

SECOND ANNUAL ARCTIC REGIONAL
AMERICAN INDIAN SCIENCE
& ENGINEERING SOCIETY

SCIENCE FAIR 98
HANDBOOK

November 30–December 2, 1998

at the

Kotzebue Armory

Kotzebue, Alaska

Lodging Available: Kotzebue Elementary School

For more information contact:

Mike Dunleavy, Northwest Arctic Borough
School District, (907) 442-3472

Alaska Native Knowledge Network, (907) 474-5086

Claudette Bradley-Kawagley, (907) 474-5376

Email: ffceb@uaf.edu

Fax: (907) 474-5208

University of Alaska Fairbanks

Interior-Aleutians Campus

PO Box 756720

Fairbanks, Alaska 99775

Dear Teachers and Students:

We would like to invite you and your student to the **Second Annual Arctic Regional AISES Science Fair 98**. The fair will be held in the Kotzebue Armory, Kotzebue, Alaska. The Opening Ceremony is at 6:00 PM. Monday, November 30, 1998.

Preregistration deadline is Monday, November 22. Travel to Kotzebue will be on November 30. Students will set-up their projects anytime between 8 AM and 5 PM., November 30, 1998. Any student of the four Arctic Regional school districts (Bering Straits SD, Nome City Schools, North Slope Borough SD, Northwest Arctic Borough SD) in grades 5–12 is eligible to participate in the Second Annual Arctic Regional AISES Science Fair. (None of whom has reached age 21 on or before November 1st preceding the Fair.) Students must travel with a chaperone, who will be responsible for them throughout the fair. All students K–4 are invited to send in their project for display on November 30. Students are invited to wear traditional dress at the opening ceremony and awards reception.

- | | |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All Grades: | Projects must adhere to display and safety regulations. (see page 4)
See page 18 (last page) on the scientific method for types of projects you may submit, i.e., collection, demonstration, and experiment. |
| Grades 9–12 | Every student in grades 9–12 must submit a copy of their research plan/abstract with their registration form. |
| Grades 5–8 | Fill out and sign the registration form. |

All registration forms, Conduct code form, Iñupiaq values checklists, and research plans/abstracts will be reviewed by Arctic Regional AISES Science Review Committee. We will contact you, if there is any question about your project.

Participants and chaperones are responsible for their own travel, and the Monday dinner meal during the science fair. Students and chaperones must bring sleeping bags and plan to sleep in the Kotzebue Elementary School (KES). The fair, opening ceremony and awards reception will take place in the Kotzebue Armory.

Please read the enclosed information and guidelines carefully. If you have any questions, please contact, Ruthie Sampson, Bilingual Office, Northwest Arctic Borough SD, PO Box 51, Kotzebue, Alaska 99752, phone 442-3472. Send all forms to Ruthie Sampson, i.e., the registration form, the Iñupiaq checklists, the conduct code, and your research plan/abstract. We look forward to seeing you in Kotzebue.

Sincerely,

Claudette Bradley-Kawagley
AISES Coordinator

TENTATIVE AGENDA

November 30–December 2, 1998

MONDAY, NOVEMBER 30

8 AM–5 PM	Participants and chaperones arrive in Kotzebue. Pick-up at the airport will be organized by Northwest Arctic Borough SD (NWABSD). Taken to Kotzebue Elementary School (KES) to store their personal belongings. Taken to the armory to set-up projects. Chaperones are responsible for student activities after students have finished setting up their projects.
Noon–5:30 PM	Judges' registration/check in.
5:30–6 PM	Arctic Regional AISES Science Review Committee, chaperones, KES administration review policies, procedures, and agenda. At DO Boardroom.
6:30–8:30 PM	Opening ceremony. Welcome everyone. Introduce judges, participants and chaperones. AISES people speak about AISES. What its purpose is? Inupiaq dance. Potluck.
8:30–10:00 PM	Students unable to setup prior to 5 PM may set-up projects. If students have completed their set-up of projects, chaperones are responsible for student activities.
10 PM	Participants and chaperones return to KES.
TUESDAY, DECEMBER 1	
7:30–8 AM	Breakfast at KES for participants and chaperones
8–10:00 AM	Complete setting up projects.
10 AM–Noon	Grade 9–12 judging with student participants. Bus tour for grades 5–8.
Noon–1:30 PM	Lunch at KES.
1:30–3:30 PM	Grade 5–8 judging with student participants. Bus tour for grades 9–12.
3:30–6 PM	Projects open to the public. All student participants grades 5–12 must be present to explain their projects to the visiting public.
6 PM–8 PM	Participants take down projects and have dinner in town with their chaperones.
8 PM–9 PM	Awards ceremony followed by coffee/juice reception.
9–11 PM	KES. Open gym. Videos.
WEDNESDAY, DECEMBER 2	
8–10 AM	Breakfast at KES for chaperones and participants.
10 AM–5 PM	Return to villages. Lunch/snacks at KES for those that have not left yet. Open Gym at KES.

AWARDS CEREMONY

Tuesday, December 1, 1998 in the Kotzebue Armory. Students are invited to wear traditional dress. All participants will receive a ribbon and a certificate. There are 12 categories and 3 awards given to projects in each category. A committee of elders will judge projects and give awards also. The four top projects with a combined score given

by the teacher/scientist judges and the committee of elders will be sent to the AISES National Science Fair in April in the Lower 48.

DEADLINE

Registration form with checklists, conduct codes, and research plan/abstract (if required) must be postmarked on or before November 22, 1998.

ELIGIBILITY REQUIREMENTS

Grades 5–12 students in the following school districts: Bering Straits SD, Nome City Schools, North Slope Borough SD, and Northwest Arctic SD

Grade K–4 students in the Arctic Regional School Districts listed above may send in projects via mail or a chaperone.

DISPLAY AND SAFETY REGULATIONS

UNACCEPTABLE FOR DISPLAY

1. Living organisms (we recommend photographs or drawings in place of living organisms)
2. Preserve vertebrate or invertebrate animals (includes embryos)
3. Soil or waste samples
4. Flammable or hazardous chemicals
5. Sharp stems(i.e., syringes, needles, pipettes)
6. Poisons, drugs, controlled substances
7. Dry ice or simulating solids
8. Flames or highly flammable display materials
9. Tanks that have contained combustible liquids or gases, unless purged with carbon dioxide.
10. Batteries with open top cells.
11. Hand-outs to judges must be limited to one page narratives related to the essentials of this year's project. Personal accomplishments, acknowledgments, addresses, and phone and fax numbers are not permitted.

ACCEPTABLE FOR DISPLAY ONLY (CANNOT BE OPERATED)

1. Projects with unshielded belts, pulleys, chains, and moving parts with tension or pinch points.
2. Class III and IV lasers
3. Any device requiring over 110 volts.

ACCEPTABLE FOR DISPLAY & OPERATION WITH RESTRICTIONS

1. Class II lasers:
 - a. must be student operated
 - b. posted sign must read "Laser radiation: Do not stare into beam" (AISES will provide sign if needed)
 - c. must have protective housing that prevents access to beam
 - d. must be disconnected when not operating.
2. Large vacuum tubes or dangerous ray-generating devices must be shielded properly.
3. Pressurized tanks that contained non-combustibles may be allowed if secured.
4. Any apparatus producing temperatures that will cause physical burns must be adequately insulated.
5. High-voltage equipment must be shielded with a grounded metal box or cage to prevent accidental contact.
6. High-voltage wiring, switches, and metal parts must have adequate insulation and overload safety factor and must be inaccessible to others.
7. Electric circuits for 110-volt AC must have a nine foot (minimum) cord. The cord must have sufficient load-carrying capacity and be approved by Underwriters Laboratories
8. Electrical connections in 110-volt AC circuits must be soldered or made with approved connectors. Connecting wires must be insulated. Greater than 110 volts not permitted.
9. Bare wire and exposed knife switches may be used only in circuits of 12 volts or less; otherwise, standard enclosed switches are required.

SIZE OF PROJECT SPACE

Project space is limited to:

76 cm (30 in) deep

122 cm (48 in) wide

274 cm (108 in) high, including table

Any exhibit exceeding these dimensions may be eliminated.

Exhibits may be smaller.

CRITICAL SCIENCE FAIR DATES

NOVEMBER 22

Registration forms and research paper (if required) need to be postmarked on or prior to November 13.

NOVEMBER 30

8 AM to 5 PM—Participant check-in/ set-up

6:30 PM–8:30 PM—Opening ceremony and potluck

DECEMBER 1

Science fair judging

AM—Grades 9–12

PM—Grades 5–8

Awards ceremony and reception

DECEMBER 2

Return to villages

LIMITATIONS

Each student may enter only one project.

Team projects may have a maximum of three members.

Science fair exhibits must adhere to science fair safety and size requirements (see display and safety regulations).

ELIGIBILITY

Any 5–12 grade student in the following School Districts of the Arctic Region is eligible to participate in the Second Annual Arctic Regional AISES Science Fair 98:

Bering Straits SD, Nome City Schools, North Slope Borough SD, and Northwest Arctic SD

K–4 students are invited to send in projects through the mail or with a chaperone.

REQUIREMENTS

Every 5th–12th grade student must complete the Project Registration Form, conduct codes, and Liability for Exhibits and Publicity forms.

Each student or team in grades 9 through 12 must submit a (maximum) 250–word, one page, abstract which summarizes this year’s work. The abstract must describe research conducted by the student or team, NOT by adult supervisors.

Each student or team in grades 5 through 12 should display a project data book. The abstract (if required) must be included in the data book.

Each student must have a teacher, an expert (could be scientist) in the field, and an elder review his/her project, fill out the Iñupiaq values Checklist, and sign it. Copies of these checklist should be included in the data book with the display

JUDGING

There will be two sets of judges:

- Elders of the Arctic Region
- Teachers/scientists

Elders will review the projects for their alignment with Iñupiaq values and for their contribution to the students' village community.

1. How well did the student maintain Iñupiaq values? (See list of values)
 - a. Iñupiaq values (20 points)
 - b. Presentation to judges (10 points)
2. Is the project meaningful to Iñupiaq culture? (10 points)
3. Is the project meaningful to village life? (10 points)
4. Is the project meaningful to land and assets of village corporations and Native corporations? (10 points)

Teacher/scientists will evaluate

1. How well a student followed the scientific method?
 - a. Creative ability (10 points)
 - b. Scientific thought/engineering goals (10 points)
2. Detail and accuracy of research notebook and/or procedure
 - a. Thoroughness (10 points)
 - b. Presentation to judges (10 points)
3. If food/equipment were used in the best possible way.
 - a. Skill (10 points)
 - b. Teamwork (for team projects only, 10 points)

Overall, judges will look for well thought-out research. They will look at how significant your project is in its field and to the village community. They will look for thoroughness. Did you leave something out? Did you start with four experiments and finish only three?

Judges will applaud students who can speak freely and confidently about their research. They are not interested in memorized speeches—they simply want to TALK with you about your research to see if you have a good grasp of your project from start to finish. Besides asking the obvious questions, judges often ask questions outside the normal scope to test your insight into research such as “What didn't you do?” and “What would be your next step?”

TEAM PROJECTS

Team projects compete against each other in two subcategories—life sciences and physical sciences. Life sciences include behavioral and social sciences, microbiology, zoology, botany, biochemistry, ecology, medicine, and health. Physical sciences include chemistry (physical),

engineering, computer science, mathematics, earth and space sciences, environmental sciences, and physics.

Each team may have a maximum of three members. All members must be from the same grade level division.

Each member of the team should be able to serve as spokesperson, be fully involved with the project, and be familiar with all aspects of the project. If all members are not in attendance at the fair in Kotzebue, then documentation should be available which supports each team member's involvement with the project.

A team project cannot be converted into an individual project. A new member may not be added to a continuing team project, but two original team members may continue their research if the third member no longer participates.

The final work should reflect the coordinated efforts of all team members and will be evaluated using the same rules and similar judging criteria as the other content categories. The team jointly submits one abstract and one research plan that outlines each person's tasks. Names of all team members must appear on the abstract and forms. A copy of the abstract and research plan should appear in the data book with the project.

IÑUPIAQ VALUES

The Arctic Regional AISES Science Fair will support and endorse the Iñupiaq values during the Fair. The Elder judges will evaluate projects on their ability to maintain Iñupiaq values. The following list was established by the Iñupiat of NW Alaska and summarizes the values of the Iñupiaq people of the Arctic Region of Alaska.

- Knowledge of Language
- Respect for Others
- Cooperation
- Respect for Elders
- Love for Children
- Hard Work
- Knowledge of Family Tree
- Avoid Conflict
- Respect for Nature
- Spirituality
- Humor
- Family Roles
- Hunter Success
- Domestic Skills
- Humility
- Responsibility to Tribe

WHO'S INVOLVED IN A SCIENCE PROJECT?

THE ADULT SPONSOR

An adult sponsor may be a teacher, parent, university professor, or scientist in whose lab the student is working. This individual must have a solid background in science and should have close contact with the student during the course of the project.

The adult sponsor is ultimately responsible not only for the health and safety of the student conducting the research, but also for the humans or animals used as subjects. The adult sponsor must review the student's research plan to make sure that a) experimentation is done maintaining the Inupiaq values and b) that forms (Inupiaq checklist) are completed by other adults involved in approving this experiment: the adult sponsor, a science teacher or expert in the field, and an elder in the community.

The adult sponsor must be familiar with the regulations that govern potentially dangerous research as they apply to a specific student project. These may include chemical and equipment usage, experimental techniques, research involving human or nonhuman animals, and cell cultures, microorganisms, or animal tissues. The issues must be discussed with the student when drafting the research plan. Some experiments, involve procedures or materials that are regulated by state and federal laws. If not thoroughly familiar with the regulations, the Adult Sponsor should help the student enlist the aid of a Qualified Scientist.

The adult sponsor is responsible for making the student's research eligible for entry in First Annual Arctic Region AISES Science Fair.

PROJECT REVIEW COMMITTEE

All projects must be reviewed by three individuals: the adult sponsor, a science teacher or expert in the field, and an elder in the community. Each committee member must fill out and sign the Inupiaq values Checklist.

If the project is behavioral, a psychologist, counselor or individual with human behavioral training must serve on the project review committee.

If the student is using human subjects under 18, the student researchers must obtain written informed consent from all subjects and their parent/guardian. Consent forms should be included in the projects data book.

A fourth member should always be available to substitute on the student's project review committee, if needed.

None of the student's project review committee members may serve on the Arctic Regional AISES Science Review Committee. This eliminates conflict of interest.

ARCTIC REGIONAL AISES SCIENCE REVIEW COMMITTEE

Mike Dunleavy, (907) 442-3472

Ruthie Sampson, (907) 442-3472

Sandy Kawalsky

Elmer Jackson, (907) 475-2257

The Arctic Regional AISES Science Review Committee examines projects prior to judging during the week of November 22–November 30. The committee will look for:

1. Evidence of library research
2. Type and amount of supervision

3. Use of accepted research techniques
4. Completed forms and signatures
5. Humane treatment of animals
6. Compliance with Iñupiaq values
7. Appropriate use of DNA, pathogenic organisms, and controlled substances (when/if applies)

COMMITTEE SCHEDULE:

1. Before November 30 the science review committee will review and approve experimental procedures of projects involving human subjects, nonhuman vertebrates, pathogenic agents, controlled substances, DNA and human/animal tissue to make sure they comply with the Iñupiaq values and scientific method.
2. On November 30 the science review committee will review the project displays of the same projects to make sure the students followed their research plan and the Iñupiaq values.
3. Projects which do not comply with their research plans and Iñupiaq values will be eliminated.

A TOP-NOTCH SCIENCE PROJECT SHOULD INCLUDE:

PROJECT DATA BOOK

A project data book is a most critical piece of work. Accurate and detailed notes make a logical and winning project. Good notes show consistency and thoroughness to the judges and help when writing the paper. **REMINDER:** Log all hours of project work time. This is checked by the science review committee and judges.

Include your abstract, copies of consent forms (if needed), copies of the Iñupiaq checklist with signatures, journal notes or log, and data sheets for collection of data.

RESEARCH PLAN ABSTRACT (REQUIRED FOR GRADES 9-12)

After finishing your research and experimentation, you are required to write a (maximum) 250-word abstract if you are in grades 9 through 12. An abstract is a summary of the whole project. It should begin with the objectives or purpose of the project followed by the methods and the materials used to carry out the project. It should conclude with the results obtained (in summary form) and/or the conclusions drawn. Use a separate sheet of paper. It must be no longer than 250 words. **NOTE:** A copy of your abstract must be displayed with your exhibit. Include in your data book.

VISUAL DISPLAY

You want to attract and inform. Make it easy for interested spectators and judges to assess your study and the results you obtained. Make the most of your space using clear and concise displays. Make headings stand out, draw graphs, and diagrams clearly and label them correctly. You would be surprised how often visuals are mislabeled so pay careful attention.

Use a display board that stands alone with three panels. Clearly label your title, statement of purpose or hypothesis, materials used, procedure, results, and conclusion. Use models, photographs, or drawings if appropriate. Make your display board logically presented, easy to read, and eye-catching. Be sure to adhere to the size limitations and safety rules when displaying your project. Do not hesitate to ask for advice from adults if you need it. Remind your sponsor to check the display rules.

STEP BY STEP GUIDELINES FOR SCIENCE FAIR PROJECTS

Follow the guidelines of the step-by-step guidelines written by the Milwaukee Indian Center. They are thorough guidelines and will help you:

1. Pick your topic.
2. Research your topic
3. Organize and theorize
4. Make a timetable
5. Plan your experiment
6. Consult your adult sponsor, an expert in the field, and an elder
7. Conduct your experiment
8. Examine your results
9. Draw conclusions

CATEGORY CODES/DESCRIPTION

The student/adult sponsor must decide in which category the student is competing. If you have questions please contact a member of the Arctic Regional AISES Science Review Committee

BE = BEHAVIORAL AND SOCIAL SCIENCES

Human and animal behaviors, social and community relationships: psychology, sociology, anthropology, archaeology, ethology, ethnology, linguistics, animal behavior (learned or instinctive), learning perception, urban problems, reading problems, public opinion surveys, educational testing, etc.

BI/MI = BIOCHEMISTRY & MICROBIOLOGY

Biochemistry includes chemistry of life processes, molecular biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry.
Microbiology includes biology of microorganisms, bacteriology, virology, yeast, etc.

BO = BOTANY

Study of plants, agriculture agronomy, horticulture, forestry, plant anatomy, etc.

CH = CHEMISTRY

Study of nature and composition of matter and laws governing physical chemistry, organic chemistry, materials, plastics, fuels, pesticides, metallurgy, soil chemistry, etc.

EA = EARTH AND SPACE SCIENCES

Geology, geophysics, physical oceanography, meteorology, atmospheric physics, seismology, petroleum, geography, numerology, topography, optical astronomy, radio astronomy, etc.

EN/CS/MA = ENGINEERING, COMPUTER SCIENCE/MATHEMATICS

Engineering includes technology, projects that directly apply scientific principles to manufacturing and practical uses, civil, mechanical, aeronautical, chemical, electrical, photographic, sound, automotive, marine, heating and refrigerating, etc.

Computer science includes new developments in software or hardware, information systems, computer systems organization, computer methodologies, and data, including structures, etc.

Mathematics includes the development of formal logical systems or various numerical and algebraic computations and the application of these principles, calculus, geometry, abstract algebra, number theory, statistics, and other topics in pure and applied math.

EV = ENVIRONMENTAL SCIENCES

Study of pollution sources (air, water, and land) and their control, waste disposal, impact studies, environmental alteration (heat, light, irrigation, erosion, etc.)

ME = MEDICINE AND HEALTH

Study of diseases and health of humans and animals, medicine, dentistry, pharmacology, veterinary medicine, pathology, nutrition, sanitation, pediatrics, dermatology, etc.

PH = PHYSICS

Theories, principles, and laws of governing energy and the effect of energy on matter, solid state, optics, acoustics, particle, nuclear, atomic plasma superconductivity, etc.

ZO = ZOOLOGY

Study of animals, animal genetics, ornithology, herpetology, entomology, animal ecology anatomy, paleontology, cellular physiology, animal husbandry, etc.

TL = TEAM—LIFE SCIENCES

TP = TEAM—PHYSICAL SCIENCES

Team Projects compete in two categories—life sciences and physical sciences. Each member of the team should be able to serve as spokesperson, be fully involved with the project and be familiar with all aspects of the project. The final work should reflect the coordinated efforts of all team members.

CHECKLIST FOR ADULT SPONSOR, SCIENCE TEACHER/EXPERT IN THE FIELD AND ELDER

Student Name _____ Grade _____

I have reviewed and signed the research plan. Yes No

The student and parent/guardian have signed the research plan. Yes No

SA = Strongly Agree

A = Agree

SD = Strongly Disagree

N = Neither agree nor disagree

D = Disagree

In your opinion this project reflects or maintains the following values:

(Circle the letters that most closely fits your opinion)

Knowledge of Language	SA	A	N	D	SD
Respect for Others	SA	A	N	D	SD
Cooperation	SA	A	N	D	SD
Respect for Elders	SA	A	N	D	SD
Love for Children	SA	A	N	D	SD
Hard Work	SA	A	N	D	SD
Knowledge of Family Tree	SA	A	N	D	SD
Avoid Conflict	SA	A	N	D	SD
Respect for Nature	SA	A	N	D	SD
Spirituality	SA	A	N	D	SD
Humor	SA	A	N	D	SD
Family R Hunter Success Roles	SA	A	N	D	SD
Domestic Skills	SA	A	N	D	SD
Humility	SA	A	N	D	SD
Responsibility to Tribe	SA	A	N	D	SD

Signature _____

Role _____

Date _____

FIRST ANNUAL ARCTIC REGION AISES SCIENCE FAIR 97

PROJECT REGISTRATION FORM

DEADLINE: ENTRIES MUST BE POSTMARKED NO LATER THAN NOVEMBER 13, 1997

To participate you must:

1. Submit this registration form by November 13, 1997 (entries must be postmarked no later than November 13, 1997).
2. Include a copy of your research plan or abstract.
3. Submit three copies of the checklist for adult sponsor, a science teacher/expert in the field, and an elder with their signatures.
4. Complete all information on this registration form.

PROJECT INFORMATION:

Type of Project:

 Collection Demonstration Experiment

Category Code _____ Grade Level _____

 Individual Project Team Project

Title of Project: (limit to ten words or fewer)

Do you require an electrical outlet? YES NO

SCHOOL INFORMATION

School name _____ Phone _____

Address _____ Fax _____

Village _____ Zip _____

Email (if possible) _____

Chaperone _____ Phone _____

Address of chaperone _____

PARTICIPANT INFORMATION

#1 Individual or Team Member

Name _____ Age _____

Nickname _____ Grade _____

Address _____ Home phone _____

Village _____ Zip _____

Tribal affiliation _____ Gender _____

SS# _____ Birthdate _____

#2 Individual or Team Member

Name _____ Age _____
 Nickname _____ Grade _____
 Address _____ Home phone _____
 Village _____ Zip _____
 Tribal affiliation _____ Gender _____
 SS# _____ Birthdate _____

#3 Individual or Team Member

Name _____ Age _____
 Nickname _____ Grade _____
 Address _____ Home phone _____
 Village _____ Zip _____
 Tribal affiliation _____ Gender _____
 SS# _____ Birthdate _____

RETURN FORMS /ABSTRACTS TO:

Ruthie Sampson
 Northwest Arctic Borough School District
 Bilingual Department
 PO Box 51
 Kotzebue, Alaska 99752
 FAX (907) 442-2392
 Phone: (907) 442-3472

RESEARCH PLAN ABSTRACT (REQUIRED FOR GRADES 9-12)

After finishing your research and experimentation, you are required to write a (maximum) 250-word abstract if you are in grades 9 through 12. An abstract is a summary of the whole project. It should begin with the objectives or purpose of the project followed by the methods and the materials used to carry out the project. It should conclude with the results obtained (in summary form) and/or the conclusions drawn. Use a separate sheet of paper. It must be no longer than 250 words. NOTE: A copy of your abstract must be displayed with your exhibit. Include in your data book.

Please Sign and have parent or guardian(s) sign below:

LIABILITY FOR EXHIBITS

Every effort will be made to protect your exhibit. However, since the science fair exhibition will be open to the public the Arctic Regional AISES Science Fair cannot and will not accept any liability or responsibility of any nature for any theft of, or loss or damage to, any exhibit or any other property of any exhibitor. Accordingly, it is recommended that each exhibitor take product precautions to prevent any theft, loss or damage to his/her exhibit and/or other property. Each exhibitor should secure and guard his/her exhibit and/or other property at all times during the exhibition, and remove all valuable components, especially those which are easily portable, when the exhibit and/or other property is left unguarded by the exhibitor. Computers should be secured with cables at all times by the exhibitor.

I have read the above paragraph, and understand and accept that the Second Annual Arctic Regional AISES Science Fair cannot and will not accept any liability or responsibility for theft or damage to any exhibit.

Participant signature

Parent/legal guardian signature

Participant signature

Parent/legal guardian signature

Participant signature

Parent/legal guardian signature

Adult sponsor

Date

PUBLICITY

The Second Annual Arctic Regional AISES Science Fair is a prestigious event, and your presence there is newsworthy. The organization or businesses sponsoring awards at the fair may want to publicize their involvement in such an important science competition by using photographs or information about you. Your cooperation may make it possible for other promising young student to get involved in science.

You have my permission to use appropriate information about me for publicity purposes. This includes any photographs, videos, or likeness(es) that may be used by AISES, the Second Arctic Regional AISES Science Fair, Alaska Native Knowledge Network, and/or Alaska Rural Systemic Initiative, or the sponsors for the purposes of illustrations, advertising or publication in any manner. I also consent to the use of my name in connection therewith.

Participant signature

Parent/legal guardian signature

Participant signature

Parent/legal guardian signature

Participant signature

Parent/legal guardian signature

Adult sponsor

Date

CONDUCT CODE

If your project is a team project, make one copy of this conduct code for each team participant. Each participant along with his/her parent or legal guardian must carefully read this conduct code and sign the code, and send in with the registration form. No student will be admitted to the fair who has not signed a copy of the conduct code.

Whenever there is a meeting or gathering under the name of AISES (American Indian Science and Engineering Society) the following conduct code is maintained. Having a safe environment for students and adults to learn and develop into productive community members is highly cherished by AISES leadership and membership. Therefore we request that you read over carefully the following code and sign as a symbol of your personal commitment to this code.

During the entire three days of the science fair (November 30–December 2), as well as during my travel to and from the fair:

1. I will not use or abuse any alcoholic beverages, nor drugs;
2. I will not engage in any verbal or physical abuse of any human being.
3. I will not engage in any sexual harassment nor inappropriate touching.

These values are important to me and I am proud to sign this document, to confirm my commitment to them.

Participant signature

Date

Parent/legal guardian

Date

THE SCIENTIFIC METHOD

COLLECTION/OBSERVATION (K–3 ONLY)

What? When? Where?

- Definition—Use senses to help define
- Labels
- Display—Sort by characteristics, qualitative and quantitative

DEMONSTRATION (K–12 LOCAL, K–8 STATE & NATIONAL)

How? When? Where? One Condition.

- Statement of Purpose
 - Why are you doing the project?
- Gather information
 1. Interview—Elder/Expert
 2. Literature Review—Sources of Information
 3. Observation
 4. Personal Experience
- Build a Model
- Charts, Maps, Flowcharts
- Pictures
- Explanation
- Application to own environment

EXPERIMENT (K–12)

Why?, What if? Turned into hypothesis. Two or more conditions.

- Hypothesis
- Sources of Information
- Treatment Group(s)
- Control Group
- Variables
 - Independent (being changed, input)
 - Dependent (outcome)
- Result
- Charts, Graphs, Data Table (keep a journal/log)
- Conclusion: Research paper?
- Application: Abstract