



alaskaresource
E D U C A T I O N

501(c)(3) educational nonprofit

Presented to the House Resources Committee
Lunch & Learn
Tuesday, March 18, 2014

Igniting young minds
and
Inspiring students
since 1982



alaskaresource
E D U C A T I O N

Bringing natural resources out of the ground and into the classroom

Committed to the belief that we need to reach students

often and early,



ARE's mission is to teach students about Alaska's natural resources.

Supported jointly by the Department of Education and Early Childhood Development
and private industry



Dedicated to the sustainable future of Alaska



STEM-focused learning



Hands-on activities with local, tangible applications

WHERE DOES ENERGY COME FROM?

Finding Oil in a Cupcake

Essential Question: What are fossil fuels?

Time: About 2 hours

Girl Scouts learn about how geologists help find oil that is deep below the ground through a fun activity to find oil in a cupcake.

Vocabulary

- Fossil fuel
- Petroleum
- Non-renewable
- Porous

Information and Procedure

Materials

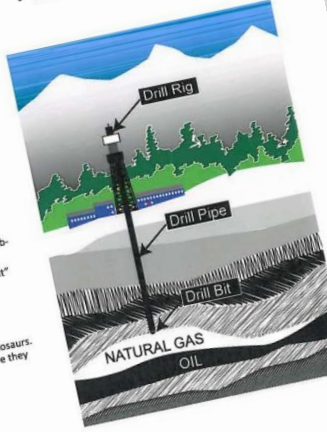
- Handout: What are Fossil Fuels?
- Cupcakes, 1 per Girl Scout (See info on "Preparing Cupcakes")
- Clear plastic straws
- Handout Finding Oil...In a Cupcake?
- Colored Pencils
- Sharp Knife

What to do in advance

- Collect resources and select useful websites.
- Print the "Information Scavenger Hunt" worksheet

Gear up

Introduce the idea that we use some resources today that are as old as dinosaurs. Explain what a fossil fuel is and where they come from.



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WHERE DO MINERALS COME FROM?

Jelly Belly Geology & Rock Identification

Essential Question: How do you identify rocks and minerals?

Time: 1-2 hours

Girl Scouts will learn to identify and classify rocks and minerals by their properties.

Vocabulary

- Geologist
- Classification
- Characteristics
- Opaque
- Translucent

Information and Procedure

Materials needed

- Small cups or bag to hold Jelly Belly's
- Jelly Belly's (see the Jelly Belly Key for flavors)
- Jelly Belly key and Rock Key
- Alaska Rock and Mineral Collection (40-specimen set can be checked-out at your local Girl Scouts office)

What to do in advance

Copy the attached handouts for the Girl Scouts. In each small cup, put 1 of each flavor of Jelly Belly

Gear up

- Discuss prior knowledge of rocks and minerals to gauge how much introduction or review to include in the lesson. Let them describe a favorite rock they have by using one or two descriptive words.
- Explain the term geologist. A geologist is a scientist who studies the solid and liquid matter that constitutes the Earth.

Explore


- Hand out the Jelly Belly's and Keys for the Girl Scouts. Instruct Girl Scouts to NOT EAT the Jelly Belly's because they are the rocks that they are going to classify and identify.
- Have the Girl Scouts start with the color of the Jelly Bean and follow the lines that most appropriately describe their Jelly Belly until they reach the flavor. Have them continue until all their Jelly Belly's have been classified.
- When finished, have the Girl Scouts taste test

their Jelly Belly's to see if they matched it with the correct flavor. Have them tally their answers as correct or incorrect and log it in the box on the Jelly Belly Key.

- Discuss that geologists are not always accurate in their assessments. Rocks can have many similar characteristics but still be different. It is important for geologists to conduct several types of tests and to repeat their work to make sure they are accurate. A mistake in real life could cost millions of dollars to the company.
- Have Girl Scouts partner up. Show them the Alaska Rock and Mineral Kit and explain that these are materials that are mined currently or historically in Alaska. Pull out the rocks listed on the Rock Key and hand one or two out (depending on class size) to each pair. Be sure to keep the lid of the Rock Key with you as they contain the answers.
- Instruct the Girl Scouts to classify their rock samples from the rock kit using the Rock Key. Have them write their answer next to their rock on a sheet of paper. Confirm with them if they matched the correct rock with the name.

Generalize

- What were some of the observable characteristics that helped you to identify one rock/mineral out of many?
- Why might it be important for scientists and geologists to observe and describe things carefully?
- What makes it difficult to identify one rock from another?



HOW DO FORESTS CHANGE OVER TIME?

Every Tree for Itself

Essential Questions:
What do forests need to survive and be healthy?
What is the relationship between plants and the non-living environment?

Time: 1-2 hours

Girl Scouts play a game to simulate how trees compete for their essential needs.

Vocabulary

- Competition
- Photosynthesis
- Drought
- Nutrients
- Roots
- Growth
- Motion

Information and Procedure

Materials needed

- 8" x 10" (20 cm x 20 cm) pieces of paper or paper plates
- Pieces of blue, yellow, and green paper or three colors of poker chips
- Markers or crayons
- Tree Cookie from the ARE kit, and additional tree trunk or branch cross-sections showing annual growth rings (if available (often available from tree-trimming services or forest industries))

What to do in advance

Cut two 3" x 3" (7.6 cm x 7.6 cm) squares out of blue, yellow, and green construction paper for each Girl Scout. To save time, you could use colored poker chips. Poker chips work much better than paper if you're doing the activity outdoors on a breezy day.

Gear up


Ask the Girl Scouts that if they were a tree and lived in the site tree, a small tree just starting out, or a tree that preferred shade. Why?

Explore

Pass out the Tree Cookie or any cross-sections of trees you have. Have your Girl Scouts examine the growth rings. (If you don't have an actual cross-section, draw a big one on a tree's age.) Explain that the number of rings indicates

Discuss

What do trees need so they can grow? Trees have some of the same needs as those of people and animals. For example, they all need plenty of water and nutrients. For which they get from food. But trees and people don't get food in the same way. Plants make their own food by using energy from the sun. If trees don't get enough water, nutrients, or sunlight, they may grow slowly or die. Growth rings show this graphically. In general, wide rings indicate good conditions for growth (plenty of nutrients, water, and sunshine) while narrow rings often indicate less growth due to drought, short growing seasons, insect damage, lack of nutrients or competition.



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ENERGY

MINERALS

FORESTRY

K-8 (adaptable 9-12) curriculum

STEM
FOCUSED

STATE GRADE
LEVEL STANDARDS
APPLIED

ALIGNED WITH
COMMON CORE

INTERDISCIPLINARY

Alaska Resource Kit

2013

168 Kits distributed
Statewide

YTD 2014

36 Kits distributed
Statewide



“Rock & Roll Around Alaska” Course



2013

43 teachers
from
23 schools
across
4 regions

YTD 2014

27 teachers
from
24 schools
across
2 regions



Youth Programs

2013

440 students
across
4 regions

YTD 2014

144 students
across
2 regions



Energy Einsteins



Minor Miners



Girl Scouts:
Women in Science
and Technology
Days

Classroom Visits



2013

89 classes,
2,256 students
across
9 regions

YTD 2014

30 classes,
667 students
across
7 regions



ARE and Girl Scouts Partner on Resource Education Patches!



Spring 2014 Launch Parties:

Energy: Anchorage (BP)

Minerals: Bethel (Donlin Gold)

Forestry: Juneau (TBD)

Natural Resources: Kenai (Apache, Hilcorp)

Looking Forward ...

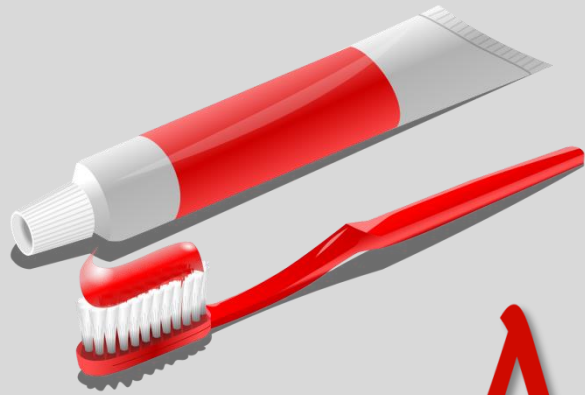
2 Rock & Roll Courses in
Fairbanks and Delta Junction



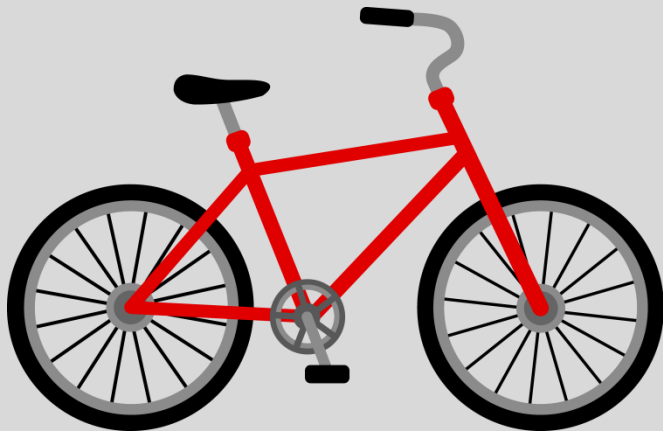
22 Classroom visits in
Fairbanks, North Pole, Delta Junction, and Anchorage

1 Youth Program

The Minor Miners are coming to AMA in Fairbanks!



ARE^{is} teaching
Students about the
Importance of Resources
in their everyday lives



How you can help

Alaska Coal Association and
Alaska Resource Education presents
The 21st Annual Coal Classic
Wednesday, June 12th at the Anchorage Golf Course
Breakfast, Registration, and Hosted Driving Range 6:00 am, Shotgun Start 7:00

SPONSORSHIP OPPORTUNITIES

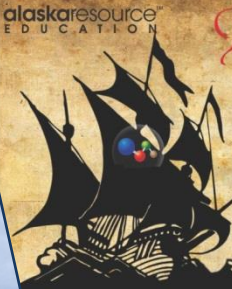
\$400 Breakfast Sponsor	\$200 Driving Range Sponsor
\$500 Beverage Cart Sponsor	\$300 Hole Sponsor
\$600 Lunch Sponsor	Specialty Item Sponsor
\$2,000 19th Hole Bloody Mary Bar Sponsor!	Door Prize Donation
	Goodie Bag Items (160 of each)

REGISTRATION FEES

\$1,000 Team (Four Golfers)	Great prizes and lunch included! Play "Par 3 Poker" and "Hire a Pro"!
\$300 Individual Golfer	

REGISTER BY FRIDAY, JUNE 7th
Call 907-276-5487 or
email golf@akresource.org


Proceeds benefit Alaska Resource Education


alaskaresource
EDUCATION

Pirate Party

Friday, October 25, 2013
7pm - 10pm
The Bridge Restaurant
Tis time to set sail for adventure
with Alaska Resource Education!

Captain Sponsorship (\$2,000)
Ye be the captain o' the seas! Pirate booty an' tickets fer sixteen o' ye shipmates!

First Mate Sponsorship (\$1,500)
Booty an' tickets fer ten o' ye shipmates to walk th' plank!

Deckhand Sponsorship (\$1,000)
Ye be havin' six tickets an' booty fer yer closest shipmates!

Tattoo Parlor Sponsor (\$500)
Ye be the scalliwag responsible fer colorin' yer shipmates!

Photobooth Sponsor (\$500)
Dead men tell no tales. Unless thar be pictures t' prove it!

Pirate Mugs Sponsor (\$500)
Givin' yer shipmates chalices fer drinkin' songs an' drinkin' grog!

276-5487 or visit www.akresource.org
an' join th' band o' pirates!


alaskaresource
EDUCATION
announces
their

Spring Raffle & Auction Fundraiser

at
The Alaska Miners Association Spring Convention
Centennial Hall, Juneau

February 14, 2013

Please consider donating a prize and help support
Resource Education in Alaska's classrooms!

Raffle Grand Prize
made possible by


Alaska Airlines

Win Two Round-Trip Tickets!
Valid anywhere Alaska Airlines flies, including Mexico and Hawaii. No blackout dates.

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kits@akresource.org

Executive Director: Michelle Brunner

QUESTIONS?

The word cloud for 'Ignite Alaska' includes the following terms:

- Ignite** (red, top left)
- Alaska** (blue, top center)
- 2,696 students taught** (blue, top left)
- 4 regions of Alaska** (blue, center)
- Innovate** (brown, center right)
- Educate** (green, bottom right)
- Invent** (red, bottom center)
- Inspire** (green, center left)
- 89 classroom visits** (red, bottom left)
- 27 Energy Einstein's** (brown, center)
- 43 teachers** (green, top right)
- natural resources** (green, top right)
- Minor Miners** (brown, bottom center)
- new Stuyahok** (brown, bottom center)
- Wainwright** (green, center left)
- Barrow** (blue, center left)
- Point Lay** (brown, center left)
- Bethel** (blue, center left)
- Juneau** (green, center left)
- Fairbanks** (brown, center right)
- Point Hope** (blue, center right)
- Mat Su** (brown, top center)
- Nome** (brown, top center)
- Kotzebue** (blue, top right)
- Anchorage** (green, top right)
- Sandpoint** (red, top right)
- Kivalina** (blue, top right)
- Atkasuk** (green, bottom left)