Winter Preparedness
Students are expected to dress appropriately, for health and safety, and for all our weather. This includes coats, snow pants, boots, hats and mittens. Shoes must be worn at all times. Children may be directed to come to the office if they are in danger of physical harm due to inappropriate dress. Parents will be contacted if this occurs.

Cell Phones
Phone calls on cell phones may be made in the cell phone zone, right in front of the office, before and after school. Cell phones must be turned off and kept in the student's locker or backpack during the school day. All electronic devices will be put away at the first bell. If students have them in their possession during the school day, they will be confiscated and may be returned at the end of the day. If an item is confiscated for a second time or any subsequent offense, it will be returned only to a parent/guardian in person.

Computer Use
An "Appropriate Use Form" must be signed before a student may use school district computers. Computer and technology use in school is for educational purposes only and will happen with the direct supervision and direction of an instructor.

Curbside Drop off-Pick up
Please do not park at the curb and vacate your vehicle when dropping off or picking up students. If you have to enter the building for any reason, please park in a designated parking spot.

Dress Code
District policy states that student's attire should not pose a threat to public or personal health and safety, or be disruptive or distracting to classroom activity or student behavior. Students should adhere to the following:
~No provocative clothing such as spaghetti straps or bare shoulders, low necklines, halter tops, bare midriffs, bare backs, short shorts or clothing that reveals underwear.
~No shoes with wheels and flip flops/sandals are not allowed for recess.
~Articles of clothing that advertise, depict the use of, or condones inappropriate language, drugs, alcohol, tobacco, violence, sexual behavior/innuendo, or suicide, or that disparages or humiliates any group, individual, national origin, gender, race, or disability are strictly forbidden.
~No wallet chains, spiked collars, safety pins, chokers, or bike chains around the neck or any jewelry which poses a hazard or distraction.
Each student will assume full responsibility for his/her complete mode of dress.

Health
Regular attendance at school is critical, but please do not send your child to school if he/she is ill. General health guidelines promote keeping a child home until they are fever free for 24 hours. If your child has been absent from school, please make a call or send a note to the teacher and office. Children who are in school will be expected to participate in class activities and recess. A physician's note or medical plan is required to modify a student's day or activities. If a student has had a significant medical procedure, (i.e. surgery, broken bone), please contact the school. Parents should pick up ill children promptly for the child's wellbeing, and health of all.

Medication Procedures: All prescription medication must be in a labeled prescription bottle and taken to the nurse's office by the parent. The designated nurse assistant may give Tylenol or Ibuprofen with written or verbal permission from the parent. Other nonprescription medications cannot be given by the nurse or self-administered by the student. Parents may visit the school to give other nonprescription medications if needed during the school day. Please inform the school if your student has received medication before the start of the school day. Please include the name of the medication and the amount administered.

Homework
The school believes that homework may be assigned in grades 4-6. Homework may be given in grades K-3. Each classroom teacher will inform students and parents about the homework expectations and grading policies for their class. In the intermediate grades students and parents should familiarize themselves with PowerSchool Premier to regularly monitor assignments and grades online.

Insurance (Medical)
The school district does not provide automatic coverage if your child is injured at school. If your child is not covered by a parent or guardian's health insurance policy, the school district has arranged for a commercial carrier to make low cost insurance available to all public school students. If you need an application or have questions, please contact the Fairbanks North Star Borough School District Risk Management Office at 907-452-2000 X 11303. Our school nurse can also help with Denali KidCare applications.

Lockers/Desks

Lockers will be assigned to those students in classrooms without cubbies and are not to be exchanged. Personal locks are not permitted on lockers. Problems resulting from abuse will necessitate loss of locker privileges. Students should not put stickers on their lockers, only magnets. Lockers/desks are provided for the convenience of the students. The school reserves the right to search lockers/desks for the purpose of securing property, maintaining adequate sanitation, and inspecting for prohibited articles.

Lunch Program

Students will have a 30-minute lunch period. Applications for free and reduced lunch are available from the office or on-line at the district website. We encourage nutritious choices for lunch and snacks. Food and drinks should not be taken into the halls, bathrooms or on the playground unless the classroom teacher is with the class.

Newsletters, Field Trips, Activities

Parents are always invited to participate in field trips and we will try to notify you well in advance of these activities. Permission is not required for curriculum related trips, but will be requested for voluntary recreational activities or extracurricular functions. Check the teacher's newsletter for more information.

Parent Input Regarding Class Placement

Pearl Creek accepts timely input concerning class placement. Placement is based on total numbers in each class, ratio of boys and girls, cultural backgrounds, range of ability levels, special academic needs, special behavioral needs, and learning/teaching style. Firsthand input from your child's current teacher and staff is utilized.

Parent Volunteers

Pearl Creek's vital group of volunteers assists with clerical work, tutoring, instruction, and presentations. Persons interested in volunteering should contact the office or classroom teacher. Parents and guests are to sign in at the office. The very act of caring for your child, getting him or her to school regularly, following up on school work, and communicating is a tremendous help to our program.

Pets and Animals

Animals are not to be brought to school nor kept at school, without permission from the office. Permission will be granted under carefully supervised circumstances to assure the safety and health of students and the pet.

Phone

Students should not use phones to plan social activities or have someone else assume student responsibilities (forgotten homework, materials, notes, tennis shoes, etc.). Use of the school phones will be granted by permission from staff members only. Staff members are not able to take calls during class time. You are welcome to use the teacher's voice mail, which may not be checked until the end of the school day. Our school phone number is 907-479-4234.

Records

It is imperative that parents provide current addresses, phone numbers, and emergency contacts. Pertinent court orders, custody agreements or legal documents must be properly signed, dated, and in the student's file to make it possible for us to be responsive to the terms. If changes in address, phone numbers or emergency contacts occur, please notify the front office so records can be maintained with current information.

Solicitation of Funds or Services

Funds or services will only be solicited by or from students within the school under special circumstances. These activities must have the approval of the school principal. Persons wishing to display posters or distribute flyers, must clear them beforehand with the district. Please check the Principal's newsletter for school and community events.

Supplies and Equipment

Students are expected to come to class prepared and to provide their own paper and pencils. Individual teachers may indicate additional supplies needed for their classrooms. These lists will be provided to students at the beginning of school.

Textbooks

When textbooks are furnished to students, the book's condition is noted. The student's name should be put in the book to facilitate return if lost. We prefer to locate lost books rather than to charge for them. If a text book is damaged or lost, the student is responsible for replacement or repair costs, according to district policy. Collected fines will be turned in to the office. Students are expected to treat school property with respect. If a student loses a textbook or a library book during the course of the school year, he/she will be required to reimburse the school for the cost of the book.

Nondiscrimination Notice

~The Fairbanks North Star Borough School District does not discriminate on the basis of race, color, religion, sex, age, national origin, disability, marital status, pregnancy, sexual orientation or veteran status.

~The Fairbanks North Star Borough School District does not discriminate on the basis of sex in violation of Title IX of the Education Amendments of 1972 in the educational programs or activities which it operates.

~The Fairbanks North Star Borough School District does not discriminate on the basis of disability in violation of Section 504 of the Rehabilitation Act of 1973. This includes admission or access to, or treatment or employment in its programs, services, and activities. Individuals requiring further information should contact the designated compliance director:

Director of Employment and Educational Opportunity
520 Fifth Avenue
Fairbanks, Alaska 99701
(907) 452-2000 ext. 11379
Fax (907) 452-3172
janejira.smith@k12northstar.org

Pearl Creek Steam Charter School Handbook Revised February 2025
District Policies and Administrative Regulations are available in their entirety at www.k12northstar.org. Calendars of school events and other school specific information is available at Pearl Creek's website, located through the district's website.

APPENDIX F

Instructional Program

Pearl Creek STEAM Charter School

COLORS OF NATURE / KIT 3
BIOLOGY AND ART

HOW DOES COLOR HELP US UNDERSTAND THE LIVING WORLD AROUND US?

The **Colors of Nature Kits** are designed to help students explore the question: *how do art and science help us understand the world around us?* Through a series of investigations students become familiar with core practices of art and science, developing scientific and artistic habits of mind that empower them to engage in self-directed inquiry through the generation and evaluation of ideas. Kit 3 explores this question through the lens of art and biology: the study of life and living organisms.

A STEAM APPROACH TO EDUCATION (Science, Technology, Engineering, Art, Math)

STEAM is an educational philosophy that seeks to balance the development of divergent and convergent thinking by integrating the arts with traditional STEM fields (Science, Technology, Engineering, Math). In the STEAM approach to learning, students engage in projects and experiments that reflect the transdisciplinary nature of real-world problem solving. Rather than focusing on the delivery and memorization of content as isolated facts or repetition of rote procedures, STEAM seeks to develop scientific and artistic habits of mind and the confidence to engage in self-directed inquiry by familiarizing students with the core practices of art and science in an open and exploratory environment. The STEAM investigations in this kit are designed to foster creative engagement by promoting individual agency and establishing meaningful connections to students' own lives.

For additional teaching resources visit www.colorsofnature.org

ART / SCIENCE OVERLAP

Both science and art seek to broaden our understanding of the world around us. Although art and science are often thought of as separate ways of knowing, they are similar in many important ways in principles and practice. Driven by curiosity, creativity and technique, both disciplines contribute new experiences, ideas, and technologies to society and create the foundation of knowledge from which future innovations emerge. The core practices of art and science reveal significant overlap as well: observing, questioning, experimenting, analyzing, and communicating are the means by which both disciplines generate and distribute new ideas and technologies.

CORE PRACTICES of ART and SCIENCE

Observing
Experimenting
Questioning
Analyzing
Describing
Communicating

ENGAGEMENT IN SCIENCE PRACTICE

Young children engage naturally in core science practices. They make observations and test and revise their predictions as they seek to understand how the world around them works (how high can I stack these blocks before they tumble?). But when science is presented in the classroom as isolated facts to be memorized, or procedural steps to copy, students can lose sight of their own capacity to question the world around them, test their ideas, and share their discoveries. Many students, especially girls and people from non-dominant groups, start to view science as rote, passionless, and uncreative. Students who have difficulty memorizing and repeating facts, or making connections to complex systems that don't feel relevant to their daily lives begin to disengage from science. Again, these STEAM investigations should emphasize developing familiarity with the practice and tools of scientific inquiry, rather than on memorizing content or achieving specific results.

ENGAGEMENT IN ART PRACTICE

Similarly, young children almost universally engage in art making. As they learn to handle and control their mark-making tools, the progress from simple scribbles to the development of symbols that represent their understanding of the world. As the complexity of the symbols increase, children begin to aim for realism (of proportion, form, lighting) in their representation.

Around age 9, as social awareness increases, children begin to shift their focus from the expressive pleasure of making art to the results of their work, especially in comparison to the work of their peers. Between age 10 and 13, children decide whether or not they are good at art (as opposed to whether or not they enjoy making art), and it is in this stage of development that many children cease to engage in art-making, believing they do not have the talent to produce "good" (realistic) results. These beliefs are often reinforced by peers and adults who similarly value conventions of realism in western art. When an adult claims "they can't draw," we automatically understand them to mean that they can't draw realistically, not that they can't move a pen across a piece of paper. With continued practice and instruction, nearly everyone can develop skills of realistic representation. Nevertheless, the following STEAM investigations should remain focused on the act of art making itself: an awareness of the opportunities that present themselves and the creative choices that are made in the course of artistic practice. The results of each activity are useful as a record of the process, but emphasis should be placed on the importance of observing, experimenting, and reflecting throughout the process of making.

INSTRUCTIONAL METHOD

We advocate for a STEAM approach that quiets the inner negative voice, focuses on open outcomes, and values student ideas and expression. Foundational to our approach are practices that promote identification with science and art, including the use of real science and art tools; connect science and art to everyday life; and offer students the chance to participate in authentic science and art practice.

Give students choices when possible. A sense of agency can increase identification with science.

Accept student responses as value-neutral.

Ask questions and encourage discussion and reflection.

Connect activities to everyday practices and student-relevant ideas.

GUIDING DISCUSSION AND REFLECTION

It is important to establish an environment that encourages imaginative speculation, or thinking outside the box. If students are conditioned to "take things seriously" during classtime, they might not be comfortable offering the creative or humorous answers that are often generated by divergent thinking.

The instructor should continue asking questions to lead the discussion beyond the point where students offer answers that they believe are "correct" or what they think the instructor expects to hear. This can be facilitated by the instructor's willingness to contribute their own playful ideas and follow up with questions that solicit deeper analysis:

What do this fly's eyes remind you of?

They remind me of a discoball!

What about them is like a discoball?

What does a discoball do to light?

What do you think the fly's eyes do to light?

How might this be useful for the fly?

ASKING QUESTIONS TO DEEPEN ENGAGEMENT

Each investigation in this kit provides:

A central question to focus the investigation, repeated in the header of each page.

Specific questions integrated with the procedural steps of the activity to prompt the discussion, *shown in italics for quick reference.*

Throughout the activity, the instructor should use open questions to guide observation, encourage experimentation, and prompt reflection.

Questions should aim to:

Expand upon an idea:
What else could you do with this? What else could this be for? What else could this mean?

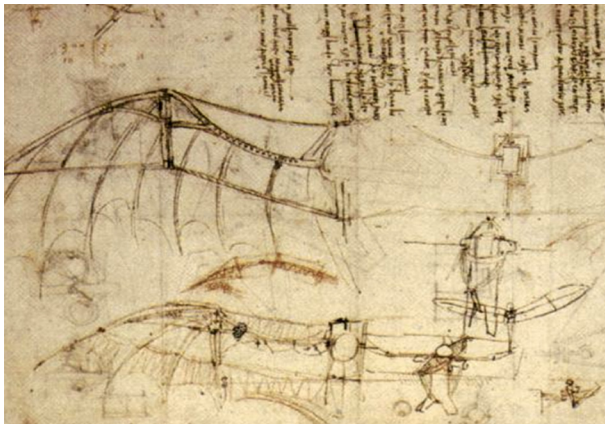
Draw attention to specific details:
What do you see? What texture? Color? Pattern?
What is different/similar between this and that?

Encourage synthesis with existing knowledge:
What does this remind you of?
Where have you seen something like this before?
What about this is different than where you saw something similar before?

NOTEBOOK EXTENSION *30 minutes*

Keeping a notebook is a common practice in both art and science. The notebook is a place to keep track of ideas, observations, measurements, sketches and other information relevant to the ideas the practitioner is exploring. It is a space that allows for informal musings and reflections alongside notes and data recorded for later reference. Each investigation in the Colors of Nature Kits includes suggestions on how to incorporate the notebook into the lesson.

Notebooks can be incorporated into numerous other classroom activities beyond these investigations, providing a private space for students to reflect on what they are learning and develop their ideas outside of the normal constraints of classroom assignments.



Part of a page from one of Leonardo Da Vinci's notebooks, showing a study of the bone structure of a wing, and ideas for the design of a flying machine.

MATERIALS

- Blank student notebooks
- Writing/ drawing tools (pens, pencils, etc.)
- Glue stick

INTRODUCTION

Discuss with students the various reasons why artists and scientists might keep notebooks and how it helps them study the world around them.

Why do artists and scientists keep notebooks?

Some examples include, but are not limited to:

- observe a subject more closely
- record observations when other methods of recording not possible or available at the time
- capture additional information such as measurements, notes, other observations
- keep a record of what was done, how data was collected
- think through and work out ideas and designs on paper before trying in real life

PREPARE NOTEBOOKS FOR USE

Discuss with students what information might be useful to include in their notebook, to assist with identification and use as a reference of their observations. At the very least, have students write their name on the inside cover, so missplaced notebooks can be returned to their owner when found.

What information might be important to include in the notebook?

Some examples include, but are not limited to:

- name
- contact information
- page numbers
- page titles
- table of contents
- dates of entries or observations
- measurements
- photos or other materials that can be glued in

GRADES:
4-6

TIME REQUIREMENT
60 minutes

SCIENCE STANDARDS (NGSS)

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

4LS1.1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

NATIONAL CORE ART STANDARDS (NCAS)

VA.CR.1.4: Brainstorm multiple approaches to a creative art or design problem.

VA.RE.8.4: Interpret art by referring to contextual information and analyzing relevant subject matter, characteristics of form, and use of media.

COLORS OF NATURE / KIT 3

HOW DOES COLOR HELP US UNDERSTAND THE LIVING WORLD AROUND US?

INVESTIGATION 1 / ADAPTIVE COLORATION: CAMOUFLAGE

HOW DOES COLOR HELP ANIMALS SURVIVE AND REPRODUCE?

OVERVIEW

In this activity, students explore why animals have the colors they do and consider how different coloration strategies help them survive and reproduce. Students then analyze the formal elements (shape, color, pattern and value) of animal camouflage and use their observations as a guide to design an effective camouflage pattern for a specific habitat.

1. Students review animal cards in groups to explore adaptive coloration.
2. Students analyze examples of animal camouflage.
3. Students pick a habitat for which they will design a camouflage pattern.
4. Using colored paper, scissors and glue, students design and create swatches of camouflage patterns for their chosen environment.
5. In groups, students evaluate each other's design solutions to determine what components are (and are not) effective for blending in with their habitat.

LEARNING OBJECTIVES

- *Students will be able to discuss and give examples of how various coloration strategies enhance a species' ability to survive and reproduce successfully.*
- *Students will analyze the formal elements of effective animal camouflage and apply their knowledge to create solutions to a design problem.*
- *Students will identify criteria for evaluating effective camouflage, and apply these criteria to the design of a camouflage pattern for a specific environment.*
- *Students will communicate about their design solutions.*

Photo by P. Teal Sullivan

INSTRUCTIONAL APPROACH

This investigation is designed to introduce students to the biological **function of color** in animal **survival and reproduction**. To foster engagement and identity, we advocate for the sharing and discussion of students' own relevant experiences with animal coloration and human uses of color, and for providing students with opportunities to make choices based on individual preference throughout the activity, so that they are active agents of their own inquiry. The instructor should facilitate student exploration through questions and prompts that encourage:

- *analysis of forms, colors, and patterns in animal coloration*
- *consideration of the costs and benefits of coloration strategies*
- *identification of formal elements that contribute to effective camouflage*
- *application of these formal criteria to the design and evaluation of a camouflage textile pattern for a specific habitat of students own choosing*

The instructor should accept all student answers as value neutral.

SCIENCE BACKGROUND

Why does the bee have stripes and the leopard have spots? Why is one frog brown, but another bright blue? Coloration is one example of the traits that influence animals' survival and reproduction. The remarkable array of colors and patterns we see are adaptations to the unique environments and specific conditions, such as food sources and threats, under which different species survive and reproduce. These **adaptive coloration** strategies range from colors and patterns that are hard to detect, to colors and patterns that are hard to miss. Conspicuous colors and patterns send obvious signals between species, such as warning predators of toxicity, or within species, such as advertising reproductive fitness to attract potential mates.

Coloration that resembles the surrounding environment, called **camouflage**, helps an animal avoid detection. This strategy enhances the survival of prey by concealing them from predators. It also helps predators avoid detection when hunting prey. A common misconception among students is that animals "choose" their colors in order to gain a selective advantage. Instead, camouflaged individuals are more likely to survive and reproduce, passing on these traits to their offspring (i.e., natural selection). Similarly, animals that are best able to attract mates also are more likely to reproduce successfully. Over time, selection pressure on individuals results in the colors we see today across different species.

ART BACKGROUND

Professional artists who had observed the variety of camouflage as a survival strategy in nature were some of the first advocates for the use of camouflage for military purposes, where avoiding detection is a tactical advantage. Today, camouflage patterns find applications far beyond the military: biologists use camouflage to observe wild animals at close range without disrupting behavior; hunters use camouflage to avoid detection by prey; and artists and designers continue to explore the changing meaning of concealment in an era of ubiquitous surveillance and big data. A recent experiment involved designing camouflage to confuse face-recognition technologies by creating a pattern of face-like features that can prevent the software from detecting a "real" face.

A formal analysis of camouflage involves discussing some of the basic elements of art and design: **shape**, **color** and **pattern.** **Shape** refers to the form of a space enclosed by a boundary, such as a line or a contrasting color. Shapes can be geometric (square, triangle, circle, ellipse, hexagon, etc.) or organic (these shapes are irregular, complex, and often asymmetrical). **Color** refers to the wavelengths of light we see reflected off of a surface. Color can be described both in terms of hue (the name of the spectrum color, such as red, orange, yellow, green, blue, violet) and value (lightness or darkness, such as light blue or dark blue, with white being the lightest value and black the darkest). **Pattern** refers to the repetition of similar shapes.

KIT MATERIALS

- **Animal coloration cards**
- **Habitat background cards**
- **6 x 6" colored origami squares. The pack should contain a wide variety of solid colors.** *(4 sheets per student will be used, but have enough on hand that students can choose a color scheme, e.g. about 8 squares available per student)*
- **Scissors** *(1 per student)*
- **Glue sticks** *(1 per student)*
- **Tracing paper** *(1 pad 9x12", or roll)*
- **Camouflage fabric swatches** *(3 different patterns)*

ADDITIONAL SUPPLIES

- **Scrap paper** *(newspaper or copy paper, to protect tables from glue)*
- **Pencils** *(1 per student)*
- **Notebooks** *(if applicable)*

SETUP *5 minutes*

Assemble materials.

INVESTIGATION: *55 minutes*

WHY DO ANIMALS HAVE THE COLORS THEY DO?
15 min

1. Engage the students by asking them to share what their favorite animal is.

What are its colors?
Why might it be colored the way it is?

Accept all answers as value neutral. Consider using think-pair-share to encourage all students to think about the question and have a chance to participate.

2. Divide students into groups of 4 or 5. Divide and distribute the Animal coloration cards to each group. Have students review the cards and come up with ideas for why each animal might be colored the way it is. Circulate among the groups, facilitating thinking by asking questions:

What do you notice about the color of the habitat?
What advantage might that color give an animal

3. As students discuss coloration, ask students to group animals that they think have similar reasons for being colored the way they are.

4. Ask students to share their ideas with the group. Students can choose a representative from the group to share group ideas with the whole class, if desired.

5. As students share, collect ideas on the board and ask students for suggestions for grouping similar color functions.

Many students are familiar with some categories of adaptive coloration but may need to be prompted with further questions to come up with others. While there are numerous strategies and types of adaptive color, the main categories of adaptive color are as follows. Some animals employ more than one color strategy.

Camouflage (colors and shapes that blend into the environment). Ask:

How does blending in with its environment help an animal survive? Reproduce?

Warning (conspicuous colors and patterns such as red, white, yellow, black, that warn predators of toxicity). Ask:

How might bright, high-contrast (light next to dark) warning colors help an animal survive? Reproduce?

Mimicry (warning colors on non-poisonous animals that send a false signal and "trick" predators). Ask:

How do bright warning colors help a non-poisonous animal survive? Reproduce?

Display (conspicuous colors and patterns that attract a mate). Ask:

How do bright display colors help an animal survive? Reproduce?

WHAT MAKES A CAMOUFLAGE PATTERN EFFECTIVE?

5 minutes

1. Now, ask students to select the animal coloration cards that represent camouflage and from them choose one example they particularly like.

2. Have students carefully examine their chosen animal's coloration and its habitat, and write down what they notice about the animal's coloration that helps it blend with its environment.

3. Prompt students to think about the formal elements of camouflage: shape, pattern and color.

a. **Shape:** Have students offer a list of shapes and draw them on the board (triangle, circle, square, oval, star, etc.). What are some examples of shapes you see in your animal camouflage (if they can't be named, they can be described or drawn)?
b. **Pattern:** What is a pattern (repeating shapes)? What are some examples of pattern in animal camouflage?
c. **Color:** What are some examples of colors that animals use for camouflage? How do the colors relate to their habitat?

4. Now, based on their analysis of the animal cards, ask the whole group to create a list of criteria for effective camouflage. Accept all ideas and write them on the board. Students can revise this list if necessary after they create and evaluate their own camouflage patterns.

HOW DO HUMANS USE CAMOUFLAGE?

5 minutes

1. Ask students to consider that humans are animals too, but we are able to adjust our "coloration" by changing the way we dress. Ask students to share the reason they picked the colors of the clothes they are wearing today.

Note: in order to avoid introducing or confirming the misconception that animals also choose their colors, engage in a short discussion about how human camouflage differs from the examples of animal coloration they just explored. Ask:

Do these animals choose their color?
Why are the animals colored this way?
How is human camouflage different from animal camouflage?

2. Now that students have examined various coloration strategies, prompt students to consider how humans have used their observations of camouflage in nature to create fabrics they can wear to blend in with a variety of environments. Prompt students to consider:

How is camouflage useful to people? In what situations might we want to use camouflage?

3. Show students the camouflage fabric swatches and ask them what environment they might use each pattern in.

4. Now, show examples of camouflage patterns in their intended environments. We have provided these examples as a resource at: http://www.colorsofnature.org/camouflage/. As a group, analyze the formal elements (shape, pattern and color) of the camouflage designs:

What part of the environment does THIS specific color blend with?
What part of the environment does THIS color blend with?
What shapes do you see? What shapes repeat?
How do the shapes and pattern relate to the environment?
Why does it matter to use a range of colors? shapes?

CAMOUFLAGE DESIGN *20 minutes*

1. Let students know that they will now use their analysis of effective camouflage in nature to design their own camouflage fabric to be worn in a specific environment of their choosing. Students will make a "swatch" (a small example of the fabric pattern) out of colored origami paper by picking a background color and 3 additional colors from which they will cut out shapes to apply to their background.

2. Have students choose an environment they like from the habitat background cards. They will be designing a camouflage fabric to be worn in this environment.

> *Note: If desired, habitats can also be pulled from other sources, such as books, magazines, or online. Students could also select a real environment adjacent to the classroom on which to base a camouflage pattern.*

3. Ask students to formally analyze their chosen habitat:

> *What shapes do you see?*
> *What patterns do you see?*
> *What colors do you see?*

The design below was inspired by the habitat above.
Photo by P. Teal Sullivan

4. In their notebooks or on a piece of paper, have students list the dominant colors and draw the main shapes they observe in their habitat.

5. To facilitate analysis of shapes in their environment, pass out tracing paper. Students can overlay their habitat card with the tracing paper and trace the main shapes they see. Suggest that students focus on the shapes that stand out to them, or that they see repeating in the environment (as opposed to tracing the whole image).

6. When students are finished, have them choose 4 colors of paper based on their analysis of the habitat. Students will use one color as a background, and cut out shapes from the three other colors to paste to the background in order to make their camouflage pattern "swatch".

7. Distribute scissors and glue sticks to each student, along with a sheet of scrap paper (newspaper, used printer paper, etc.) to be used as a protective backing while they apply glue to their shapes.

8. Have students use their habitat analysis drawings as a formal reference and cut out shapes from three of the colored papers they chose, saving one sheet for the background.

9. Then, have students arrange and glue their shapes to the background paper, cutting out and adding more shapes as needed in order to achieve a pattern that "blends" with their habitat. Students can use scissors to trim shapes that hang over the edge of the background paper.

DESIGN REVIEW *10 minutes*

1. When students have finished creating their camouflage designs, divide into small groups (or table groups) of 4 or 5.

2. Have students present their camouflage design to their group, explaining their reasoning for the shapes and colors they used and how those help the design blend with their habitat. You can write guiding questions on the board to facilitate small group discussion:

What shapes did you see in your habitat?
What shapes did you use for your camouflage?
What colors did you see in your habitat? Which colors worked the best for the camouflage?
What would change if you designed another camouflage pattern for this environment?

To foster STEAM thinking, encourage students to reflect on their choices in a non-judgmental way. Guide students away from evaluating their design solutions as good/bad or right/wrong; instead, prompt students to notice that there are multiple possible design solutions to a given problem and that the process of design is one of trying out solutions, evaluating them, and then refining them. Asking the following questions can help students think about how to optimize their design solutions:

What works? Why?
What could be improved or changed?

3. When each student has had a chance to present their work, ask the groups to reconsider the list of criteria for effective camouflage that they made as a class earlier. Now that they have had experience designing a camouflage pattern, ask each group to offer any revisions or additions to the list based on their observations of what was and was not effective.

NOTEBOOKS

Students can paste their camouflage design into their notebooks and reflect on their design experience. Prompt them to write about:

Why is camouflage useful? To animals? To humans?
What are the criteria for effective camouflage?

Students come up with a wide variety of camouflage designs. Photo by P. Teal Sullivan

EXTENSION: DESIGN AND REFINE *30-60 minutes*

This extension gives students the opportunity to explore design as an iterative process of evaluating and refining solutions to a problem. In this activity, students will create variations on their camouflage patterns for a single habitat in order to optimize their design.

NGSS

3-5-ETS1-2. *Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.*

NCCAS

VA.CR.1.4: *Brainstorm multiple approaches to a creative art or design problem.*

VA.CR.3.4: *Revise artwork in progress on the basis of insights gained through peer discussion.*

1. After evaluating their first camouflage patterns, have students make a note of what worked and what could be improved to create a more effective camouflage with their habitat.

2. Now, let students know they will be creating a new design based on their analysis of their first camouflage pattern (what worked well and what could be improved).

More examples of designs inspired by specific habitats.
Photo by P. Teal Sullivan

3. Have students pick 4 new (or the same) colors of paper, and create another camouflage pattern for their habitat.

4. When finished, have students present their two design swatches in small groups. Have the groups respond to the camouflage options:

Does one pattern blend into the habitat more effectively than the other?
What specifically (shape, color, pattern, value) makes it more effective?
Based on what works, how could this pattern be further improved?

5. If time allows, students can create another iteration of their camouflage pattern, incorporating ideas from their peers and their own reflection to further improve their design.

6. As a whole group, have students share what they discovered in the process of refining their camouflage designs.

What changed about your design from the first swatch to the second or third?
What did you discover in this design process that could be applied to designing a camouflage for a different habitat?

OTHER RESOURCES

ELEMENTS OF ART:
Understanding Formal Analysis: The Elements of Art
2011. The J. Paul Getty Museum, Los Angeles
https://www.getty.edu/education/teachers/building_lessons/elements_art.pdf
(1 page PDF handout)

CAMOUFLAGE:
Camouflage pattern examples:
http://www.colorsofnature.org/camouflage

Adaptive Coloration in Animals
Cott, Hugh B. 1940. Methuen, Oxford University.
https://archive.org/details/adaptivecolorati00cott
(Public domain, available free in multiple digital formats)

Warpaint: the Story of Camouflage
BBC broadcast, 30 minutes audio
http://www.bbc.co.uk/programmes/b00768wm

HyperFace Camo
https://ahprojects.com/projects/hyperface/

Camouflage is a ubiquitous strategy in nature. This parrot blends in seamlessly to its background.

GRADES:
4-6

TIME REQUIREMENT
60 minutes, Investigation 2
55-90 minutes, Investigation 3

SCIENCE STANDARDS (NGSS)

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

NATIONAL CORE ART STANDARDS (NCAS)

VA:Re7.2.4 Analyze components in visual imagery that convey messages.

VA:Re7.1.5 Compare one's own interpretation of a work of art with the interpretation of others.

MA:Cr1.1.1.4 Conceive of original artistic goals for media artworks using a variety of creative methods, such as brainstorming and modeling.

MA:Cr2.1.1.5 Develop, present, and test ideas, plans, models, and proposals for media arts productions, considering the artistic goals and audience.

COLORS OF NATURE / KIT 3

HOW DOES COLOR HELP US UNDERSTAND THE LIVING WORLD AROUND US?

INVESTIGATION 2 / ADAPTIVE COLORATION: UV SIGNALS

HOW DOES UV COLORATION HELP SOME PLANTS AND ANIMALS SURVIVE AND REPRODUCE?

INVESTIGATION 3 / COMMUNICATING THE INVISIBLE: STOP MOTION ANIMATION

HOW CAN WE DESIGN EFFECTIVE MODELS TO COMMUNICATE THE ROLE OF UV SIGNALS IN SOME PLANTS' AND ANIMALS' SURVIVAL AND REPRODUCTION?

OVERVIEW

This two-part investigation introduces students to an adaptive coloration strategy that is common in plants and animals: ultraviolet (UV) signals that are seen only by animals with eyes that can detect UV. Humans and many other animals cannot see these patterns because UV light falls outside the visible spectrum our own eyes detect.

In the first part of the investigation, students explore examples of animals that see different colors than we do, including in the ultraviolet (UV) part of the electromagnetic spectrum. Using UV flashlights, students examine how the world might appear differently to animals that can see UV, as well as discover UV "secret signals" that communicate information.

In the second part of the investigation, students explore how to communicate a phenomenon that is normally invisible to us through the design of a stop motion animation that models the function of UV "secret signals" in the survival and reproduction of certain plants and animals.

LEARNING OBJECTIVES

- *Students will be able to discuss and give examples of how various coloration strategies enhance an individual's ability to survive and reproduce successfully.*
- *Students will explore how some plants and animals use UV coloration to send information to other animals that are capable of visually detecting UV signals.*
- *Students will design an animated model to communicate how a plant or animal uses UV coloration to send visual signals to other animals as part of its survival strategy.*
- *Students will communicate about their design solutions.*

INVESTIGATION 2 / ADAPTIVE COLORATION: UV SIGNALS

How does color help animals survive and reproduce?

INVESTIGATION 3 / ANIMATION DESIGN

How can we design effective models to communicate the role of uv signals in some plants' and animals' survival and reproduction?

INSTRUCTIONAL APPROACH

This two-part investigation is designed to further elaborate the **function of color** in plant and animal **survival and reproduction** by exploring **ultraviolet coloration** in plants and animals. To foster engagement and identity, we advocate for the sharing and discussion of students' own relevant experiences with animal coloration and animal vision that differs from our own, and for providing students with opportunities to make choices based on individual preference throughout the activity, so that they are active agents of their own learning.

In the second part of the investigation, students are challenged to **communicate** the role of **UV "secret signals"** in the survival and reproduction of a plant or animal of their choice by designing a stop motion animation. The instructor should facilitate student exploration and idea development through questions and prompts that encourage:

- *consideration of the costs and benefits of different coloration strategies*
- *consideration of how animals might see differently than humans*
- *experimentation with materials and techniques for communicating through visual means a phenomenon that is normally invisible to humans*

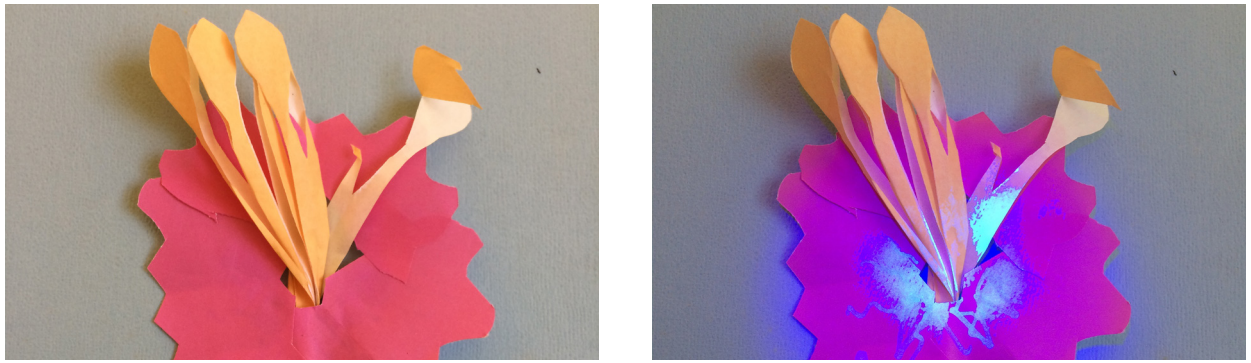
The instructor should accept all student answers as value neutral.

SCIENCE and ART OVERLAP

Communication is a **core practice** of both science and art. Communication allows ideas and results to be shared, evaluated, and ultimately extended to produce new knowledge. There are many ways to communicate information: through discussions, writing, equations, graphs, charts, models and drawings, and more. Scientists and artists alike rely on effective communication, and the ability to interpret and derive meaning from the communications of others, in order to advance and innovate.

Developing and using models is also a **core practice** of both art and science. A model is a representation (often simplified) of a system that aids in understanding the system (often complex or unavailable for direct observation). For example, an astrophysicist might make a computer model that simulates the surface of the sun in order to examine and evaluate ideas about the motion of distant, super-hot particles, whereas a painter might make a sketch to understand and evaluate their compositional ideas before applying them to a large canvas. An architect might make a scale model of a house to work out issues before construction, and a meteorologist might use a model of today's weather to predict sun or rain tomorrow.

In this investigation, students will use stop motion animation to model the behavior of an animal in response to information that is normally invisible to us: UV signals. To evaluate the effectiveness of their communication, students will present and respond to each other's' animated models, providing feedback to the creators for potential refinements.



In this paper model, the flower looks different under normal incandescent light (left) than under UV light (right). Photo by P. Teal Sullivan

SCIENCE BACKGROUND

Adaptive coloration is an example of the various traits that influence plant and animal survival and reproduction. Some coloration strategies, such as camouflage, function by making an animal difficult to detect, while other coloration strategies are meant to be easily seen. These strategies, using bright and high-contrast colors that stand out from the surrounding environment, are meant to send a **signal**. In the case of **warning colors**, the signal tells potential predators "I'm dangerous," whereas **mating display colors** function to attract potential mates. Humans can see the black and yellow warning stripes of a stinging bee, and the brilliant display colors of a male peacock, but many plants and animals have color signals that are invisible to us, sometimes in conjunction with colors visible to humans.

The human eye is capable of detecting only a small range of wavelengths in the electromagnetic spectrum. We call this the **visible spectrum:** the colors of the rainbow from red through violet. Other animals have eye structures that detect different parts of the electromagnetic spectrum and therefore see the colors of the world quite differently than we do. Just beyond visible violet is **ultraviolet light (UV)**, which humans cannot see, but many other species can. Because of this, the adaptive coloration strategies of many plants and animals include UV markings, providing colorful signals that are visible only to species that can see UV.

UV signals communicate a variety of information between a sender and receiver. Plants that are pollinated by insects with UV vision often have UV **nectar guides**, or patterns that help direct their pollinators towards the center of the flower. Some fish are known to have distinct UV facial markings that help them with **species recognition**, allowing them to distinguish their own species from other non-competitive reef fish when defending their territory. **Mate selection** by females in some species of butterflies and birds has been shown to be influenced by the qualities of the UV markings on males.

Although humans cannot see UV light, there are other ways we can detect its presence in plant and animal coloration. Specialized camera equipment can detect UV light, showing us the shape and location of the UV coloration in photographs. Another method of detection is the **spectrometer**, a tool used to measure wavelengths of light. By measuring a surface with a spectrometer, it is possible to determine whether or not that surface reflects UV light and at what intensity.

INSTRUCTORS NOTE:
If we can't actually see UV, why do "blacklights" (UV-emitting light sources) make some things glow? An important distinction here is UV reflectance versus UV fluorescence. When UV light reflects off a surface, animals that detect UV see it as a distinct color, the way that we see the color red when red wavelengths of light reflect off a surface. When we use a "blacklight" (usually a combination of UV wavelengths and visible violet wavelengths that help us detect that it is "on") in low ambient lighting, certain colors will appear to glow. This is not actually UV reflectance, but UV fluorescence, a phenomenon whereby a pigment absorbs UV light and re-emits that light as a slightly longer wavelength in the visible spectrum. Fluorescent pigments are common in plants and animal coloration, but not all UV signals are fluorescent: some pigments simply reflect UV light.

While "blacklight" is useful to demonstrate how shapes and patterns normally invisible to us can be detected using special tools, it does not actually show us how the world looks to an animal that can see reflected UV.

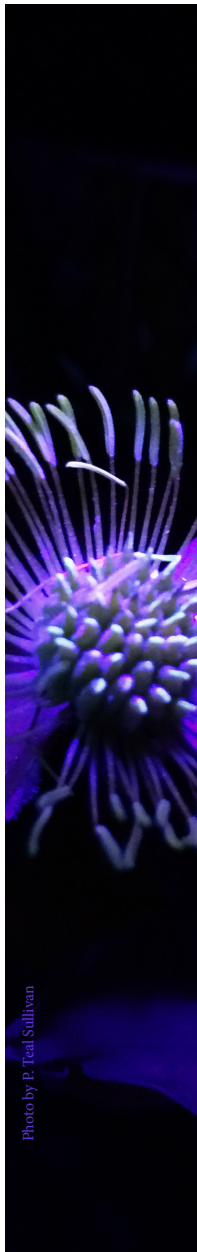


Photo by: Teal Sullivan

ART BACKGROUND

Humans have long employed the arts to address the particular challenge of communicating knowledge of the invisible. Artists do this by using visual symbols, such as lines, shapes, and colors, to represent larger ideas. The meanings communicated by visual symbols are not fixed, and ultimately depend on the interpretation of the receiver who is influenced by personal, historical, and cultural factors.

How do we know if we are **communicating** effectively if there is no fixed meaning to the symbols we use? In art and design this issue is addressed through a system of audience or user feedback. By **presenting** work to an audience and collecting their **responses** and interpretations, artists and designers can determine whether their intended meaning has been adequately conveyed or whether refinements must be made.

Stop motion animation is a technique that has been in use since the invention of moving pictures in the late 1800s. It involves creating a series of photographs in which objects are moved slightly between each shot so that, when the pictures are viewed in rapid succession, the objects appear to move on their own. Today, we can use specialty software programs to facilitate the production of stop motion animations as a one form of visual communication.

In this stop-motion scene, the artist uses a blacklight and UV ink to make the image on the left appear differently (UV image on right). Photo by P. Teal Sullivan

INVESTIGATION 2 / ADAPTIVE COLORATION: UV SIGNALS

How does color help animals survive and reproduce?

INVESTIGATION 3 / ANIMATION DESIGN

How can we design effective models to communicate the role of uv signals in some plants' and animals' survival and reproduction?

KIT MATERIALS

- **UV secret signals cards**
- **UV flower photos**
- **Multi-colored construction paper** *(10-color pack, 240 sheets)*
- **Blank index cards 5x8"** *(1 per group of 2 students, with extras available)*
- **Multicolor felt tipped markers** *(1 pack per 2 students)*
- **UV "invisible" ink** *(1 two-oz jar)*
- **Small cups or jars to distribute ink** *(1 per 2 students)*
- **UV flashlights** *(1 per 2 students)*
- **Variety pack small round paintbrushes** *(1 per 2 students)*
- **Scissors** *(1 per student)*
- **Glue sticks** *(1 per student)*
- **Craft feather bundle** *(1 per 2 students)*
- **UV reflective butterfly wings** *(1 per 3-4 students)*

ADDITIONAL MATERIALS

- **Pencils** *(1 per student)*
- **Scrap paper** *(newspaper or copy paper, for protecting tables from glue)*
- **Fresh flowers** *if available/ other UV fluorescent items around classroom (determine with UV flashlight)*
- **Tablet or other iOS/ Android device with camera and Stop Motion Studio App** *(free for iOS or Android) (1 per group of 3-4)*
- **Notebooks** *(if applicable)*

SETUP *5 minutes*

Assemble materials. Check batteries for charge in blacklights and cameras. Pull shades, or cover windows if possible using cloth or black garbage bags (some ambient light is ok, but the blacklights work best in a dark environment).

INVESTIGATION 2
UV SECRET SIGNALS: *55 minutes*

DOES THE WORLD LOOK THE SAME TO OTHER ANIMALS? *15 min*

1. Engage students by asking them to share their knowledge or ideas about how the world looks to other animals.

Does the world look the same to other animals as it does to us?

What are some examples of animals that see differently than we do?

What is different about their vision that allows them to see this way?

Collect student ideas about variations in animal vision on the board. Many students are familiar with the idea that snakes can detect their prey using infrared sensors, or that dogs can't see all colors we do (they only have two color cones in their eyes, while we have three). Some students might be familiar with the idea that some animals can see ultraviolet light.

2. Now, have students gather in small groups (3-4 students) and hand out the UV flashlights, feathers and butterfly wings (and flowers if available) to each group.

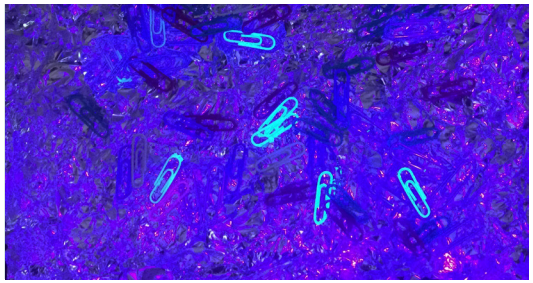
SAFETY NOTE: Let students know that UV can be harmful and they should not aim the flashlight at anyone's eyes or look directly at it.

3. Turn off the overhead lights and ask students to examine the feathers and flowers and other things around them.

What do you notice?
What stands out, or attracts your attention?

4. After a few minutes of exploration, turn the overhead lights back on and ask students to notice how the visual environment changes.

Do the same things attract your attention under white light as UV?
Or do different things stand out?



(above) Everyday objects in the classroom sometimes "glow" under a blacklight (below). Photo by P. Teal Sullivan

FUNCTIONS OF COLOR AND SECRET SIGNALS

15 minutes

1. Distribute the animal coloration and UV flower photos to the small groups.

2. Have each group brainstorm the functions of color for each card. How does the habitat relate to the colors of the organism? If the students have already reviewed the coloration cards in the previous investigation in this kit (Adaptive Coloration: Camouflage), this can be a brief review and they can skip to step 4.

3. Have the whole group share ideas about functions of color and create categories:

a. ***Camouflage*** *(colors and shapes that blend into the environment)*
b. ***Warning*** *(conspicuous and often contrasting colors such as red, white, yellow, black, that warn predators of toxicity)*
c. ***Mimicry*** *(warning colors on non-poisonous animals that send a false signal and "trick" predators)*
d. ***Display*** *(conspicuous colors and patterns that attract a mate)*

4. Ask students to select the cards that represent display coloration and set aside the rest. Prompt students to consider how display coloration helps this plant or animal survive and reproduce. Prompt students to discuss both the costs (more conspicuous to predators/ prey) and benefits (more attractive to mates) of display coloration.

5. Now, show students a graphic of the electromagnetic spectrum, and have them identify the part of the spectrum that is visible to humans. Googling the electromagnetic spectrum will provide a number of pictures that show the visible spectrum vs. the parts of the spectrum that are not visible to humans, such as UV and infrared.

6. Let students know that some species of animals can see UV light, including many birds, insects, spiders, reptiles and fish. Ask students to think about their exploration with the UV flashlights.

How might the world look differently to animals that can see UV?

7. Considering what they know about functional colors, ask students how UV coloration might help a plant or animal survive or reproduce? Collect student ideas on the board. (For example: UV markings enhance display pattern, and only some animals can see these markings). The connection between what animals see and how animals and plants look (e.g., their colors) can sometimes be a difficult one for students to make. Consider facilitating small group discussions around this idea, using questioning prompts, to make sure that students grasp this core idea.

8. Show students UV secret signals cards.

9. Let students know that it was only in the past century that people discovered some animals could see UV. Tell students that scientists are still finding new examples of UV signals using special tools like a spectrometer or special filters and sensors on cameras that detect UV reflectance and can capture an image of it.

INVESTIGATION 2 / ADAPTIVE COLORATION: UV SIGNALS

How does color help animals survive and reproduce?

INVESTIGATION 3 / ANIMATION DESIGN

How can we design effective models to communicate the role of uv signals in some plants' and animals' survival and reproduction?

COMMUNICATING THE INVISIBLE

15 minutes

1. Let students know that they will be designing a stop motion animation to communicate how UV signals enhance the survival or reproduction of a plant or animal. Students will get to choose from several scenarios. It is important to let students select a scenario that they like in order to facilitate ownership and learner control over the task.

2. Divide students into groups of 2-3 (two will facilitate more engagement in the task). Distribute the UV signals cards and ask students to spend a few minutes reviewing the organisms and the role of UV signals in their survival or reproduction.

3. Ask students to consider how a scientist who studies UV signals might communicate their findings to other people who can't actually see UV themselves (for example with writing, diagrams, UV photographs, etc.). Collect student ideas.

4. Prompt students to think about how they could represent the change in behavior of an animal in response to seeing a UV signal? And how could they best represent how this signal benefits the survival and reproduction of the plant or animal that is sending the UV signal?

5. Show example of stop motion animation to give students an idea of the outcome (Visit colorsofnature.org and look for the link to the stop motion animation example).

6. With the remainder of the period, have the groups brainstorm a scenario to animate that communicates how their organism uses UV signals to help it survive or reproduce.

INVESTIGATION 3

ANIMATION DESIGN: *55 minutes minimum,but allow up to 1.5 hours if possible*

1. Divide students into their working groups from investigation 2 (they will already have chosen a UV signal card and brainstormed a scenario to animate).

2. Distribute index cards and instruct each group to make a storyboard for their animation. A storyboard is a visual outline of key moments in the animation. Have students divide the index card into a grid of 10 squares and quickly sketch out the action that will occur in each scene, like a cartoon. These do not need to be elaborate drawings, just reference points to guide the production. The final animation will be around 10 seconds long, so it's best to keep the story simple!

STORYBOARD EXAMPLE

3. Using the construction paper, scissors and glue, have students create backgrounds for their scenes and the characters that will appear in the story. Students should use their storyboard as a guide to the components and characters that will be needed for each scene.

4. Using a brush and the invisible UV ink, students can add the UV signals to their construction paper characters as needed. These can be made visible using the UV flashlight when filming.

5. To animate the scene, have students move the characters across the background, taking a picture each time.

6. Use tablets or other iOS/Andriod devices with cameras and the Stop Motion Studio app (or digital cameras and iMovie) to capture each image and create the animation. (While students are often able to complete this task easily, we have provided further step-by-step instructions are in the resources section of colorsofnature.org).

INSTRUCTORS NOTE:
If cameras and animation software are unavailable, students can still explore designing a graphic representation of their organisms' UV signal by using their story board as the basis for creating a finished comic strip. UV ink could be added to the appropriate panels and the comic strip could be presented with a blacklight flashlight for viewing.

FILM FESTIVAL

Allow 5 minutes per group, if possible

At the end of the period, have students present their animations and tell the class about their creative choices in representing the function of their chosen organisms UV signal as a coloration strategy. One possibility would be to upload all animations onto the teacher's computer and have students present as they are shown on a projector. If a projector is not available, another option would be to divide the class in half and have one half of the class circulate to view presentations on the iPads. The class would switch roles after the first group is finished.

Have students describe their animation and answer:

How does your organism use UV signals as part of their coloration strategy?

How does this UV signal help your organism survive or reproduce?

Ask the class to give constructive feedback to the creators, considering:

In what ways does the animation effectively communicate the organisms' UV signal and how it enhances survival or reproduction?

How did the creators' choices of materials or animation techniques show the UV signal?

What could be changed about this animation to better communicate the function of the UV signal and how it helps the organism survive or reproduce?

Many insects can see UV light because of cone cells in their eyes that differ from those of humans.

APPENDIX G

Admissions Policy and Procedures

Pearl Creek STEAM Charter School

Nondiscrimination Statement

The Pearl Creek STEAM Charter School is committed to fostering a learning and working environment that is free from discrimination and harassment. PCSC prohibits discrimination against any individual as defined in the FNSBSD Policy on Nondiscrimination. The school ensures equal access and opportunities regardless of race, ethnicity, color, religion, creed, sex, gender identity, gender expression, sexual orientation, age, national origin, physical or mental disability, genetic information, marital status, including changes in marital status, pregnancy, parenthood, veteran status, or any other characteristic protected under local, state, or federal nondiscrimination laws.

Participation in this program is voluntary; no student is required to attend.

No student shall be denied participation based on a disability or special needs. This policy applies to all matters involving staff, students, contractors, the public, educational programs, facilities, services, and activities, as well as individuals and entities with whom the school conducts business.

This policy aligns with federal and state nondiscrimination laws, including but not limited to Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA).

Admission of Students with Special Needs

Pearl Creek is committed to providing an inclusive learning environment and will admit students with special needs in compliance with state and federal regulations. Students with Individualized Education Programs (IEPs) or 504 plans will be accommodated as necessary.

Admission Policies and Procedures

Admission Process:

1. In order for applicants to familiarize themselves with PCSC's philosophy and criteria, the prospective families will be encouraged to attend an orientation during the lottery application process.
2. Parent(s) or guardian(s) will read, complete, and sign the PCSC application.
3. If more students apply than can be accommodated within a grade level, applicants will be drawn by lottery for admission.

Admission Criteria:

All parent(s) or guardian(s) who enroll students in PCSC will be required to review and agree to the Student Handbook as well as to contribute volunteer hours to support the day-to-day operations of PCSC. Flexible volunteer opportunities will be offered.

In the event a family is unable to volunteer, a “Volunteer Bank” will be established. Families who are able to volunteer excess hours can donate to the Volunteer Bank for others to draw from if necessary. Organizations who donate time will have their hours donated to the Volunteer Bank as well.

Recruitment

Recruitment is primarily conducted through our school's website www.pearlcreeksteamschool.com. PCSC will implement search engine optimization to make it easier for families to find our website. We will actively use social media, which will be monitored daily, updated frequently, and will provide quick responses to public inquiries. Additionally, PCSC will post flyers around town and utilize word-of-mouth to recruit students.

APPENDIX H

Weighted Lottery Policy

Pearl Creek STEAM Charter School

Purpose

Pearl Creek STEAM Charter School (PCSC or Pearl Creek) is committed to providing a high-quality, inclusive, and innovative STEAM (Science, Technology, Engineering, Arts, and Mathematics) education. To ensure that the school serves its community in a manner aligned with its foundational principles, PCSC utilizes a weighted lottery system for student admissions. This system takes into account specific preferences to prioritize key groups of applicants while maintaining fairness and transparency.

Enrollment at PCSC is voluntary. As per A.S. 14.03.265(b), the school shall strive to enroll all eligible students who submit a timely application. If more students apply than there is space available, a lottery will be conducted. All students who are eligible to attend the Fairbanks North Star Borough School District (FNSBSD) are eligible to apply to PCSC.

Admissions Criteria and Preference Categories

For purposes of the first operational year, existing students attending Pearl Creek Elementary School in 2024-2025 will be treated as returning students of PCSC and will be enrolled if they are eligible and apply. In subsequent years all students who have previously been enrolled at PCSC are automatically re-enrolled in the program. Parents or guardians are expected to notify the school of any change in enrollment plans, prior to the lottery, for the upcoming year. PCSC will then give preference to applicants based on the following categories, with the order of preference reflecting the school's commitment to its community and stakeholders:

1. *Siblings of Existing Students*
    - Applicants with a sibling currently enrolled at PCSC will receive the highest priority in the lottery.
    - A "sibling" is defined as a student who shares at least one biological or legal parent or guardian with a current student at Pearl Creek.
2. *Children of Pearl Creek Staff*
    - Children of current Pearl Creek staff will receive priority after category (1).
    - This priority applies to children of full-time and part-time staff employed at the school.
    - Children or grandchildren of founding members with at least 40 hours of volunteer time invested during the founding of PCSC.
    - A "founding member" is an individual who dedicated time and effort to the initial development of PCSC until the first instructional day of the first year of operation. This person or group developed and submitted an application for the PCSC to the state board. A log of time and effort should be provided to verify "founding member" status.
3. *Students Residing in the 2024-2025 FNSBSD Attendance Boundary Area*
    - Students residing within the 2024-2025 school year attendance boundaries for Pearl Creek Elementary identified by the FNSBSD will receive priority after categories (1) and (2).
4. *Title I or Migrant Students*
    - Applicants eligible for Title I services or who are part of the migrant education program will be given priority after categories (1), (2), and (3).

Lottery Process

1. *Weighted Lottery System*
    - All eligible students who submit a timely application will be enrolled.
    - If there are more applicants than space available, then PCSC will conduct a weighted lottery to determine admission. The lottery process will prioritize students based on the preference categories outlined above.
    - For each category, applicants will be placed into a separate pool based on their priority. Within each pool, applicants will be selected through a random drawing.
    - The selection process will be overseen by the APC Committee to ensure fairness and transparency.
2. *Lottery Procedure*
    - Applications will first be reviewed to determine which category each applicant qualifies for (e.g., sibling, child of staff, APC member, etc.).
    - The lottery will begin with the highest priority group and proceed down the list in order of preference.
    - If there are more applicants than available spots in a category, a random drawing will be conducted to select students for admission. Students not selected will be placed on a waiting list, ranked by the order in which they were drawn.
    - Lottery drawings may be completed manually or electronically at the discretion of the APC.
3. *Wait List*
    - Any applicants not selected in the lottery will be placed on a waiting list in the order their names were drawn within their respective priority group.
    - If a vacancy occurs during the school year or in subsequent lotteries, students from the waitlist will be contacted, starting with those in the highest priority group.

Notification and Enrollment

- All applicants selected in the lottery will be notified by the APC deadline.
- Families must confirm their acceptance of the offer per APC deadline. If no confirmation is received by the deadline, the offer will be rescinded, and the next student on the waiting list will be offered the available spot.

Conclusion

This weighted lottery policy reflects Pearl Creek STEAM Charter School's commitment to fairness and supporting the needs of our community. By prioritizing the above-listed key stakeholder groups, we aim to foster a school environment that serves the interests of our community and promotes access to high-quality STEAM education.

APPENDIX I

Projected Budget

Pearl Creek STEAM Charter School

Appendix I

Pearl Creek STEAM Charter School

Financial Summary

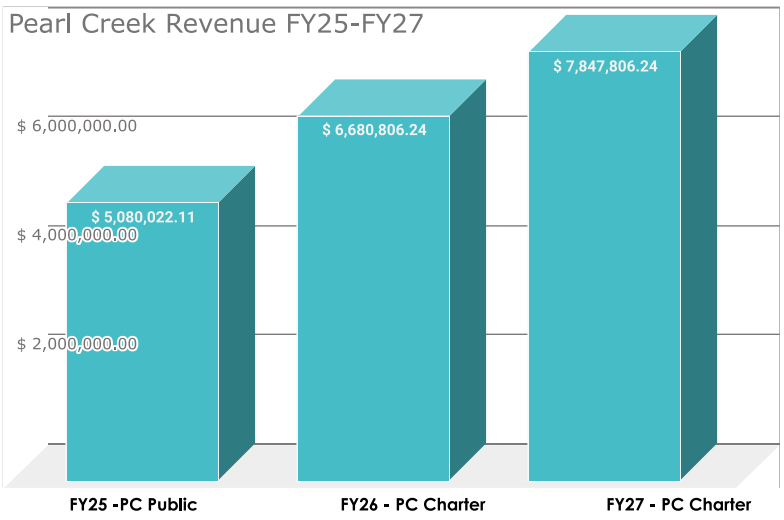
Current FY25	PC Closure FY26	PC Charter FY26	PC Charter FY27
Surplus/Reserve Funds	Over/under	Surplus/Reserve Funds	Surplus/Reserve Funds
158,952.11	(1,109,520.00)	321,850.24	1,903,296.24

FY25 PC Currently: Based on the Academic YR 24-25 Pearl Creek Elementary School expense and revenue estimates, **the school brings in more revenue than the cost of running the school.** In the FY25 budget, there is a statement on page 9, "Overall, the district began the FY25 budget process facing an estimated $29 million deficit." Where this deficit is accumulated from is unknown and not provided in the FY25 information. **What is clear is that Pearl Creek Elementary School and a Pearl Creek Charter school does not contribute to that deficit based on publicly available information demonstrating Pearl Creek being more than self sustaining.**

FY26 PC Closure Projections: A survey of Pearl Creek's current parents revealed that if the school closed for the 2025-2026 academic year, **136 of the 386 students attending in FY25 would leave the district.** This would result in a **loss of $1.3 million in revenue for the district.** Although some students would remain, expenses for maintaining the building, staffing, busing, and other facilities would continue, as shown by recent school closures. With reduced enrollment, the smaller remaining student population would **not cover these ongoing costs, leading to a net loss of $1.1 million in expenses.**

FY26 PC STEAM Charter Projections: The **Charter will increase revenue by attracting more students to the school district as demonstrated in the community outreach survey and current waitlist for charter schools in the district.** The Charter school enrollment is estimated at 526 students. This level of enrollment revenue at the current BSA will cover all Charter expenses with reserve funds remaining. The Charter model allows for the school to bring STEAM to the entire district, and will add more revenue sources to the district. The Charter will apply for grants specific to STEAM and Charter education, perform fundraising, and seek business sponsorship that will lead a self-sustaining school and boost overall district success. **Pearl Creek in its original form was fundable,** and by creating a the **PC STEAM charter school we attract families to FNSBSD. The Charter will double PC's revenue reserve to $321k in the first year, and significantly over the following years with other sources of revenue.**

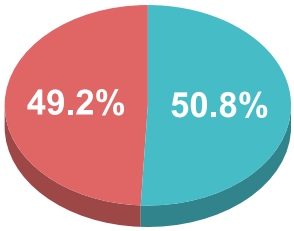
FY27-FY29 PC STEAM Charter Projections: The proceeding years of the STEAM Charter will operate on a balanced budget based solely on student allocations. With the addition of other funding sources there is an estimated **$1.9 million in revenue surplus that would be used to bring STEAM and equity to the community and the district.** Seeking self-sustaining funding, **diversification and flexibility of the PC STEAM Charter business model mitigates risk of failure due to the ability to adapt, protecting our students, teachers, and Fairbanks community from existential fiscal shortfalls.** PC STEAM Charter will help to revitalize the FNSBSD in it's fiscal crisis through strategic business decisions, diversification of funding sources, and strengthening community partnerships so we may respond to the ever changing political and community climate.



Pearl Creek School - Current Year
2024-2025

PC Students Enrolled in FNSB	Over/under
386	$ 158,952.11

Expense vs Revenue



Per Student Revenue		Operation & Facilities Cost		Over/under
$ 5,080,022.11	+	$ 4,921,070.00	=	$ 158,952.11

REVENUE: The Academic YR 24-25 Pearl Creek Elementary School revenue is generated by a per student allocation per State BSA, Transportation, Impact Aid, Local Allocation, and Special Education. All allocations amounts have been stagnant since 2017. (REF: "Public School Funding Overview" DEED)

EXPENSES: The Academic YR 24-25 Pearl Creek Elementary School expenses are primarily staffing, facilities and transportation. The average classroom size for YR 24-25 is 32-35 kids per class. The facilities cost is based on the FY23 and FY24 average. The cost of staffing PC is based on the uppermost salaries that were in the FNSBSD salary schedule. The actual salaries for every staff position are not publicly available. Therefore, the higher staffing estimates were used. The transportation cost is based on the Durham bus service online estimate of $90K per route. PC currently uses 9 routes for students not covered by additional special education transportation funding.

CONCLUSION: Based on the Academic YR 24-25 Pearl Creek Elementary School expense and revenue estimates, the school will bring in more revenue than the cost of running the school. In the FY25 budget, there is a statement on page 9, "**Overall, the district began the FY25 budget process facing an estimated $29 million deficit.**" Where this deficit is accumulated from is unknown and not provided in the FY25 information. What is clear is that Pearl Creek Elementary School does not contribute to that deficit based on publicly available financial information.

REVENUE REF: "Public School Funding Program Overview" from the Alaska Department of Education & Early Development (SOA DEED) January 2022, which the allocations have not increased so it has the same allocation https://education.alaska.gov/SchoolFinance/docs/ADA%20Funding%20Program%20Overview%202023_eff1-2022.pdf

EXPENSE REF: Facilities Cost came from School District request for records for FY23 and FY24. Staffing costs came from FTEs of current FY25 approved budget and salary schedule on FNSBSD Salary Schedules found on the School District Website for FY 25: https://www.k12northstar.org/departments/human-resources/salary . Transportation costs from DURHAM Bus services website referenced in FNSB SD website as being the provider of bus services https://www.k12northstar.org/departments/transportation

SUMMARY - ONLY ALLOCATION	2024 - 2025
TOTAL YEARLY REVENUE	$ 5,080,022.11
TOTAL YEARLY EXPENSES	$ 4,921,070.00
TOTAL YEARLY OPERATING OVERAGE/SURPLUS	$ 158,952.11

Revenue and Allocations

REVENUE	FY25
	$ 3,557,638.11
Other - Local Alloc, Impact Aid, Spec. Ed. Transportation	$ 1,522,384.00
	$ 5,080,022.11

Budget Summary

EXPENSES	FY25
Salaries	$ 2,180,000.00
Benefits	$ 1,213,070.00
Services	$ 1,316,500.00
Supplies	$ 182,000.00
Equipment	$ 5,000.00
Other	$ 24,500.00
	$ 4,921,070.00

Revenue	FY25
District Base Student Allocation	$ 3,557,638.11
Local Allocation	$ 118,502.00
Impact Aid	$ 618,372.00
Special Education Allocation	$ 460,112.00
Transportation Allocation	$ 325,398.00
Fundraising	$ -
Grants	$ -
In-Kind	$ -
TOTAL YEARLY REVENUE	$ 5,080,022.11

Salaries and Wages

EXPENSES	# FTE	FY25
Principal		
Principal (1 FTE)	1.00	$ 150,000.00
Certificated		
Teachers:Classroom (24 FTE)	15.00	$ 1,200,000.00
Teachers: Special Educatior	1.00	$ 100,000.00
Teachers:Subject Matter (0 F	0.00	$ -
Support		
Admins/Secretary:Office (2	2.00	$ 160,000.00

Admins/Secretary:Special E	0.00	$	-
Counselor	1.00	$	100,000.00
Behavioral Health	0.00	$	-
Teachers Assistants	2.00	$	160,000.00
Gym	1.00	$	100,000.00
Music	1.00	$	100,000.00
Librarian	1.00	$	100,000.00
Substitutes			
Substitutes - Anticipated	2.00	$	160,000.00
Other	0.00	$	-
TOTAL YEARLY EXPENSES		$	2,180,000.00
	total staff		25.00

Benefits

EXPENSES	FY25
Principal	$ 75,000.00
Certified Teachers	$ 650,000.00
Support Staff	$ 288,000.00
Substitutes	$ 13,680.00
Other	$ 186,390.00
TOTAL YEARLY EXPENSES	$ 1,213,070.00

Services

EXPENSES	FY25
Professional & Technical Ser	$ -
Outdoor maintenance	$ 100,000.00
Student Travel	$ 810,000.00
Copier Charges	$ 10,000.00
Facilities Cost	$ 296,500.00
Curriculum	$ 100,000.00
TOTAL YEARLY EXPENSES	$ 1,316,500.00

Supplies

EXPENSES	FY25
Classroom Supplies	$ 80,000.00
Technology Purchases (Mai	$ 80,000.00
Books (Updating)	$ 2,000.00
Curriculum	$ 20,000.00
TOTAL YEARLY EXPENSES	$ 182,000.00

Equipment

EXPENSES	FY25
Copiers	$ 5,000.00
TOTAL YEARLY EXPENSES	$ 5,000.00

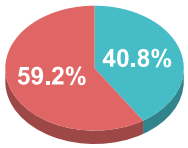
Classroom Expenses		
EXPENSES		**FY25**
Classroom furniture	$	5,000.00
Office Furniture	$	1,000.00
Commons Area	$	500.00
Computers / iPads	$	10,000.00
Library	$	2,000.00
Gym	$	2,000.00
Music	$	2,000.00
Kitchen	$	2,000.00
TOTAL YEARLY EXPENSES	$	24,500.00

Pearl Creek School - Closed

2025-2026

PC Students Enrolled in FNSB	Over/under
250	$ (1,109,520.00)

Revenue vs. Expense



Per Student Revenue		Expenses per remaining students		Over/under
$ 2,476,000.00	+	$ 3,585,520.00	=	$ (1,109,520.00)

REVENUE: In the Academic YR 25-26 where Pearl Creek Elementary School is closed, 134 students of the 386 students attending PC in the current school year intend to leave the district per the parent survey that began in January 2025. **That results in $1.3M loss in revenue.**

EXPENSES: Costs of the facilities of PC does not go away when the school is closed. As with other previous closures, the FNSB or FNSBSD still must maintain and heat these buildings, the cost of the facility does not go away with closure. Additionally there will still need to be bus routes and teachers for the remaining students. **The overall cost to the FNSBSD for the students remaining plus the facilities further adds to the districts deficit by $1.1M.**

SUMMARY - ONLY ALLOCATION	FY26	FY27	FY28	FY29
TOTAL YEARLY REVENUE	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00
TOTAL YEARLY EXPENSES	$ 3,585,520.00	$ 3,734,995.00	$ 3,792,400.60	$ 3,850,954.31
TOTAL YEARLY OPERATING OVERAGE/SURPLI	$ (1,109,520.00)	$ (1,258,995.00)	$ (1,316,400.60)	$ (1,374,954.31)

Revenue and Allocations

REVENUE	FY26	FY27	FY28	FY29
District Base Student Allocation	$ 1,490,000.00	$ 1,490,000.00	$ 1,490,000.00	$ 1,490,000.00
Other - Local Alloc, Impact Aid, Sp	$ 986,000.00	$ 986,000.00	$ 986,000.00	$ 986,000.00
	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00

Budget Summary

EXPENSES	FY26	FY27	FY28	FY29
Salaries	$ 2,080,000.00	$ 2,118,400.00	$ 2,157,568.00	$ 2,197,519.36
Benefits	$ 1,085,520.00	$ 1,196,595.00	$ 1,214,832.60	$ 1,233,434.95
Services	$ 420,000.00	$ 420,000.00	$ 420,000.00	$ 420,000.00
Supplies	$ -	$ -	$ -	$ -
Equipment	$ -	$ -	$ -	$ -
Other	$ -	$ -	$ -	$ -
	$ 3,585,520.00	$ 3,734,995.00	$ 3,792,400.60	$ 3,850,954.31

Revenue	FY26	FY27	FY28	FY29
District Base Student Allocation	$ 1,490,000.00	$ 1,490,000.00	$ 1,490,000.00	$ 1,490,000.00
Local Allocation	$ 400,500.00	$ 400,500.00	$ 400,500.00	$ 400,500.00
Impact Aid	$ 76,750.00	$ 76,750.00	$ 76,750.00	$ 76,750.00
Special Education Allocation	$ 298,000.00	$ 298,000.00	$ 298,000.00	$ 298,000.00

Transportation Allocation	$ 210,750.00	$ 210,750.00	$ 210,750.00	$ 210,750.00
Fundraising	$ -	$ -	$ -	$ -
Grants	$ -	$ -	$ -	$ -
In-Kind	$ -	$ -	$ -	$ -
TOTAL YEARLY REVENUE	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00	$ 2,476,000.00

Salaries and Wages

EXPENSES	# FTE	FY26	FY27	FY28	FY29
		Principal			
Principal (	0.00	$ -	$ -	$ -	$ -
		Certificated			
Teachers:Classroom	12.00	$ 960,000.00	$ 979,200.00	$ 998,784.00	$ 1,018,75
Teachers: Special Education	3.00	$ 300,000.00	$ 306,000.00	$ 312,120.00	$ 318,362
Teachers:Subject Matter	0.00	$ -	$ -	$ -	$ -
		Support			
Admins/Secretary:Office	0.00	$ -	$ -	$ -	$ -
Admins/Secretary:Special Education	0.00	$ -	$ -	$ -	$ -
Counselor	0.00	$ 100,000.00	$ 102,000.00	$ 104,040.00	$ 106,120
Behavioral Health	1.00	$ 100,000.00	$ 102,000.00	$ 104,040.00	$ 106,120
Teachers Assistants	2.00	$ 160,000.00	$ 163,200.00	$ 166,464.00	$ 169,793
Gym	0.00	$ 100,000.00	$ 102,000.00	$ 104,040.00	$ 106,120
Music	0.00	$ 100,000.00	$ 102,000.00	$ 104,040.00	$ 106,120
Librarian	0.00	$ 100,000.00	$ 102,000.00	$ 104,040.00	$ 106,120
		Substitutes			
Substitutes - Anticipated	2.00	$ 160,000.00	$ 160,000.00	$ 160,000.00	$ 160,000
Other	0.00	$ -	$ -	$ -	$ -
TOTAL YEARLY EXPENSES		$ 2,080,000.00	$ 2,118,400.00	$ 2,157,568.00	$ 2,197,51

Benefits

EXPENSES	FY26	FY27	FY28	FY29
Principal	$ -	$ -	$ -	$ -
Certified Teachers	$ 630,000.00	$ 642,600.00	$ 655,452.00	$ 668,561.04
Support Staff	$ 264,000.00	$ 269,280.00	$ 274,665.60	$ 280,158.91
Substitutes	$ 13,680.00	$ 13,680.00	$ 13,680.00	$ 13,680.00
Other	$ 177,840.00	$ 271,035.00	$ 271,035.00	$ 271,035.00
TOTAL YEARLY EXPENSES	$ 1,085,520.00	$ 1,196,595.00	$ 1,214,832.60	$ 1,233,434.95

Services

EXPENSES	FY26	FY27	FY28	FY29
Professional & Technical Services	$ -	$ -	$ -	$ -
Outdoor maintenance				
Student Travel	$ 270,000.00	$ 270,000.00	$ 270,000.00	$ 270,000.00
Copier Charges				
Facilities Cost	$ 150,000.00	$ 150,000.00	$ 150,000.00	$ 150,000.00
Curriculum				
TOTAL YEARLY EXPENSES	$ 420,000.00	$ 420,000.00	$ 420,000.00	$ 420,000.00

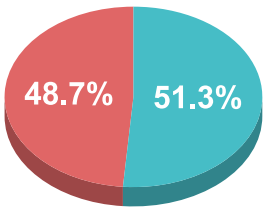
Pearl Creek STEAM Charter School

2025-2026

PC Students Enrolled in FNSBSD	Over/under
526	$321,850

*Reserve Funds

Revenue vs. Expense



Per Student Revenue		Operational & Facilities Cost		Over/under
$ 6,344,646	+	$ 6,022,796	=	$ 321,850

REVENUE: Based on the community survey there is an **estimated 200 students outside of current elementary school who want to attend PC STEAM Charter, and 100 of those students are not currently enrolled in the FNSBSD.** For current families at PC, the survey indicates that 83% or 320 students of the PC families would enroll in PC STEAM Charter. Estimated enrollment for PC STEAM Charter is 526. The PC STEAM Charter revenue is generated by a per student allocation per State BSA, Transportation, Impact Aid, Local Allocation, and Special Education. All allocations amounts have been stagnant since 2017. (REF: "Public School Funding Overview" DEED)

EXPENSES: The Academic YR 25-26 PC STEAM Charter expenses is primarily staffing, facilities and transportation costs. The facilities cost is based on the FY23 and FY24 average. The staffing levels (FTE) is based on the Principal's current estimates. The cost of staffing PC is based on the uppermost salaries that were in the FNSBSD salary schedule. The actual salaries for every staff position are not publicly available. Therefore, the higher staffing estimates were used. Transportation is based on the Durham bus service online estimate of three 20 passanger van estimated at $75K per route. Additonal funds for transportation is anticipated through use of reserve funds, future grants, business sponsorships, and fundraisers. Additional expenses include estimated start-up costs for the Charter, curriculum, supplies, equipment, and furnishings.

Pearl Creek STEAM Charter School
Budget Summary, Projections, and Financial Plan
2025-2029

SUMMARY - ONLY ALLOCATION	FY26	FY27	FY28	FY29
TOTAL YEARLY REVENUE	$ 6,344,646	$ 6,344,646	$ 6,344,646	$ 6,344,646
TOTAL YEARLY EXPENSES	$ 6,022,796	$ 5,944,510	$ 5,944,510	$ 5,944,510
TOTAL YEARLY OPERATING RESERVE FUNDS/SURPLUS	$ 321,850	$ 400,136	$ 400,136	$ 400,136

SUMMARY - ALLOCATION & OTHER REVENUE	FY26	FY27	FY28	FY29
TOTAL YEARLY REVENUE	$ 6,680,806	$ 7,847,806	$ 7,872,806	$ 7,872,806
TOTAL YEARLY EXPENSES	$ 6,022,796	$ 5,944,510	$ 5,944,510	$ 5,944,510
TOTAL YEARLY OPERATING OVERAGE/SURPLUS	$ 658,010	$ 1,903,296	$ 1,928,296	$ 1,928,296

Revenue and Allocations

REVENUE	FY26	FY27	FY28	FY29
District Base Student Allocation	$4,563,520	$ 4,563,520	$4,563,520	$ 4,563,520
Other - Local Alloc, Impact Aid, Spec. Ed. Transportation	$2,117,286	$ 3,284,286	$3,309,286	$ 3,309,286
	$ 6,680,806	$ 7,847,806	$7,872,806	$ 7,872,806

Budget Summary

EXPENSES	FY26	FY27	FY28	FY29
Salaries	$3,220,000	$ 3,220,000	$3,220,000	$ 3,220,000
Benefits	$1,835,150	$ 1,830,875	$1,830,875	$ 1,830,875
Services	$ 579,500	$ 579,500	$ 579,500	$ 579,500
Supplies	$ 62,000	$ 62,000	$ 62,000	$ 62,000
Equipment	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Other	$ 89,500	$ 18,500	$ 18,500	$ 18,500
4% School District Administration Cost	$ 231,646	$ 228,635	$ 228,635	$ 228,635
	$ 6,022,796	$ 5,944,510	$5,944,510	$ 5,944,510

Revenue	FY26	FY27	FY28	FY29
District Base Student Allocation	$ 4,563,520	$ 4,563,520	$ 4,563,520	$ 4,563,520
Local Allocation	$ 842,652	$ 842,652	$ 842,652	$ 842,652
Impact Aid	$ 161,482	$ 161,482	$ 161,482	$ 161,482
Special Education Allocation	$ 626,992	$ 626,992	$ 626,992	$ 626,992
Transportation Allocation	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Fundraising	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Grants	$ 291,160	$ 1,458,160	$ 1,483,160	$ 1,483,160
In-Kind	$ 20,000	$ 20,000	$ 20,000	$ 20,000
TOTAL YEARLY REVENUE	$ 6,680,806	$ 7,847,806	$ 7,872,806	$ 7,872,806

Salaries and Wages

EXPENSES	# FTE	FY26	FY27	FY28	FY29
Principal					
Principal (1 FTE)	1.00	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Certificated					
Teachers:Classroom (24 FTE)	24.00	$ 1,920,000	$ 1,920,000	$ 1,920,000	$ 1,920,000
Teachers: Special Education (3	3.00	$ 300,000	$ 300,000	$ 300,000	$ 300,000
Teachers:Subject Matter (0 FTE)	0.00	$ -	$ -	$ -	$ -
Support					
Admins/Secretary:Office (2 FTE)	2.00	$ 160,000	$ 160,000	$ 160,000	$ 160,000
Admins/Secretary:Special Educ	0.00	$ -	$ -	$ -	$ -
Counselor	1.00	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Behavioral Health	2.00	$ 200,000	$ 200,000	$ 200,000	$ 200,000

	Teachers Assistants	2.00	$ 160,000	$ 160,000	$ 160,000	$ 160,000
	Gym	1.00	$ 100,000	$ 100,000	$ 100,000	$ 100,000
	Music	1.00	$ 100,000	$ 100,000	$ 100,000	$ 100,000
	Librarian	1.00	$ 100,000	$ 100,000	$ 100,000	$ 100,000
	Substitutes					
	Substitutes - Anticipated	1.00	$ 80,000	$ 80,000	$ 80,000	$ 80,000
	Other	0.00	$ -	$ -	$ -	$ -
	TOTAL YEARLY EXPENSES		$ 3,220,000	$ 3,220,000	$ 3,220,000	$ 3,220,000

Benefits

	EXPENSES	FY26	FY27	FY28	FY29
	Principal	$ 75,000	$ 75,000	$ 75,000	$ 75,000
	Certified Teachers	$ 1,110,000	$ 1,110,000	$ 1,110,000	$ 1,110,000
	Support Staff	$ 368,000	$ 368,000	$ 368,000	$ 368,000
	Substitutes	$ 6,840	$ 6,840	$ 6,840	$ 6,840
	Other	$ 275,310	$ 271,035	$ 271,035	$ 271,035
	TOTAL YEARLY EXPENSES	$ 1,835,150	$ 1,830,875	$ 1,830,875	$ 1,830,875

Services

	EXPENSES	FY26	FY27	FY28	FY29
	Professional & Technical Servic	$ -	$ -	$ -	$ -
	Outdoor maintenance	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	Student Travel	$ 225,000	$ 225,000	$ 225,000	$ 225,000
	Copier Charges	$ 8,000	$ 8,000	$ 8,000	$ 8,000
	Facilities Cost	$ 226,500	$ 226,500	$ 226,500	$ 226,500
	Curriculum	$ 100,000	$ 100,000	$ 100,000	$ 100,000
	TOTAL YEARLY EXPENSES	$ 579,500	$ 579,500	$ 579,500	$ 579,500

Supplies

	EXPENSES	FY26	FY27	FY28	FY29
	Classroom Supplies	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	Technology Purchases (Mainte	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	Books (Updating)	$ 2,000	$ 2,000	$ 2,000	$ 2,000
	Curriculum	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	TOTAL YEARLY EXPENSES	$ 62,000	$ 62,000	$ 62,000	$ 62,000

Equipment

	EXPENSES	FY26	FY27	FY28	FY29
	Copiers	$ 5,000	$ 5,000	$ 5,000	$ 5,000
	TOTAL YEARLY EXPENSES	$ 5,000	$ 5,000	$ 5,000	$ 5,000

Start Up Expenses

	EXPENSES	FY26	FY27	FY28	FY29
	Classroom furniture	$ 5,000	$ 5,000	$ 5,000	$ 5,000
	Office Furniture	$ 1,000	$ 1,000	$ 1,000	$ 1,000
	Commons Area	$ 500	$ 500	$ 500	$ 500
	Computers / iPads	$ 75,000	$ 10,000	$ 10,000	$ 10,000
	Library	$ 2,000	$ 500	$ 500	$ 500
	Gym	$ 2,000	$ 500	$ 500	$ 500
	Music	$ 2,000	$ 500	$ 500	$ 500
	Kitchen	$ 2,000	$ 500	$ 500	$ 500
	TOTAL YEARLY EXPENSES	$ 89,500	$ 18,500	$ 18,500	$ 18,500

List of Grants (pending reenactment) & Other Revenue Sources

FUNDER	FY26	FY27	FY28	FY29
Department of Education, Charter Sch	$ -	$ 400,000	$ 400,000	$ 400,000
Quality Schools Grant	$ 8,160	$ 8,160	$ 8,160	$ 8,160
NSF Discovery Research PreK-12 (DRK-1	$ -	$ 1,000,000	$ 1,000,000	$ 1,000,000
First year Charter Grant ($500/per stud	$ 263,000	$ -	$ -	$ -
Corporate Sponsorship & Fundraising	$ 20,000	$ 50,000	$ 75,000	$ 75,000
	$ 291,160	**$ 1,458,160**	**$1,483,160**	**$ 1,483,160**

Major Building Repair Funding - if needed, no included in rev/exp until info. on need provided

FUNDER/DISCRIPTION	FY26	FY27	FY28	FY29
State Capital Request for Boiler	$ -	$ -	$250,000	

APPENDIX J

Proposed Transportation Policy

Pearl Creek STEAM Charter School

To uphold our commitment to a functional and practical transportation plan for families, we will collaborate closely with the FNSBSD to ensure transportation services are available for students who require them. Transportation needs will be assessed annually during the application and lottery process. The applicant will have the opportunity to request transportation during the application process. After the lottery is completed, PCSC will identify students in need of transportation, determine their locations, and finalize the school year's transportation plan accordingly.

To address these needs, PCSC will explore and implement a range of transportation solutions, including:

- Maximizing District Transportation Services: We will work with FNSBSD to ensure that as many students as possible qualify for transportation under the existing district policy and routes.
- Developing Additional Transportation Options: When existing district transportation policies do not fully meet our students' needs, we will collaborate with FNSBSD, the busing provider, and/or local entities to design a customized route for PCSC students. This may involve establishing designated bus stop locations based on the geographical concentration of students requiring transportation. PCSC will also work to secure and allocate funding for this plan.
- Adjusting School Schedules if Necessary: If needed, we will consider modifying start and end times to accommodate viable transportation solutions.

Our goal is to ensure that all students who need transportation have access to reliable and efficient options that support their educational experience.

Alaska State Charter School Statutes

Sec. 14.03.250. Application for charter school.

(a) A local school board shall prescribe an application procedure for the establishment of a charter school in that school district. The application procedure must include provisions for an academic policy committee consisting of parents of students attending the school, teachers, and school employees and a proposed form for a contract between a charter school and the local school board, setting out the contract elements required under AS 14.03.255(c).

(b) A decision of a local school board approving or denying an application for a charter school must be in writing, must be issued within 60 days after the application, and must include all relevant findings of fact and conclusions of law.

(c) If a local school board approves an application for a charter school, the local school board shall forward the application to the State Board of Education and Early Development for review and approval.

(d) If a local school board denies an application for a charter school, the applicant may appeal the denial to the commissioner. The appeal to the commissioner shall be filed not later than 60 days after the local school board issues its written decision of denial. The commissioner shall review the local school board's decision to determine whether the findings of fact are supported by substantial evidence and whether the decision is contrary to law. A decision of the commissioner upholding the denial by the local school board may be appealed within 30 days to the State Board of Education and Early Development.

(e) If the commissioner approves a charter school application, the commissioner shall forward the application to the State Board of Education and Early Development for review and approval. The application shall be forwarded not later than 30 days after the commissioner issues a written decision. The State Board of Education and Early Development shall exercise independent judgment in evaluating the application.

(f) A local school board that denied an application for a charter school approved by the state board on appeal shall operate the charter school as provided in AS 14.03.255 - 14.03.290. [This statute applies to charter school applications filed with a local school board on or after July 1, 2014.]

Sec. 14.03.253. Charter school application appeal.

(a) In an appeal to the commissioner under AS 14.03.250, the commissioner shall review the record before the local school board. The commissioner may request written supplementation of the record from the applicant or the local school board. The commissioner may

(1) remand the appeal to the local school board for further review;

(2) approve the charter school application and forward the application to the State Board of Education and Early Development with or without added conditions; or

(3) uphold the decision denying the charter school application; if the commissioner upholds a local school board's decision to deny a charter school application and the applicant appeals to the State Board of Education and Early Development, the commissioner shall immediately forward the application and record to the State Board of Education and Early Development.

(b) In an appeal to the State Board of Education and Early Development of a denial of a charter school application under (a)(3) of this section, the state board shall determine, based on the record, whether the commissioner's findings are supported by substantial evidence and whether the decision is contrary to law. The state board shall issue a written decision within 90 days after an appeal.

[This statute applies to charter school applications filed with a local school board on or after July 1, 2014.]

Sec. 14.03.255. Organization and operation of a charter school.

(a) A charter school operates as a school in the local school district except that the charter school (1) is exempt from the local school district's textbook, program, curriculum, and scheduling requirements; (2) is exempt from AS 14.14.130(c); the principal of the charter school shall be selected by the academic policy committee and shall select, appoint, or otherwise supervise employees of the charter school; and (3) operates under the charter school's annual program budget as set out in the contract between the local school board and the charter school under (c) of this section. A local school board may exempt a charter school from other local school district requirements if the exemption is set out in the contract. A charter school is subject to tests required by the department.

(b) A charter school shall

(1) keep financial records of the charter school;

(2) oversee the operation of the charter school to ensure that the terms of the contract required by (c) of this section are being met;

(3) meet regularly with parents and with teachers of the charter school to review, evaluate, and improve operations of the charter school; and

(4) meet with the academic policy committee at least once each year to monitor progress in achieving the committee's policies and goals.

(c) A charter school shall operate under a contract between the charter school and the local school board. A contract must contain the following provisions:

(1) a description of the educational program;

(2) specific levels of achievement for the education program;

(3) admission policies and procedures;

(4) administrative policies;

(5) a statement of the charter school's funding allocation from the local school board and costs assignable to the charter school program budget;

(6) the method by which the charter school will account for receipts and expenditures;

(7) the location and description of the facility;

(8) the name of the teacher, or teachers, who, by agreement between the charter school and the teacher, will teach in the charter school;

(9) the teacher-to-student ratio;

(10) the number of students served;

(11) the term of the contract, not to exceed a term of 10 years;

(12) a termination clause providing that the contract may be terminated by the local school board for the failure of the charter school to meet educational achievement goals or fiscal management standards, or for other good cause;

(13) a statement that the charter school will comply with all state and federal requirements for receipt and use of public money;

(14) other requirements or exemptions agreed upon by the charter school and the local school board.

(d) A school district shall offer to a charter school the right of first refusal for a lease of space in an existing school district facility or in a facility within the school district that is not currently being used as a public school, if the chief school administrator determines the facility meets requirements for health and safety applicable to public buildings or other public schools in the district. If the school district requires lease payments by a charter school, the school district shall negotiate a lease agreement with the charter school for an amount that does not exceed the true operational costs calculated on a square foot basis for space leased under this subsection.

Sec. 14.03.260. Funding for charter school.

(a) A local school board shall provide an approved charter school with an annual program budget. The budget shall be not less than the amount generated by the students enrolled in the charter school less administrative costs retained by the local school district, determined by applying the indirect cost rate approved by the department up to four percent. Costs directly related to charter school facilities, including rent, utilities, and maintenance, may not be included in an annual program budget for the purposes of calculating the four percent cap on administrative costs under this subsection. A local school board shall provide a charter school with a report itemizing the administrative costs retained by the local school board under this section. The "amount generated by students enrolled in the charter school" is to be determined in the same manner as it would be for a student enrolled in another public school in that school district and includes funds generated by grants, appropriations, federal impact aid, the required local contribution, the local contribution under AS 14.17.410(c), special needs under AS 14.17.420(a)(1), and secondary school vocational and technical instruction under AS 14.17.420(a)(3). A school district shall direct state aid under AS 14.11 for the construction or major maintenance of a charter school facility to the charter school that generated the state aid, subject to the same terms and conditions that apply to state aid under AS 14.11 for construction or major maintenance of a school facility that is not a charter school.

(b) The program budget of a charter school is to be used for operating expenses of the educational program of the charter school, including purchasing textbooks, classroom materials, and instructional aids.

(c) The charter school shall provide the financial and accounting information requested by the local school board or the Department of Education and Early Development and shall cooperate with the local school district or the department in complying with the requirements of AS 14.17.910.

(d) The expenses of housing nonresident students who attend the charter school, including room, board, and other reasonable housing expenses, may not be paid for with state money but may be paid for with funds contributed by sources other than the state.

Sec. 14.03.263. Charter school grant program. [Repealed, Sec. 1 ch 100 SLA 2003].

Repealed or Renumbered

Sec. 14.03.264. Charter school grant program.

(a) A charter school that is established on or after the effective date of this section may receive a one-time grant from the department equal to the amount of $500 for each student enrolled in the school on October 1 of the first year in which the school applies for the grant. The charter school shall use a grant received under this section to provide educational services. In this subsection, "educational services" includes curriculum development, program development, and special education services.

(b) The department shall establish by regulation procedures for the application for and expenditure of grant funds under (a) of this section.

(c) If the amount appropriated in a fiscal year for the charter school grant program is insufficient to meet the amounts authorized under (a) of this section, the department shall reduce pro rata the per pupil grant amount by the necessary percentage as determined by the department. If a charter school grant is reduced under this subsection, the charter school may apply to the department in a subsequent fiscal year for the balance of the grant amount.

Sec. 14.03.265. Admission.

(a) The program of a charter school may be designed to serve

(1) students within an age group or grade level;

(2) students who will benefit from a particular teaching method or curriculum; or

(3) nonresident students, including providing domiciliary services for students who need those services, if approved by the board.

(b) A charter school shall enroll all eligible students who submit a timely application, unless the number of those applications exceeds the capacity of the program, class, grade level, or building. In the event of an excess of those applications, the charter school and the local school board shall attempt to accommodate all of those applicants by considering providing additional classroom space and assigning additional teachers from the district to the charter school. If it is not possible to accommodate all eligible students who submit a timely application, students shall be accepted by random drawing. A school board may not require a student to attend a charter school.

(c) In addition to other requirements of law, a charter school shall be nonsectarian.

Sec. 14.03.270. Teacher or employee transfers, evaluations, and negotiated agreements.

(a) A teacher or employee may not be assigned to a charter school unless the teacher or employee consents to the assignment.

(b) All provisions of an existing negotiated agreement or collective bargaining agreement applicable to a teacher or employee of a district apply to that teacher or employee if employed at a charter school in that district, unless the district and the bargaining unit representing the teacher or employee agree to an exemption.

(c) A teacher in a charter school shall be evaluated in an equivalent manner as all other teachers in the district, except that if there is no administrator assigned to the charter school, the local school board, with the agreement of the charter school, shall designate a school district administrator in that district to evaluate a teacher in a charter school.

Sec. 14.03.275. Contracts; duration.

A contract for a charter school may be for a term of no more than 10 years.

Sec. 14.03.280. Regulations.

The State Board of Education and Early Development may adopt regulations under AS 44.62 (Administrative Procedure Act) necessary to implement AS 14.03.250 - 14.03.290.

Sec. 14.03.290. Definitions. In AS 14.03.250 - 14.03.290,

(1) "academic policy committee" means the group designated to supervise the academic operation of a charter school and to ensure the fulfillment of the mission of a charter school;

(2) "charter school" means a school established under AS 14.03.250 - 14.03.290 that operates within a public school district;

(3) "local school board" means a borough or city school board or a school board of a regional educational attendance area;

(4) "parent" means a biological, adoptive, or foster parent, or an adult who acts as guardian of a child and makes decisions related to the child's safety, education, and welfare;

(5) "teacher" means a person who serves a school district in a teaching, counseling, or administrative capacity and is required to be certificated in order to hold the position.

Sec. 14.07.165 Duties.

The [State Board of Education and Early Development] shall adopt

(4) regulations requiring approval by the board before a charter school, state boarding school, or a public school may provide domiciliary services.

Sec. AS 14.09.010 is amended by adding new subsections to read:

(e) A school district that provides transportation services under this section shall provide transportation services to students attending a charter school operated by the district under a policy adopted by the district. The policy must:

(1) be developed with input solicited from individuals involved with the charter school, including staff, students, and parents;

(2) at a minimum, provide transportation services for students enrolled in the charter school on a space available basis along the regular routes that the students attending schools in an attendance area in the district are transported; and

(3) be approved by the department.

(f) If a school district fails to adopt a policy under (e) of this section, the school district shall allocate the amount received for each student under (a) of this section to each charter school operated by the district based on the number of students enrolled in the charter school.

(g) Nothing in (e) of this section requires a school district to establish dedicated transportation routes for the exclusive use of students enrolled in a charter school or authorizes a charter school to opt out of a policy adopted by a school district for the purpose of acquiring transportation funding.

Sec. AS 14.17.450(d) is amended to read:

(d) If a charter school has a student count of at least 75 but less than 150 for the current year and is in the first three years of operation or had a student count of at least 75 in the previous year of operation,

(1) the adjusted student count for the school shall be calculated by multiplying the student count by the student rate for a school that has a student count of 150; and

(2) not later than February 15, the charter school shall submit for approval of the governing board of the district a plan for the following school year that includes a statement about whether the school will continue to operate if the student count remains the same that year and, if so, a projection of the funding anticipated from the state and other sources, a proposed budget, and a description of anticipated changes to the school staff, program, and curriculum; if the school intends to close if the student count remains the same the following year, the plan must describe transfer plans for students, staff, facilities, and materials.

Alaska State Charter Schools Regulations

4 AAC 27 is amended by adding a new section to read:

4 AAC 27.057. Charter school transportation policy.

(a) A local school board shall adopt a charter school transportation policy that describes the transportation services that will be provided by the district to students attending a charter school operated by the district if

(1) a district provides transportation services under AS 14.09.010; and

(2) the district operates a charter school or an application for the establishment of a charter school in the district is pending with the district under AS 14.03.250.

(b) A district must submit to the department an application for approval of its charter school transportation policy on a form provided by the department

(1) not later than April 15, 2015, if a charter school is in operation in the district on July 1, 2014; or

(2) not later than 30 days after approval of a charter school by a local school board, if a charter school is approved by a local school board after July 1, 2014, and a charter school transportation policy approved by the department is not in effect in the district.

(c) The application to the department must include:

(1) evidence that the charter school transportation policy was developed in compliance with AS 14.09.010(e)(1); and

(2) the charter school transportation policy adopted by the local school board that provides transportation service for charter school students in compliance with AS 14.09.010(e)(2); and

(3) other documents or information the department needs to evaluate a charter school transportation policy adopted by a local school board.

(d) Not later than 60 days after receipt by the department of an application for approval of a charter school transportation policy, the department will grant approval for a charter school transportation policy if the charter school transportation meets the requirements of AS 14.09.010 and this section.

(e) If a district seeks to amend an approved charter school transportation policy, it must submit an application for approval of an amendment of the charter school transportation policy on a form provided by the department not later than April 15 of the fiscal year prior to the fiscal year when the proposed amendment will take effect. An application for approval of an amendment of a charter school transportation policy must meet the requirements of (c) of this section.

(f) Not later than 60 days after receipt by the department of an application for approval of an amendment of a charter school transportation policy, the department will grant approval

for the amendment of a charter school transportation policy if the amendment meets the requirements of AS 14.09.010 and this section. (Eff. 4/8/2015, Register 214)
Authority: AS 14.07.020 AS 14.07.060 AS 14.09.010

4 AAC 33.110 is repealed and readopted to read:

4 AAC 33.110. Charter school application and review procedure.

(a) The application procedure required by AS 14.03.250(a) for the establishment of an initial or renewed charter for a charter school must be in writing and must be available upon request at the school district's central office. The local school board must require an applicant to submit sufficient information so that the local school board may conduct a thorough review of the proposed charter school. An application must conform to the content areas and formatting standards set out at the department's Charter School webpage at: education.alaska.gov/Alaskan_Schools/Charter.

An application, upon final approval by the State Board of Education and Early Development, will operate as the charter for the school. In addition to the requirements of AS 14.03.250(a), an application must include, at a minimum,

(1) a list of the members of the academic policy committee and their qualifications;

(3) the length of the term of the contract required under AS 14.03.255(c);

(4) the charter school's bylaws;

(5) a description of the education program to be offered at the charter school and mechanisms for student assessment to be utilized in addition to those required by state law;

(6) a written instructional program that addresses state content standards under 4 AAC 04 and that aligns with the content on the statewide student assessment system under 4 AAC 06.710 – 4 AAC 06.790;

(7) written objectives for program achievement;

(8) a description of and schedule for staff development activities;

(9) a school schedule and calendar;

(10) plans for serving special education, vocational education, gifted, and bilingual students;

(11) written admissions policies and procedures;

(12) if the charter school is the only school in the community, an alternative option for students not wishing to attend the charter school;

(13) a written administrative policy manual;

(14) a written budget summary and financial plan, including

(A) a statement of the charter school's funding allocation from the local school board and costs assignable to the charter school program budget; and

(B) the method by which the charter school will account for receipts and expenditures;

(15) a written plan for the charter school's facility;

(16) a written plan that addresses the teacher-to-student ratio, including projected enrollment figures;

(17) a written student recruitment process, including a lottery or random drawing mechanism for enrollment if applicants exceed the school's capacity;

(18) a requested or existing exemption for the charter school from a written collective bargaining contract;

(19) a plan for pupil transportation and the district charter school transportation policy, if proposed or adopted;

(20) the written termination clause that must appear in the contract between the charter school and the local school board;

(21) proof of compliance with applicable law; and

(22) other documents or information the district needs to evaluate the proposed charter school.

(b) Not later than 30 days after a local school board's decision to approve an initial application or a renewal application for a charter school, the local school board must forward the application to the State Board of Education and Early Development for review and approval under AS 14.03.250(c) by mailing to the department:

(1) the complete application filed with the local school board, including all supporting documents required by (a) of this section;

(2) the written decision of the local school board;

(3) all other materials considered by the local school board in support or in opposition to the application; and

(4) the minutes of the local school board meeting at which the charter school was approved.

(c) An initial application for a charter school approved by a local school board may not be submitted to the department under subsection (b) more than 12 months before the planned start-up date for the new school. A renewal application for a charter school approved by a local school board may not be submitted to the department under (b) of this section more than 12 months before the expiration of the existing contract.

(d) An initial application and a renewal application approved by a local school board and submitted to the department under (b) of this section must be received by the department at least 90 days before the next regularly scheduled meeting of the State Board of Education and Early Development.

(e) The State Board of Education and Early Development will review an initial application or a renewal application approved by the local school board and submitted to the department under (b) of this section. The State Board of Education and Early Development will consider an initial application or a renewal application in the order in which it is received.

(f) Not later than 60 days after a local school board issues a decision to deny an initial application or a renewal application for a charter school, an applicant may file a notice of appeal to the commissioner under AS 14.03.250(d). In the notice of appeal, the applicant must specify the grounds for its appeal, stating which, if any, finding of fact or conclusion of law in the local school board's decision is alleged to be in error. If the applicant alleges that a finding of fact is in error, the applicant shall specify in the notice of appeal the evidence in the record before the local school board that supports a contrary finding of fact. With the notice of appeal, the applicant must file with the commissioner

(1) the complete application submitted to the local school board, including all supporting documents required by (a) of this section;

(2) the written decision of the local school board;

(3) any other materials considered by the local school board in support or in opposition to the application;

(4) the minutes of the local school board meeting at which the charter school was approved or denied, or if the minutes are not yet available, the date on which the minutes will be available for review by the department; and

(5) within ten working days of receipt of the commissioner's written request for a hearing transcript, a transcript of any recorded testimony presented to the local school board regarding the charter school application.

(g) The commissioner will review an appeal of a local school board decision denying an initial or renewal application for a charter school under AS 14.03.250(d).

(h) If the commissioner upholds the denial of an application, the applicant may file an appeal of the commissioner's decision to the State Board of Education and Early Development within 30 days of the issuance of the commissioner's decision. The commissioner will forward the appeal to the State Board of Education and Early Development immediately for consideration at its next meeting. The State Board of Education and Early Development will issue a decision within 90 days after the filing of an appeal of a commissioner's decision upholding a denial of an application.

(i) If the commissioner approves an initial or renewal application by overturning a denial by the local school board, the commissioner will forward the application and record to the State Board of Education and Early Development not later than thirty days after the commissioner issues a written decision of approval. The State Board of Education and Early Development will consider the application at its next meeting.

(j) The State Board of Education and Early Development will not approve an application that contains insufficient information to determine compliance with applicable law.

(k) A decision of the State Board of Education and Early Development granting or denying approval for a charter school application is a final agency action for purposes of an appeal to the superior court. (Eff. 4/27/96, Register 138; am 3/31/2002, Register 161; am 7/26/2002, Register 163; am 8/6/2004, Register 171; am 4/18/2015, Register 214)

Authority: AS 14.03.250 AS 14.03.280 AS 14.07.060
AS 14.03.253 AS 14.07.020

4 AAC 33 is amended by adding a new section to read:

4 AAC 33.113. Amendment of charter.

A charter school may apply to a local school board for an amendment to its charter during the term of its contract with the local school board. If a local school board approves an amendment to the charter, an amended contract must be executed to conform to the amended charter. The local school board must forward an amended charter and amended contract to the department. A charter school may make district-approved changes to its program that do not require an amendment to its charter without review by the State Board of Education and Early Development, except that a change of program that involves the addition of an elementary or secondary program must be approved by the local school board and the State Board of Education and Early Development. (Eff. 4/18/2015, Register 214)

Authority: AS 14.03.250 AS 14.07.020 AS 14.07.060 AS 14.03.280

4 AAC 33 is amended by adding a new section to read:

4 AAC 33.115. Operation of charter schools.

(a) The department may audit the charter school's program during the term of the contract under AS 14.03.255(c) and may take any action necessary to ensure compliance with federal

and state law, including the withholding of money under AS 14.07.070. Notwithstanding any provision of a charter or contract, a charter school must comply with state and federal law. A change in state or federal law taking effect during the term of an existing contract or charter will override an inconsistent provision of a contract or charter. (Eff. 4/18/2015, Register 214)

Authority: AS 14.03.250 AS 14.03.280 AS 14.07.060
AS 14.03.255 AS 14.07.020

4 AAC 33 is amended by adding a new section to read:

4 AAC 33.117. Charter school grant program.

(a) A charter school that is established on or after July 1, 2014, may apply to the department for one-time grant funding under AS 14.03.264. An applicant charter school must

(1) apply on a form prescribed by the department;

(2) provide evidence in its application that demonstrates that grant funding will be used to provide educational services as defined under AS 14.03.264(a); and

(3) file its application with the department not later than September 15 to receive funding based on student enrollment on October 1 of the same fiscal year.

(b) A charter school that received reduced grant funding in a prior fiscal year as permitted under AS 14.03.264(c) may apply for the balance of the grant amount using the procedures described in (a) of this section.

(c) The department will notify a newly approved charter school of its eligibility for grant funding under AS 14.03.264 promptly after approval of the charter by the state Board of Education and Early Development. (Eff. 4/18/2015, Register 214)

Authority: AS 14.03.264 AS 14.07.020 AS 14.07.060

4 AAC 33 is amended by adding a new section to read:

4 AAC 33.119. Definitions. In 4 AAC 33.110 – 4 AAC 33.119,

(1) "charter school" has the meaning given in AS 14.03.290;

(2) "commissioner" means the commissioner of education and early development;

(3) "department" means the Department of Education and Early Development;

(4) "local school board" has the meaning given in AS 14.03.290.

(Eff. 4/27/96, Register 138; am 3/31/2002, Register 161; am 7/26/2002, Register 163; am 8/6/2004, Register 171; am 4/18/2015, Register 214)

Authority: AS 14.03.250 AS 14.07.020 AS 14.07.060
AS 14.03.280