

## **Planning a Science Camp: Integrating Content and Cultural Standards Webinar Series #1**

**School of Education, U of Alaska Southeast**

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### **▣ Presentation Layout**

- ▣ Purpose
- ▣ Staffing
- ▣ Curriculum (Essential ?;s, Big Ideas, inquiry Cycle, 5 e's, 12 Most Powerful Words, Standards, and Culminating Task)
- ▣ Partners and Collaboration
- ▣ Student Recruitment
- ▣ Budget/Materials/Supplies/Equipment
- ▣ Rentals
- ▣ Camp Meetings-pre/during/post
- ▣ Assessments
- ▣ Student/parent/staff follow up
- ▣ Data share out and thank you's

### **▣ Purpose**

- ▣ Your intent. Your passion. Goal.
- ▣ Why? Who cares? What for?
- ▣ Why would students want to go to it?
- ▣ What is in it for them? Credit? Careers?
- ▣ Stewardship of the environment and Cultural Values  
(\*Emphasis on local traditional knowledge and indigenous people there for centuries adapting)

### **▣ Recruitment of Staff**

- ▣ Your program is as strong as your weakest link.
- ▣ Hire qualified, motivated, enthusiastic, and collaborative staff.
- ▣ (If not collaborative *yet*, groom them.)
- ▣ Testimony: Secondary honors science teacher CHANGED, from working in his class/lab comfort zone to TEAMING and utilizing local resources and people

### **▣ Curriculum**

- £ Scientist & Teacher Input and Ownership creates 'buy-in'
- £ As coordinator and grant recipient, you may have the goals and objectives, but let them help create or edit.
- £ Honor their experience of working with students and effective pedagogy

### **▣ Essential Question**

- ▣ The overarching question of camp/The big question of student inquiry ---The theme
- ▣ Students E Questions can relate to:
- ▣ *"How does this affect me?" or "What does this have to do with me?"*

α Examples of Essential questions:

α Why does research of our marine ecosystem affect our relationship with the way we will live?

α Why do traditional methods of putting up fish work?

α How do plants impact the quality of our lives?

### α **Big ideas**

Big Ideas are unifying themes that connect lessons to each other, so that students do not feel they are learning facts in isolation. For example, Life Cycles may be a Big Idea under which a teacher teaches a number of lessons about the life cycles of different organisms, each time following the steps of the Inquiry Cycle to encourage students to ask questions, create hypotheses and experiments to test their hypotheses, collect and analyze data, and present their results to their peers, parents, etc.

### α **5 E's in Science**

Engage, Explore, Explain, Elaborate, and Evaluate  
(Abell and Volkmann, 2006)

### α **The Inquiry Cycle**

A method of teaching science by which teachers actively model their lessons on the scientific method. In other words, teachers create a scientific environment in which their students act as scientists, following the steps of the scientific method at levels appropriate to their age/grade level.

### α **Learning Cycle Model and Inquiry Cycle**

### α **12 Powerful Words**

α What to do with Powerful Words

α Tell students why they need these words

α Reward students who use words

α Use the words in science lessons

α Talk a Mile a Minute

α Vocabulary

α Teachers use the words often

α Highlight science words

α Act out words

α Rap

α Require words in final presentation

α Post in dorm rooms

α Teachers role model words-skits

α Flip book (Picture/terms)-Glossary

α Words of the day-Pass to counselors

(ANSWER Camp, 2007-09, Sitka/Juneau)

### α **Standards Addressed**

α Content areas: Science, Cultural, Technology, Math, and Language Arts  
(reading, writing, speaking, and listening) standards-DEED website

- Western science &Traditional Ecological Knowledge (TEK, Culturally responsive curriculum, or Native Ways of Knowing)
- Alaska Cultural Standards website

### ▫Culminating Task

- The big event of sharing what you've learned. Publishing in various formats, inviting all involved-parents, community, science partners, staff, school board members.
- Challenge: Giving them enough notice and them fitting it in to their busy schedules.
- Solution: Document with artifacts: report, pre/post test data, pictures, video, or slideshow

### ▫Partners/Collaboration and Networking

- Players: Who is involved? Community Partnerships-key!!! Science/Cultural grants?
- Everyone has something to offer-Giving everyone a turn to talk--different thinkers personality traits-Talking stick or round robin.
- Create Meeting Norms-Respect, listening skills, timeliness, all voices heard Elders and culture bearers-time, tempo, respect and appreciation

### ▫Recruitment of Students

- Population you are recruiting: Heterogeneous? Particular population?
- Networking-Email parents and parents who are networked.
- Native community: Legislative, SHI, CCTHITA, Goldbelt, ANS
- £More aggressive and other recruiting modes mandatory!
- Start it early as families and staff make plans for summer early

### ▫Budget

- Materials, supplies, equipment
- Hardware.-T-shirts, camp posters, mouse pads, coffee mugs, H2O bottles
- MOA (Memorandum of Agreement) set up prior to camp-Be clear with staff on their pay—Interns too!!
- Elders need things in writing
- Personnel-Teachers, interns, logistics coordinator, elders, scientists

### ▫Budget (cont'd.)

- Staffing examples from 2005-09 camp
- \$25/hour-Elders and cultural specialists
- \$250 for 24-7 (overnight) -teachers
- \$30/hour for teachers
- \$11.80/hr-College interns
- \$7-\$10/hr for grades 9-12
- Pay for CPR/AED/1<sup>st</sup> Aid training (\$42-?)

### ▫Budget (cont'd.)

- Food-Students, Staff, Gathering/Celebration/Presentation Day, Healthy and local foods snacks

- α Open PO's is easy at Fred Meyer's and Costco
- α Supplies and equipment ordered early-What can you borrow from schools and scientists and what do you need?
- α Check with local caterers-ANS/ANB in SE?
- α Book materials-Quality, age-appropriate material
- £ Borrowed--Partners, Ordered early, Labeled
- £ Camp binders & Write-in-the-Rain Notebooks inserted, Dividers, set up prior to camp
- α Copies
- £ Local printer-great and quick-posters.fliers, brochures, prints
- £ Local video producers-ditto, DVD or CD copies (approx. \$3/DVD copy)
- £ Custom Embroidery or silkscreen Print-shirts/vests

### **αRentals**

- α Reserve in the early fall for the following summer
- α Boats or research vessels-Guides or research
- α Bus transportation-Laidlaw, Princess, or Goldbelt Heritage Institute in Juneau, STA in Sitka, and tourist companies
- £ Scheduling buses in advance, especially during tourist season, Chaperones on buses and students aware of rules
- £ Bus tokens and carpooling for students with no transportation—some too proud to accept it so it may have to be low-key, one-on-one

### **αRentals (Cont'd.)**

- α Buildings/Facilities
- α Research in the fall for following summer
- α Example camp locations:
  - £ Lodges
  - £ Church or boy scout camps
  - £ Schools
  - £ Vocational Training & Resource Center-CCTHITA
  - £ Juneau Arts & Humanities Council

### **αCamp Meetings/Supporting Staff**

Pre Camp:

- α JSD admin's, teachers, science agencies, Native organizations
- α Partner meetings-1-1.5 hrs-SEVERAL-keep to agenda! Some may ask off topic which eats time
- α Give plenty of time and reminder agenda notice as partners are very busy
- α Have a note taker and distribute-some partners may be absent
- 5-7 months prior to camp

### **αCamp Meetings/Supporting Staff (cont'd)**

**During Camp:**

- α If not there the whole time, take time to SIT with and LISTEN to each staff person.
- α Support each of them.

- αTake time to visit with and observe students and the dynamics of students and staff
- αTalk to students too
- αGive student/parent evaluations to fill out and have them LEAVE them
- αCamp Meetings/Supporting Staff

### **Post camp:**

- αBrief meeting
- αGive staff post camp evaluations (can give just before end camp)
- £Deadline for evaluations
- αSurvey-SCAT
- £Successes~Challenges~Attributes~Threats
- £Strengths & ways to improve for next year
- £Hi-Lows with staff, talking stick

### **Assessment**

- αDiagnostic (pretest)
- αFormatives-Quizzes and check for understanding/adapt along the way
- αSummative (posttest-same test as pre)
- αSurvey-Staff/Students/Parents
- £Quantitative-Lichert scale 1-2-3-4-5-6
- £Qualitative-Narrative, open ended
- αResult on data table/graph-Learning Gain Scores formula online

### **Assessment (cont'd.)**

- αNon-fiction Essay
- £Research shows essay writing demonstrates what students know and enhances rigor
- αStudents/Staff use scoring guide
- αGet input from school literacy specialists or science/English teachers when developing rubric(scoring guide) if you need that support

### **Assessments: The Best Tool for Advocating and Sustainability**

School boards, science or business agencies who sponsored likely want to see quantitative measures as proof of success

They are not AT camp so do not know if there were academic gains.

Testimony from all involved is important too

How do you know camp was effective?

Be proactive, focus on positives

Longitudinal data is hard to track, but may pay off for sustainability and funding opportunities. Keep good data!

Share with local newspaper agencies and community

### **Student Follow-up**

#### **\*the hard part in camps--longitudinal data...**

- αTrack students following camp if possible
- αContinue relationship with students
- £Be a support network, and an advocate for the student

£ The 'Power of Five' caring adults makes a positive difference for them!  
¤ Careers piece-Keep that in mind

### ¤Follow-up for Camp

¤Reflection: What worked and share it, what can you improve on for next time  
¤Complete Your Post camp report narrative before you forget key pieces!  
¤Honor and Thank staff, partner, and community for their efforts and contribution to the success of your camp  
¤Thank you letters, letter to local paper or Native agency community monthly letter, gifts from camp products

### ¤Resources

¤Abell, Sandra K. & Volkman, Mark J. 2006. *Seamless Assessment in Science: A Guide for Elementary and Middle School Teachers*. Heinemann, NH & National Science Teachers Assoc., VA, ISBN-13: 0-325-00769-1  
¤UAS ED 428 Science in the K-8 Curriculum syllabus/Resources  
¤State standards: <http://www.eed.state.ak.us/standards>  
¤Cultural standards: <http://www.ankn.uaf.edu/publications/standards.html>  
12 Most Powerful Words handout, SERRC ANSWER Camp, 2009, [www.serrc.org](http://www.serrc.org)

### ¤Credit and Kudos

My fondest memories as an educator for 25 years has been working with Alaskan camps involving science and Indigenous knowledge with AN students from around the state and teachers and staff who were high energy and also greatly enjoyed camps.

I appreciate the federal funding from Alaska Native Education Program grants and Alaska Native community partnerships, and local, state, and federal science agencies with the 15 summer and winter camps I've been able to coordinate or have coordinated with teaching teams.

I appreciate the cultural knowledge I have learned from various Alaska Native elders at camps and from Alaska Native Student Wisdom Enrichment Retreat (ANSWER Camp) in Sitka, sponsored By Southeast Alaska Regional Resource Center (SERRC).

The staff, students and community members involved have made each camp unique and successful.