



Language Arts

Writing activities for students grades 6-9

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Walking through Petrified Forest National Park

Writing Activities in Nature Journaling

*In beauty may I walk
In beauty may I walk
All day long may I walk
Through the returning seasons, may I walk*

*Beautifully will I possess again
Beautifully birds
Beautifully joyful birds*

*On the trail marked with pollen, may I walk
With grasshoppers about my feet, may I walk
With dew about my feet, may I walk*

*With beauty, may I walk
With beauty before me, may I walk
With beauty behind me, may I walk
With beauty above me, may I walk
With beauty below me, may I walk
With beauty all around me, may I walk*

*In old age wandering on a trail of beauty, lively, may I walk
In old age wandering on a trail of beauty, living again, may I walk*

*It is finished in beauty
It is finished in beauty*

- Navajo Prayer of the Second Day of the Night Chant

Nature Journaling



What is it?

Nature journaling is the regular recording of observations, perceptions, and feelings about the natural world around you. The recording can be done in a variety of ways, depending on your interests and purpose. Some people prefer written prose or poetry, some through drawing, painting or tape recording. There are people who record data with mathematical precision, using scientific shorthand. Many people use a combination of all these techniques. We think it fits in perfectly with a unit on Petrified Forest National Park.

Why do it?

“Many people keep journals to explore their own creativity and express observations and experiences of the world more fully. Some keep journals to record information and data about a place they may visit many times. They keep journals to help improve and sharpen writing skills, and in the process learn to observe better. Drawing is used as a prime record-making tool because drawing and observing are mutually reinforcing activities. With practice, it can be faster to draw a squirrel jumping from one branch to another than to write out a full description of the squirrel's actions! Working in our journals gives us a chance to slow down, reflect and focus on a place - and in the process we establish a greater connection to the natural world. The information we collect in our journals can be used for research projects and shared with scientists and land managers that work in the areas we visit. Nature journaling helps you develop a real sense of a place and your role in that place. In our busy world, we often move quickly from place to place, without much thought or knowledge about the actual landscape we live in. Nature journaling gives us the chance to slow down and observe the world around us.”¹

¹ Leslie & Roth, *Keeping a Nature Journal*

Nature Journaling #1

Thirteen Ways Of Looking At A Blackbird



Goals

- To help students identify that nature writing is neither all detailed descriptions nor all personal thoughts and feelings, but a combination of the two, giving flexibility and variety to one's writing.
- To increase awareness and powers of observation about the natural world.
- To become aware of how important it is to protect our natural landscape and all its inhabitants from misuse or destruction by observing what happens in nature throughout the year.

Materials

- Journal, pen, pencil, colored pencils or watercolors
- Copies of the poem, *Thirteen Ways of Looking At a Blackbird*, by Wallace Stevens

Procedure

- Begin by reading aloud this excerpt from Bev Dolittle's, *The Forest Has Eyes*

My thoughts fly up like birds in the sky

I am free. I can fly.

I go everywhere. I see everything.

Towering mountain ranges

And a tiny flower growing in the desert.

I see cities and highways and a fallen tree.

I see a grandmother telling a story to a child.

I sit quietly.

But my thoughts fly up like birds in the sky.

Only I know where they go.

- Ask the students: When you sit quietly, where do your thoughts go? What do you see?
- In their journals, have students always include the date, time, location, and current weather. This will allow them to refer back to their notes, observing changes over time.

To initiate the writing activity

- Have the class read *Thirteen Ways of Looking At a Blackbird*, by Wallace Stevens.
- Find thirteen ways to describe something you are looking at. Go past first impressions and dig deep for ideas. Give an order to your images and consider what this might mean.
- Choose a spot (around the school or in Petrified Forest). Use all your senses to observe the natural world surrounding this particular spot. Close your eyes and focus on your surroundings for a few minutes. Try to separate yourself from civilization. What do you hear? Smell? Taste? Feel?
- Jot down your feelings, emotions, and sensations. What are your attitudes toward your present surroundings? What connections do you feel to this particular spot?
- Observe cloud patterns. Observe wildlife, including insects. Observe a tree, a bush, or a plant.
- Illustrate what you see.
- Listen to the wind and record what it sounds like. Try illustrating the wind.
- As you monitor the students, keep referring back to the thirteen ways of describing something.

Extension

Refer to Clare Leslie's book, *Nature All Year Long*

Petrified Forest Correlation

This journaling activity could easily be used as a piece of a longer visit to the park. Students could spread out in an area like the Painted Desert Inn & Rim Trail, the Crystal Forest Trail, and the Long Logs Trail.

If feasible, repeat visits could be made (for example, fall and spring), or annually, to see what has stayed the same and what has changed about the place and about them at the students' special spots.

Field Visit

Sites; See above

Park Personnel

Visit with park rangers and ask them about their favorite spots in the park. Ask them why they really like these particular places?

Other

See the park website & the park's Facebook page to communicate with rangers as mentioned above.
<http://www.nps.gov/pefo/index.htm>, <https://www.facebook.com/PetrifiedForestNPS>

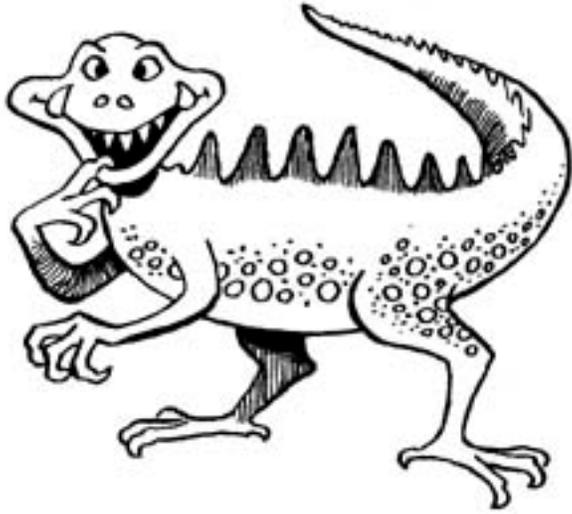
Utilize park brochures, <http://www.nps.gov/pefo/planyourvisit/brochures.htm>

Content Standards

AZ: SC S1C1; LA W-S1C1, W-S2C1, 4, W-S3C1

Nature Journaling #2

Metaphors, Similes, and Word Pictures



Overview

These activities focus on using metaphors, similes, and descriptive writing. You may want to read a poem or two to your students to arouse creative thinking. Give the students a set amount of time to walk with the group along a nature trail or explore an area where you can watch them. Ask that they use these two, five, or ten minutes to remain silent, yet open to their surroundings.

"I Am an Acorn" Metaphor Writing Activity

Ask your students to each select one item in nature that they can point to or hold in their hand. After the students display their objects to the class, each person in turn has to explain any traits he or she shares, or would like to share, with this object.

Start by saying, "I am a/an ____" and then following the statement with an explanation. For example, "I am an acorn. I am beginning. Someday I will become a mighty protector."; "I am a fern. I do not stand alone but with many others."

"I Am Like a Tree" Simile Writing Activity

Gather different items from the natural surroundings. Pick up two items and tell the students that they will work on their creativity as well as similes by connecting items that seem to have nothing obvious in common. The results may be silly or profound.

Have the children sit in a circle and get things started with some questions: How is an ant like a flower? How are clouds like trees? Once everyone realizes there are no right or wrong answers, the similes will start flying.

Create Word Pictures

Pretend that the objects around you lack names. What would you call the trees or the flowers based on their appearances? Don't forget to name streams and rocks. Encourage creation instead of judgment.

Grass could become: tickle-green, whisper stalks, ladybug ladders. Oak leaves could be called: fairy boats, tree fingers, squirrel umbrellas, wind voices.

Petrified Forest Correlation

This activity could easily coincide with a visit to the park. It could be used as a stand-alone, or in conjunction with other field trip objectives. Objects used for this activity when visiting the park can be handled as long as they are placed back where they were found and not removed from the park. The activity will have to be completed on site.

The park website & Facebook page could be used for information and photos that could be used to complete the activities. (<http://www.nps.gov/pefo>, <https://www.facebook.com/PetrifiedForestNPS>)

Content Standards

AZ: SC S2C2, S4,5,6; LA LA-S3, W-S2,3

Extensions

Silly Scientific Names

This is a fun game to introduce to anyone who enjoys puns and riddles that rely on word play. You will need a field guide to nature so you can show your students a few of the scientific names for common plants or animals. Sibley's field guides are one example.

You don't need to remember what the different elements of Latin translate to, but you can explain to the students that scientists name the things around them based on the characteristics of the object. The Latin names are a way for scientists to know they are talking about the same thing. The students will create scientific-sounding names (flavored with a hefty dose of humor) for the objects they encounter on the trail.

Examples of real scientific names:

- *Parus atricapillus* (Black-capped chickadee)
- *Rana sylvatica* (Wood frog)
- *Sassafras albidum* (Sassafras tree)

Examples of silly scientific names:

- *Acorna droponheada* (Oak tree)
- *Seede stealalota* (Gray squirrel)

The “Nice” Descriptive Writing Activity

Use this activity to encourage descriptive language and eliminate vague statements, such as, “The walk was nice.” or “The flowers are pretty.”

Ask the students if they found their class time outdoors a nice experience. Point out that “nice” is a vague word that doesn’t say much about an experience because everyone perceives things in different ways. Consider riding on a roller coaster. One person may get off a roller coaster and say the experience was “fun” while another person would describe it as “scary.” Ask each student to list five specific statements describing their time outdoors.

Nature Journaling #3

Change Goal

Learn about how one tree changes over time and through the seasons.



Objectives

Students have the potential to:

- Become aware and build understanding of the changing seasons, through the changes in local living things.
 - Practice observation skills, including description, metaphor, sketching, and identifying.
 - To identify and relate to one non-human living thing, on a cognitive and emotional level.
-
- To incorporate reading, writing, math, social studies, and art, with science.
 - To begin to build a sense of place by building a relationship with one local tree.

Materials

- *Sky Tree*, by Thomas Locker; journals, hand lens, ruler, pencil, and colored pencils; a variety of other materials (insect, bird, and tree field guide) and measuring/exploration tools (thermometer, compass, small spade, etc.).

Activity Procedures

- Gather students and prepare them for going outside. Be sure to cover appropriate clothing, safety concerns, agenda, and behavior expectations. At a minimum, bring journal and something to write with.
- Find a large deciduous tree near the school that you could have meetings under (if none exist, find a plant that you know has changes throughout the year). Ideally, this would be in a secluded spot, but not so far away from the buildings that it would require lots of extra time to get to it.

- Introduce the activity by asking students how they have changed since last year or since the beginning of last grade. Discuss. Introduce the book and how it is about how the world around us changes.
- Gather students and read aloud or have them take turns reading *Sky Tree* aloud, to the group. If appropriate, address questions listed on the bottom of each page of the book.
- Generate a discussion with students about how the tree changed through the seasons. Use questions such as; which picture was your favorite? Why? What was going on around the tree during winter? Was the tree dead? What happened to all the leaves the tree makes each year? How do animals around the tree cope with the changing seasons? How do we, as people, cope with the changing seasons?
- Direct students' attention to the tree you are sitting near. Ask them to find a partner and investigate this tree- its leaves, bark, wood, branches, soil it grows in, the animals that live on it and depend on it. Find 3 things about the tree that you think no one else will notice. Give them 5 minutes to investigate the tree.
- Bring the group back together and share what people discovered. Be sure to emphasize a sense of wonder with every discovery no matter how mundane.
- Have each student find their own place to sit where they can see the tree in a way that they like. Ask the students to sketch the tree or part of the tree, from that place.
- Bring the group back together and let them know that they will be visiting the tree several times throughout the year to see how it and the world around it changes with the seasons.
- Say good bye to the tree, wishing it well, and maybe offering it something to help it live as a way of saying thanks for being there. (water, a handful of soil, a hug, a compliment, protection, etc.)

Assessment

- Observe the students during activity. Are they engaged? What are they focusing on?
- Note what students contribute to group discussions. Ask students who haven't contributed to share at least one thing. Encourage no repeats.
- Ask students to label 5 specific things every time they draw the tree.

- Have students write essays on the tree, focusing on the specific objective you are interested in assessing.

Extensions

While the first section of this activity is a great stand-alone activity, it really doesn't begin to tap into the potential of these ideas. To get the most out of this, your students need to visit the tree many times throughout the year. Below are some ideas for future visits and lessons:

- Focus on animals living on or with the tree like insects, birds, or squirrels.
- Investigate the health of the tree. Is it sick or healthy? If sick, how is it sick?
- Investigate how people use the tree today? How have people used trees (and wood in general) in the past? How might future people use the tree?
- Focus on one part of the tree (bark, leaves, or roots). Use all your senses to get to know this one part really well.
- Focus on textures, smells, and sounds from the tree. Make a collection.
- Focus on weather and associated measurements by the tree (high/low temperature, wind speed, wind direction, precipitation, air pressure)
- Take measurements of the tree's height, branch width, and trunk circumference. Compare with the same measurements at the end of the year.
- Look at the world through the eyes of the tree. How does the tree see students, cars, wind, sun, rain, the school, birds, squirrels, etc.?
- Estimate how old the tree is and determine when the tree was born and the history that took place immediately around that tree. (Someone in the school might have a record of when it was planted if it is part of the campus landscaping.)
- Revisit the book, *Sky Tree*, and discuss questions at the bottom of each page.
- Measure the shadow of the tree several times throughout the year (at the same time of day), and use the differences to discuss how the Earth's tilt causes the seasons. Explore the different parts of a tree, and use it to highlight the different parts of most plants (roots, trunk, leaves, flower, fruit, seed)

- Do something significant to help the tree survive and thrive in the coming years. Consider laying mulch under the tree, since a tree's roots are often damaged by foot traffic and thin soils immediately next to the trunk.
- Count the leaves on one small branch of the tree. Estimate how many leaves are on the tree by counting (or estimating) how many branches of similar size are on the tree.
- In the spring, place a small plastic bag around one leaf of the tree when it is growing, for 10 minutes. Weigh the amount of water collected and estimate how much water the tree is using each day that it has leaves. (1 gallon of water = 8 lbs.; this activity is better suited to humid climates.)

Petrified Forest Correlation

A visit to the park could be done in conjunction with, at the beginning of, or at the conclusion of this project. This activity could also be adapted to use as a segment of a trip to the park that included other topics and themes.

Students could take a look at one of the lone cottonwood trees along the park road or in the PDVC courtyard.

Make contact with personnel from the park. Ask if they would be willing to give you monthly or seasonal updates on 'your' tree, along with photos, etc. This could be done via Facebook or e-mail.

Content Standards

AZ: SC S1C1, S4C1,2, S6C3; MA S4C4, S1C3; LA W-S1C1, W-S3C1, LA-S3

Nature Journaling #4

Getting the Real Picture!



Goal

Students improve their observation skills using different senses, descriptive words, and analogies.

Objectives

Students have the potential of:

- Developing a larger and more diverse understanding of observation.
- Identifying that drawing, the five senses, and analogies are tools of observation.
- Using new observation tools to take in information about the world around them.

Materials

Observation worksheet, hand lenses, 20 – 35 interesting natural objects, rulers, colored pencils, crayons, and pencils.

Teacher Preparation

1. Work out the logistics of where students sit and where their object for observation will be placed prior to beginning the activity. Optimal distance to objects should be 3-6 feet.
2. Be familiar with most if not all the items being observed by the students. Be ready to give high quality examples of what type of observations you are looking for. (i.e., an object is not just "black," it is "a dusty charcoal color with brownish smudges")
3. Practice or demonstrate how to use a hand lens with students.
4. It is helpful to have some examples of analogies for the some of the objects in the classroom written on the board. Students will understand analogies quickly using the format,
" _____ is like _____ because ..." sentence.

5. Some students are going to be frustrated or insecure drawing; be ready to help by demonstrating (on the board) or giving very practical drawing tips:

- Try drawing an outline of the item first, filling in the most obvious details next, and finally adding colors or finer detail last.
- Visualize the shapes that make up the object; for example, a robin has a triangle for a beak, a circle for a head, an egg shaped body, and a thin rectangle for a tail.
- Spend most of your time looking at the object and less time looking at your paper- try to take a picture in your mind of the particular part of the object you are drawing so that you can refer back to that mental picture as you draw.

Activity Procedures

- Engage students with the question, “How can we communicate what we see with others?” Discuss ways we do this (photos, measuring, drawings, movies, adjectives, analogies, etc.). Highlight how making observation, is a very important skill to learn.
- Tell students that they will be making observations about a certain object. The object should be placed between 3 and 6 feet from them. Each student can look at their object, but they cannot get close to it and they cannot touch it (they can touch later).
- In their notebook, each student should write at least 5 observations about the object and make a sketch of it using their pencils.

Concept Development

- Ask a few students to share some of their observations. Write these on the board.
- Tell students that we are going to explore what an observation is more deeply.
- Ask students to define or tell you examples of observations. Write their answers on the board as a working definition of observation. Some of their answers should include: shape, color, size, weight, and texture. Refer back to their observations as examples.
- Ask if there is anything they could do to make better observations of their objects?
- Discuss and highlight their good suggestions. Point out that most of the observations we make in school are like the ones we just did.
- Explain that there are a number of ways to make better observations than the ways we often use. Highlight the SAMS method for students, using examples. (See an explanation and examples of the SAMS method on the following page.)
- Explain that for them to effectively use their powerful tools of observations, they must be able to get close to the object, handle it, and examine it in many ways.

- Now direct the students to observe their objects more closely. Pass out the hand lenses, rulers, and colored pencils/crayons. If needed demonstrate how to use the lenses. Encourage them to observe the object in a way that no one else in the class would think of.
- Pass out the attached worksheet for the students to fill it out. Encourage them to spend time on drawing and labeling items and using the colored media. Encourage them to draw only one part of their object and to enlarge it as if we are looking through a hand lens.

Assessment/Evaluation

Ask students to compare their first list of observations and drawing with their second observations and drawing. Which is better and why? Ask each student to share their coolest observation, analogy or drawing.

Assess specific objectives by:

Objective 1: comparing first observations with the second set.

Objective 2: Look for drawing, analogies, and use of the five senses in their worksheet

Objective 3: At a later date, ask the students to make observations about what they see.

Check and see if they can remember and use the SAMS method.

SAMS

Use SAMS to help improve the quality of your observations. SAMS stands for: Specific, Analogy, Memorable, Senses.

Specific

Make your observations as specific as you can. Don't just say something is green.

Describe what kind of green it is. One way scientists get specific is by measuring things. How big, how heavy, how long, are just some of the measurements you could make. You could also measure by comparing the object you are describing with something others are familiar with.

Instead of: “I have a small, brown pine cone,” say: “I have a pine cone the size of a golf ball, 1 inch across. The cone is mostly brown, but it is darker brown on the bottoms of the little ‘branches’, with tiny bits of yellow and black colored wood towards the bottom.”

Analogy

An analogy is defined as anything you can say using the sentence “_____ is like _____.” When we use analogies, others understand better what we are saying because they can see a picture in their mind. Instead of: “I have a small pen with a round tip,” say: “I have a small pen shaped like a super fast rocket ship, with a nose like the front of a dolphin.”

Memorable

Don’t be booooooring!! Be exciting! Use new and different words; describe how something makes you feel. Describe in a way that you and others will remember. Instead of: “The toothpaste is blue,” say: “The toothpaste is a thick and gooey ice- blue gel, with small smoky bubbles inside. It makes me feel cold and tingly all over!”

Senses

Use ALL of your senses (except taste, since tasting can sometimes make us sick) to help others understand more. What does it smell like? What sound does it make? How does it feel? Does it feel the same all over? Just like scientists just special tools to look closer (microscope) or discern the temperature better (thermometer), we can use our special built-in tools, our five senses, to better describe things to others.

Instead of: “The rock is brown and small,” say: “The rock is really smooth all over, except in this one spot where it is very rough like sandpaper. It feels cold and smells like the concrete floor in the hallway. It makes absolutely no sound when you rub it on paper because it is so smooth, except when you rub the sandy part, and then it sounds very scratchy.”

Extensions

Continue to revisit the SAMS method:

- In reading, when you are reading books out loud, how does the author make quality observations? Are there places you could rewrite some of the observations to make them better?

- In writing, when you are practicing sentence writing, learning adjectives, or doing analogies.
- In math, when you are learning to measure or how to calculate surface area or volume.
- In science, when you are doing experiments.
- Anytime you are outside looking at the world around us.

This is the most important part of this exercise because ultimately, observations and our ability to describe things well are one of the foundational skills in all learning.

Source

Adapted from Teton Science School and the *The Private Eye*.

Background Materials

Ruef, Kerry; *The Private Eye*, The Private Eye Project: Seattle, WA; 1992.

Petrified Forest Correlation

This activity could easily be used as a piece of a longer visit to the park. Students could spread out in an area like the Painted Desert Inn & Rim Trail, the Crystal Forest Trail, and the Long Logs Trail. (Have the students find objects in their natural place to describe instead of gathering the objects into one spot.)

After the visit, when back at school, or during the visit if a spot is available to gather everyone, the class can discuss their observations.

Field Visit

Sites: See above

Park Personnel

Visit with park rangers and ask them about a favorite object from the park.

Ask them to describe it, using the SAMS technique.

Other

See the park website & the park's Facebook page to communicate with rangers as mentioned above

Utilize park brochures to find ideas for objects.

Observation Worksheet

Name: _____

List 5 new observations or analogies here:

1. _____

2. _____

3. _____

4. _____

5. _____

Look at your object with the hand lens (be sure to look underneath!).

1. List all the colors that you can find:

2. The surface looks like: _____

3. Imagine you are very small and on the surface of your object.

It would look like _____ because _____

4. It smells like _____

5. It feels like _____

6. It sounds like _____

Draw your object on the back of this sheet or another piece of paper.

Include as many specific observations in your drawing as you can!

Label the most interesting ones!

Content Standards

AZ: SC S1C1; LA W-S1C1, W-S2C1,2, W-S3C1

Nature Journaling Websites

If you need a rationale for journaling as part of your language arts curriculum, see 'Children Need Nature' at GreenHearted.org (<http://www.greenhearted.org/nature-deficit.html>)

Nature Journaling Generally

Anything by Clare Leslie Walker is very useful. Her books really help people "see" what they are seeing. She also gives great advice on how to keep a journal like the importance of dates and noting the weather, for example.

<http://www.clarewalkerleslie.com/books.htm>

<http://www.greenhearted.org/great-naturalists.html>

A Week-Long Program Based on Journaling

Joseph Cornell's Journey to the Heart of Nature is well worth having on hand, even if you don't guide visiting students through the whole program.

<http://www.sharingnature.com/journey.html>

Daily Journaling Over a Long Period of Time

The Kamana Naturalist Training Program is centered around a daily "sitspot" (I prefer Steve Van Matre's term: magic spots) and discusses the ritual of journaling (sketching and writing).

http://wildernessawareness.org/home_study/kamana.html

<http://www.greenhearted.org/nature-deficit.html>

Transformative Nature Study

<http://www.greenhearted.org/transformative-nature-study.html>

Green Language Arts

<http://www.greenhearted.org/green-language-arts.html>

Arts For the Earth

<http://www.greenhearted.org/arts.html>



Writing Activities in Petrified Forest

Prehistoric Poetry



Goals

Students summarize the information about Petrified Forest National Park into various poetic formats

Materials

Paper, pencil, park brochures

Focus

Poetry and science may not seem to have much in common, but together they make up an entertaining and effective way to develop students' summarizing skills. By using patterned and formulated poetry, students will have the opportunity to creatively combine the information they have learned about the park.

Procedure

Explain the following types of patterned and formulated poetry to your students. Have them choose one of the forms to create a poem about Petrified Forest National Park, Triassic plants, fish, animals, archeology, and paleontology, etc.

Found Poems

Found poems enable students to compose poetry by 'borrowing' lines from a text, or several texts. Students read or skim an article, making a list of words or phrases they like. For this activity, brochures from the park and other Petrified Forest materials would be useful for the students to use. Once they have generated a list of words and phrases they begin to combine the phrases into a poem, filling in with words of their own. Below is an example of a found poem using park brochures; which are available on-line at the park website. (<http://www.nps.gov/pefo/planyourvisit/brochures.htm>)

Bones, teeth, skulls

Whisper from the past.

Calling, Calling

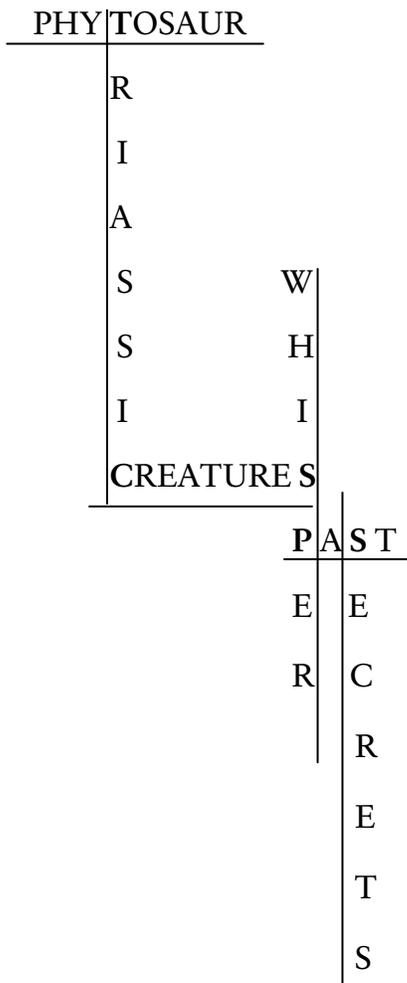
The surgeons of the earth

Discover, explore, know

The mysteries that we hold

Zigzag Poetry

This is a variation of the acrostic poem. With zigzag poetry students use both vertical and horizontal lines to compose their poem, while using a key phrase about a given topic. Students start by writing a word or phrase horizontally. Then choose a letter from the horizontal word(s), and form a vertical word from that letter. One of these vertical words is then used as the base for another horizontal word, and so on until the poem is completed.



Haiku

This is a Japanese form of poetry governed by the number of syllables in each line: five in the first line, seven in the second, and five in the third. Students could use a description in line one, an action phrase in line two, and a significant detail in line three.

Fabulous fossils

Treasures unearthed by my hands

Untold mysteries

Acrostic

An acrostic is a poem in which the letters of a key word are written vertically, and then used to begin horizontal words or phrases. All words or phrases should say something about the key vertical word. Begin by having each student choose their vertical word; for example, 'Triassic.' Next, have the students brainstorm words that might be associated with the Triassic. Once they have a substantial list of words they can compose their poem.

TIME

REACHING

INTO

ANOTHER WORLD

SILENT

SPEAKER OF

INCREDIBLE

CURIOSITIES

Content Standards

Common Core Standards

Conventions of Standard English

Knowledge of Language

Vocabulary Acquisition and Use

Extensions

The following poem types don't have to rhyme or follow a structure like a haiku, diamante, or acrostic. These list poems use sensory details or repetitions to give them cohesiveness. You can assign

a length to the poems, five, ten, or twenty lines, or allow students to work to a length that is right for their thoughts. These can all be adapted for use in a Petrified Forest lesson or unit.

Noise Poem

Select a location as the theme of this poem, such as the forest, the city, home, a soccer game, etc. The setting will be the title of the poem. Moving down the page, students list things associated with this place.

“Home” could include telephone, alarm clock, bed, television, table, chair, family, etc. Students complete this list poem by going back down their list and connecting a sound to each item, such as “Televisions chatter.” Some objects may require a bit of creative license, leading to “Beds snore.”

Color Poem

Each student selects a favorite color, which will be the title of her poem. Each line starts ‘(Color) is a _____.’ For example,

Blue is a glass of Powerade.

Blue is a bad mood.

Blue is the color of the Painted Desert sky.

Senses and Similes

Students select an object that they will compare to other things. To encourage creative comparisons, students will work through the five senses, in no particular order.

_____ tastes like _____

_____ feels like _____

_____ sounds like _____

_____ looks like _____

_____ smells like _____

Alternating Lines

Each of these poems, from Kenneth Koch's *Wishes, Lies, and Dreams: Teaching Children to Write Poetry* [Vintage, 1971] follows a two-line format that the students continue alternating throughout the poem.

I Used To/But Now – Begin every odd line with “I used to” and every even line with “But now.”

I Seem To Be/But Really I Am

Lie Poems

Each line in the poem is an obvious lie.

In my world,

Cats bark

Grass is violet

My mother is three-years-old

I use hummingbird milk on my morning cereal

Wish Poem

In this poem from Koch's *Wishes, Lies, and Dreams*, the class agrees upon three elements that will be common to each person's poem, such as a color, an animal, a place. Each line of the poem begins with the phrase “I wish” and includes the three elements in the determined order. For example,

I wish I had a purple car in my garage

I wish I had a blue dog in my attic

I wish I had a green helicopter at the park

Form and Content Poem

Another poem starter from Koch's *Wishes, Lies, and Dreams*, involves a repeating phrase such as “I once saw a _____ of _____.” To add a challenge to the poem, students fill in the blanks with a form followed by its content. For example, a form could be a chair, a desk, a book; while content is what creates the object.

Students can use obvious combinations, “a book of pages” as well as unexpected groupings, such as “a book of dreams.

Petrified Forest Writing Prompts



Goal

Develop writing activities that center around a **KEY WORD** or **THEME**.

Here are some possible suggestions that you might be able to use as springboards.

Footprints

Ecological footprints

Coordinate this with actual footprints left in the mud at your site or on the trails at Petrified Forest

See www.footprintnetwork.org

Survival

Today the park is part of the Intermountain Basin, and is semi-desert grassland. The climate is very different than the environment represented by the Chinle Formation and its fossils. Winters are cold with a chance of snowstorms, while summer is hot and thunderstorms bring the possibility of moisture. . . .drought is common, sometimes lasting for years. . . .what can survive in what appears to be such a barren place?

See <http://www.natureskills.com/wp-content/uploads/2011/03/favicon.png>

Cycle of Movement

Ancient peoples moved around a lot, including those at Puerco Pueblo and contemporaneous sites. Did they move around in accord with the seasons? When they left 'for good,' was this an 'ending' or simply another move in a continuous journey?

See www.nationalgeographic.com/.../lessons/09/g35/humanmigration.html

Investigations

What is Scientific Investigation? Describe an example of a scientific investigation.

Why are these investigations important?

What types of investigations are being done at Petrified Forest National Park?

See www.sciencespot.net/Pages/classgen.html

Route 66

Petrified Forest is the only national park which preserves a section of historic Route 66. Discuss and write about the Dust Bowl years, changes in travel over the years, adventure on the road, and all the different people who have passed through since Route 66 was established. If you could build your own personal Route 66, where would it start and end? What would you see along the way, who would you visit, etc.?

See www.historic66.com

Communication

Petroglyphs are like whispers from the past. For thousands of years, prehistoric people of the Southwest have used the surfaces of boulders, canyon walls, and rock shelters as a means of communication. Petrified Forest National Park contains many fine examples of these images pecked into stone.

How efficient do you think this form of communication would have been?

What do they mean? How old are they? Were they for daily communication?

Design and explain your own petroglyphs. Has the need for better communication driven the technology, or is it the other way around?

What might communication devices of the future look like?

See park brochure, 'Messages on Stone'

<http://www.nps.gov/pefo/planyourvisit/upload/Messages-on-Stone-Site-Bulletin-sb-2012.pdf>

Are You Superstitious?

Inside the park visitor center, you'll find an exhibit displaying a few samples of what the NPS calls "conscience letters." Since the 1940s, up to ten packages of petrified wood are mailed to the National Park Service each week. Most packages also contain anonymous letters telling of the numerous woes the thief has suffered since he succumbed to the temptation of taking home a few illegal souvenirs. Some letters include detailed maps directing the rangers to please return the artifacts to the exact place from which the petrified wood was stolen.

Most rangers believe the curse of the petrified wood is nothing more than self-fulfilling prophecy inspired by guilt. But tourists are not the only ones superstitious about the park's artifacts. In years past, traditional Navajos would not touch petrified wood because they believed it to be cursed. In Navajo legends, pieces of petrified wood or yei-bits-in were the bones of the greatest and fiercest of all the alien gods, a strong and mighty giant named Yei tso.

Do you have any superstitions? Do you think any superstitions and curses are somehow based in fact? Write about a superstition you may have.

The Petrified Paper; Newspaper Writing Activity



Objective

Each group of students will be expected to produce a newspaper dealing with different aspects of the Petrified Forest and Painted Desert by using multimedia.

Time

Several days to a week

Materials

Computers, printers, digital cameras, notebooks, pens, copy machine

Procedure

The class will be split up into teams of five to see who can produce the best newspaper representing a diversity of information and issues dealing with the Petrified Forest and Painted Desert.

The newspaper should include:

- a headline section dealing with today's issues

Hot Topics: Potash Mining, Endangered species, Theft and vandalism in the park, Funding for the National Park Service.

- a weather and climate section discussing either current weather or climate trends

Hot Topics: Global Warming, Changes in Climate & How It Affects(ed) Life at Puerco Pueblo, etc.

- a sports section about different animals and their behavior or athletic feats

Hot Topics: Pronghorn are the fastest land mammal in North America

- an entertainment section dealing with any recreation anywhere at the Petrified Forest, in Holbrook, on the reservations
- a life section that deals with anything from information on a historical figure to the use of a certain plant to different cultures and traditions
- any other section that the team feels would be creative and informative for its audience
- pictures, illustrations, editorials, and concise, informative writing
- Students and teachers can come up with other 'Hot Topics' as desired

Goals

- Each team will be expected to show competency with computers, graphics, printing, formatting, etc
- This is a big project where teamwork will be of the utmost importance.
- The newspapers will be presented to the class upon completion.
- The one voted the best will be mass produced and distributed to the rest of the school.
- Copies of the winning newspaper (and others) will be sent to Petrified Forest National Park.

Assessment

Many things could be assessed during this project. Most of all, the teacher should evaluate teamwork. After that, each newspaper should be assessed by an appropriate rubric that includes everything from creativity, expository techniques, and layout, to the basic conventions of English.

Petrified Forest Correlation

A visit to the park could be done to take photos, gather information, etc. The students would be on-site, investigative reporters. If the school had access to its own laptops, these could be brought along and writing could be done at the park.

- For history, culture, etc.: Puerco Pueblo, Painted Desert Inn, Rainbow Forest Museum, and other sites (CCC, archeology, private entrepreneurship, etc.)

Park Personnel

- Visit with park superintendent, and others to discuss relevant ‘hot topics’, Interview park personnel

Other

- Park website <http://www.nps.gov/pefo/index.htm> (visit with park personnel on Facebook)
- Park brochures, <http://www.nps.gov/pefo/planyourvisit/brochures.htm>

Content Standards

AZ: SC S3C1, S4,5,6; LA LA-S4, W-S1,2,3

Persuasive Essay



Goal

Students will create and present a persuasive essay

Objectives

The students will

- list local environmental issues
- form an opinion on an issue
- compose their feelings into an essay
- present their essay to the class

Materials

Paper, pencils, resource materials

Computer access for website extensions

Procedures

- Make a list of local environmental issues that the students came up with; examples could include littering, development of open space, public lands grazing, ATV use, air or water quality.
- The students should pick an issue they care about and list reasons to support their views.
- Students should develop a strong opening statement, and write a rough draft.
- After the revisions are complete have the students share their essay with the class.

Petrified Forest Correlation

Introduce and discuss the introduction of potash mining into the Holbrook area near Petrified Forest National Park. Discuss pros and cons. Discuss possible environmental and aesthetical impacts.

Field Visit

Sites

- Pintado Point Overlook
- Jasper Forest Overlook

Park Personnel

- Visit with park superintendent, etc.

Other

- Visit with mining representatives
- Visit with Holbrook Chamber of Commerce representatives

Content Standards

AZ: SC S3C1; LA W-S1, W-S3C4

Extensions

For more information on potash:

<http://en.wikipedia.org/wiki/Potash>

<http://www.intrepidpotash.com/>

<http://boingboing.net/2011/11/10/potash-mining-on-the-colorado.html>

Debates



High school students engage very well in well-organized debates. One option for assessing what students have learned at the park is assigning a debate on a current park controversy. Another way to use debates would be as an option for in-classroom, short-term interaction with the park. They could also be a springboard for service learning in some cases. An excellent side-benefit of doing debates about the park is that many students will continue to keep up with park news in order to find out what happens with the issue, building another bridge between the park and the community.

Debate Ideas (specific to Petrified Forest National Park)

- **Wilderness Area Policy:** What conditions need to exist in a wilderness area? What should PEFO's wilderness area policy be? (Ties perfectly to Leave No Trace trainings and is a current issue at the park.)
- **To Dig or Not to Dig:** What should we do about our archeological site with large unidentified items that were recently found in a survey? (Combines conservation issues with knowledge of archeology and surveying methods. Could also be applied to a paleontological site.)
- **Potash Mines:** Very important local issue that involves the park and everyone in the area. Ties to preservation, science, economy, etc.
- Debate topics should change as current issues at the park change.

Debate Format

There are many debate formats (which are easily accessible online). One possibility is outlined below.

Authentic Audiences

Since these debates deal with current local issues, teachers should make efforts to invite relevant local people to the debate or to help students prepare for the debate. They could serve as judges, assist teams in developing their arguments, or make presentations prior to the debates. There is also potential for students to bring their arguments to local meetings or write letters to relevant leaders.

90-Minute Debate Day Format

There are two ways to use this format. The first way is to use a list of arguments and randomly assign students different arguments to take in the debate as they enter the room. The second way is to let students choose their groups and/or arguments the day before the debate.

The debate is divided into three main steps: opening statement round, question and answer round, and closing statement round. 2-3 students judge the debate and declare a winner.

Materials Needed

For both options:

- This works best if students have an easy-to-reference source of information like a packet with readings to use for information during the debate.
- Desks arranged in groups with a number tent on desks. (Regardless of which option is used, all groups need a number or group name.)
- Write on the board:
 - 1) Sit at the table with your group number on it.
 - 2) Come up with an opening statement for the debate, your stance, and 3 supporting reasons. Everyone writes this down; one person presents.
 - 3) Make opening statements and take notes.
 - 4) Each person develops a question to ask another team. Write down your question.
 - 5) Teacher calls on different people to ask their questions of other groups.
 - 6) Develop a closing statement with your team. Everyone writes this down; one person presents. Make closing statements.
 - 7) Judges select winning team.

For random assignment of groups and arguments:

- A numbered list of possible debate stances (This could be teacher-created or the class could write out possible stances individually the day before and the teacher could compile the clearest arguments into a list. Another option would be to come up with the stances in a class discussion.)
- A box with numbers written on cards for students to draw as they enter the room (If you have 7 groups of 4, you should have 4 cards in the box with the number 1 on them, 4 cards with the number 2, etc.) Also include 2-3 “J” cards for judges. This could be a random selection or the teacher could choose based on personal needs and strengths of students.

Background knowledge or skills students need prior to lesson:

- Background knowledge on the topic being debated
- Some introduction to possible stances one could take on the issue (There is not enough time to complete the debate in 90 minutes without a solid grounding in the issue at hand and possible stances that one could argue.)

Procedures:

- (5 minutes) When students are seated with their groups, go over the process for the debate and the expectations.
- (15 minutes) Give students time to come up with their opening statements with their teams. Opening statements should be about 1 minute long. While they work, meet with judges and explain that they should read the list of different stances to make sure they're prepared for opening arguments. They should take notes during the debate and use some system for ranking arguments (rubric, 5-star system, etc.). Remind them that they should judge on the quality of arguments, not whose opinion they like best. They should be prepared with

questions during the question and answer round in case they need more information to make their decision.

- (10 minutes) Let the judges call up groups for opening statements. Students are allowed to ask clarifying questions after opening statements (i.e., “What was your point about banana boats?”) but not argumentative questions (i.e., “Why do you think that violence is the best solution to the banana transportation issue when it means that thousands will die?”) Students should be taking notes on what stands out to them in different arguments. What holes are there in the argument? How does the argument differ from their team’s argument?
- (7-10 minutes) Give students time to come up with questions for other teams. Their questions should address what they find to be weak points or points of controversy in other teams’ arguments. Students within a team should have questions for different groups. For example, Team 6 could have questions for Teams 1, 2, 3, and 4. They shouldn’t have 4 questions for Group 1. Talk to judges at this point and tell them that people should just stick to the questions and answers in this round. If they find that a question or answer is taking too long, they can interrupt and direct people to get to the point or even ask the teacher to move on to the next question.
- (25 minutes) Question and answer round. Inform groups that they can ask for time to conference about a question if they need time to come up with an answer. Select students that didn’t make opening arguments to ask questions first. Rotate around groups. You may need to look at the questions they’ve written to make sure that all groups get a question during this round. At the end of the round, ask judges if they have any questions that they need groups to answer to help them make their decision.
- (10 minutes) Allow students time to come up with closing statements. Closing statements shouldn’t be longer than about a minute. Their closing statements should not attack other groups, but they can make statements about why their idea is superior. (Example, “The bridge solution is the best because it promotes peace.” NOT “Group 4 is ridiculous because they love killing people.”)
- (10 minutes) Make closing statements.
- (5 minutes) Let judges confer and announce the winner of the debate.

Differentiation/Accommodation for diverse learners in your classroom:

- Judge positions can be controlled by the teacher. Students that have missed preparatory classes can be judges—that way, they are not a burden to a group and groups will need to be very clear in their arguments for the judges. Also, it gives the judges time to read the materials while the groups are preparing their opening statements.
- It can be difficult for some students to keep up with notes during the debates. Modifications to the note taking may be necessary, depending on student needs.

Attention to Literacy

Students read critically in order to develop a clear argument. The notes help students organize and clarify ideas and stay on task

Assessment and Evaluation of Student Learning:

Different point values can be assigned to different parts of the process. Notes provide a valuable assessment tool. Extra credit can be given to the winner. Students could be awarded extra points for extraordinary contributions to the debate. Rubrics or a class list score sheet can be used by the teacher to track individual and group contributions to the debate.

Content Standards

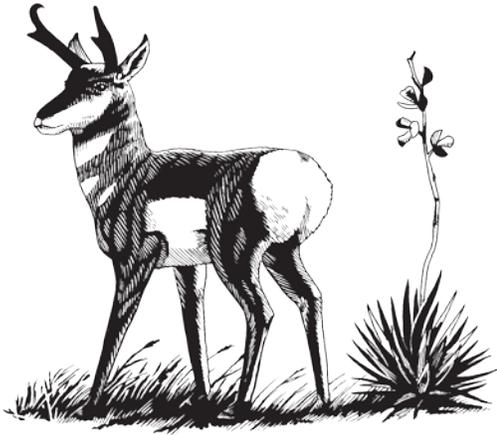
AZ: SC S3C1; LA W-S1, W-S3C4

Debate Rubric	Excellent 20	Good 17	Satisfactory 14	Needs Improvement 11	Score
Understanding of Topic and Information	You clearly understood the topic and presented your information forcefully and convincingly. All information presented in the debate was clear, accurate and thorough.	You clearly understood the topic and presented your information with ease. Most information presented in the debate was clear, accurate and thorough.	You seemed to understand the main points of the topic and presented those with ease. Most information presented in the debate was clear and accurate, but was not usually thorough.	You did not show an adequate understanding of the topic. Information had several inaccuracies OR was usually not clear.	
Presentation Style	You consistently used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience.	You usually used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience.	You sometimes used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience.	You had a presentation style that did not keep the attention of the audience.	

Use of Facts/Statistics	Every major point was well supported with several relevant facts, statistics and/or examples.	Every major point was adequately supported with relevant facts, statistics and/or examples.	Every major point was supported with facts, statistics and/or examples, but the relevance of some was questionable.	Every point was not supported.	
Respect for Other Team	All statements, body language, and responses were respectful and were in appropriate language.	Statements and responses were respectful and used appropriate language, but once or twice body language was not.	Most statements and responses were respectful and in appropriate language, but there was one sarcastic remark.	Statements, responses and/or body language were consistently not respectful.	
Questions	All questions were relevant and strong.	Most questions were relevant and strong.	Most questions were relevant, but some were weak.	Questions were not relevant	

Narrative Writing

Petrified Animals



Objective

Students will write stories using Petrified Forest/Painted Desert animals as the main characters in a natural or fantasy plot (narrative writing).

Time

Several days, adjust as needed

Materials

- pen, paper, imagination, maps of the park and surrounding areas

Procedure

- Study of PEFO animals through park brochures, maps, etc.
<http://www.nps.gov/pefo/planyourvisit/brochures.htm>
- Students will choose at least four animals to be main characters in a narrative that they imagine and then write down, using a plot that unfolds in a setting of their choice in the park.
- They will first research the setting--terrain, landmarks, historical significance, etc.
- They will decide if they will use first or third person point of view.
- They will decide if their story will be a natural, believable story or a fantasy one where the animals use dialogue. If they choose the natural story then they must include humans to take care of the dialogue.
- Students will be expected to go through the prewriting, drafting and revising, editing, and rewriting process.
- They will read their stories to the class and submit with at least one illustration.

Petrified Forest Correlation

Every animal inside of a national park is protected but they are constantly facing danger from cars, trash and pollution, people feeding them, other animals, and the environment. Introduce students to

the concepts of protecting natural resources and nature conservation. Their story could be about real life adventures of animals in national parks and their contact with humans.

Field Visit

Sites

- Any trails, etc. – reference the ‘panhandling’ ravens
- Park Personnel
- Visit with park botanist or biologist, etc.

Other

- See the park website & Facebook page for animal photos
- Utilize park brochures

Assessment

Students will be evaluated by the teacher on their adherence to the writing process.

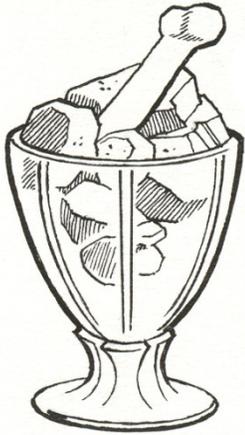
Peer review will help critique the effectiveness of the imagination and plot.

Content Standards

AZ: SC S4; LA W-S1,2,3

Descriptive Writing

Petrified Forest Time Capsule



Objective

Students will write descriptions of land and life they observe at Petrified Forest National Park, and write a personal description of their own life. Students will choose objects of interest, putting these and the writings into a time capsule.

Materials

- A sealable container, paper, pens, plastic bags, Objects of interest to the students that have some personal, societal, or cultural significance

Procedure

- Explain to the students what a time capsule is, how they have been used in the past; and what role they play in the future.
- The students will select a spot on the school campus where the time capsule will be buried after it is sealed.
- Each student will write a descriptive paragraph describing what the land and weather is like in the Petrified Forest National Park at present.
- They should also include descriptions of their own daily life--their schooling, sports, families, and other activities.
- Each student will also be asked to select a couple of objects to include in their “donation” to the time capsule. Examples might include newspaper clippings, a book, a plaster mold of an animal track, a ponderosa pine cone, a picture, etc.

Once everything has been placed inside the time capsule, students should decide where in the park they would bury it if they could. If desired, the class can seal and bury the time capsule somewhere in their school yard. Students will create a plaque or marker to go on top explaining when it was buried and when it should be interred and opened.

Assessment

The teacher should assess the descriptive writing, vocabulary, and grammar of each student’s descriptive essay.

Petrified Forest Correlation

Field Visit

- Sites: Puerco Pueblo, Newspaper Rock, Route 66, Painted Desert Inn, and others, would be good places to discuss the passage of time, etc.
- Park Personnel: Visit with park archeologist
- Other: See the park website Utilize park brochures

Content Standards

AZ: LA LA-S4, W-S1,2; SS 1SS-F2

Petrified Ghost Stories

Objective



Students will read and discuss the article on the haunting of the Painted Desert Inn. They will then write their own ghost story, based at some locale in Petrified Forest National Park.

Materials

Copies of the Painted Desert Ghost Story, paper, pencils

Procedure

- Introduce this activity by talking about ghost stories. Students are usually more than willing to share their own experiences of the paranormal.
- Distribute copies of the story. Read individually or together. Discuss.
- Students may work individually or in small groups to write their own paranormal story set somewhere in the Petrified Forest.

Assessment

The teacher will assess the descriptive writing, vocabulary, and grammar of each student's descriptive essay.

Content Standards

AZ: LA LA-S4, W-S1,2; SS 1SS-F

The Case of the Cigarette Smoking Woman at Petrified Forest National Park

Who haunts the Painted Desert Inn at Petrified Forest National Park?

Read this startling account of haunted doings at the Painted Desert Inn to complete the activity above.

Since 1924, motorists traveling Historic Route 66 have stopped here for rest and refreshments before taking a gander at a forest of trees turned to stone. The old inn once had a curio shop, a tap room, and what some call “the nation’s first restaurant chain.” But that was before the National Park Service renovated the building into a museum.

Almost 60 years ago, during the evening of April 9, 1953, the Painted Desert Inn caught fire. A park ranger broke down the locked door and crawled on his hands and knees into the smoke-filled building. He found Mrs. Marion Mace, the hotel manager, lying unconscious in her bedroom. The ranger carried the woman outside and laid her on the lawn. Then he returned to save the structure. After putting out the flames with a fire extinguisher, the ranger returned to his damsel in distress only to learn that his heroic efforts had gone for naught. Mrs. Mace was dead from smoke inhalation. No one knows for sure what caused the fire, but most people assumed the smoldering blaze had been ignited by a cigarette, for the flames had started in the manager’s bedroom, and Mrs. Mace was rarely seen without a cigarette between her fingers.

The Painted Desert Inn is now on the National Register of Historic Landmarks. A distinction Ranger Garcia is proud to point out. “Only 2,500 buildings are on that list,” she says.

Ranger Garcia worked as a guide at Petrified Forest for over 11 years. She has grown extremely fond of the old inn. It makes no difference to her that it’s haunted. “Old buildings talk,” Ranger Garcia says. “They shift. They creak. They moan. You hear things.” The ranger was working on the main level one afternoon when she heard someone coming up the stairs from the tap room below. “It was footsteps on stone,” she says, “but when I looked up to wave at the person coming up the stairs, no one was there.” Other employees report hearing whispered conversations coming from unoccupied rooms, and some have wondered if Mrs. Marion Mace is still lingering around after closing time.

After locking up one evening, one park ranger looked back through the windows and saw someone inside the museum walking from one room to another. Slightly irritated at the wayward tourist, the ranger unlocked the door and stepped inside. As soon as she entered the doorway, the ranger detected the unmistakable odor of cigarette smoke. Now the ranger was royally peeved. Not only was this tourist in a closed government building; the person had the gall to smoke in a museum! The ranger rushed from room to room in hot pursuit of her cigarette-smoking miscreant, until she realized there was no one in the building but her!

Adapted from:

<http://www.nationalparkstraveler.com/2010/10/case-cigarette-smoking-woman-petrified-forest-national-park7126>

Event Mapping:

Make a Map



Goal

Creating a map will allow students to become very familiar with one place and use art and literary skills to record their observations and feelings.

Materials

Map of area or create from scratch
Colored Pens/Pencils/Watercolors

Time

Varies for each outing and if it is a single experience or used throughout the school year

Procedure

- Either copy a map of the area to visit (Petrified Forest) or create your own.
- Each time you travel to this area, mark on the map significant events that occur, or things that you see that interest you.
- Have field guides and other resources available to help identify plants and animals that are new to the students.
- Allow students to go off and explore the area or lead ‘exploratory’ walks of the area.
- Give students time to write, draw, and paint on their map.
- Keep the map for use at a later date when you revisit the area.

Alternative

Use an area around the school for the map and keep track of the changing seasons etc. during the school year.

Resources

Adapted from an article in Orion Magazine; Hinchman, H. (2004). "Walks with Sisu". Orion Magazine March/April 2004.

Petrified Forest Correlation

This could be correlated with a visit or visits to the same area in the park. It could also be done with one visit, and then virtual re-visits. It could also be done virtually on-line or utilizing park brochures, etc.

Content Standards

AZ: LA LA-S4; SS 3SS-F1

Mapping the Colorado Plateau and the Petrified Forest



Goal

Students will become familiar with the location of the Colorado Plateau and Petrified Forest National Park in relation to their home, and will become familiar with their geographic features.

Objectives

The students will be able to

- Locate on a U.S. map the approximate boundaries of the plateau and the location of Petrified Forest National Park.
- Locate on the map: Holbrook, AZ, their school, several plateau laccolithic mountain ranges, the Colorado, the Little Colorado, the White, and other rivers, Lake Powell, four National Monuments, other parks or recreation areas, and at least five reservations.
- State the approximate altitude of the plateau and PEFO, telling how that affects climate and life on the plateau.
- Name four things that are unique to the region under study.

Materials

Maps of U.S. & Colorado Plateau area, map of PEFO, blank maps of the region (any showing the state boundaries), pencils, colored pencils

Procedure

- Using the large maps, have various students locate the areas mentioned. Have them relate this to home; how far? How long did it take you? What if you had to walk or ride a horse?

- Explain what a plateau is and why this is one. On the map show students the boundaries of the plateau, relating it to natural features (Wasatch Mnts., Uinta Mnts., Mogollon Rim, Rocky Mnts., Great Basin, etc.).
- Have a few of them outline it as reinforcement.
- Use slides or pictures of features unique to the plateau: National Parks & Monuments (Canyonlands, Arches, Grand Canyon, Canyon de Chelly, Monument Valley, etc.), layer cake sedimentation/laccoliths, endemic species (faded midget rattler, biscuitroot etc.). Talk about the importance and uniqueness of the region.
- Have them work in small groups to locate the various rivers and mountain ranges
- Explain the importance of altitude, and tell them that the Colorado Plateau is 4000' - 7000' high. Have them explain what this would mean in terms of the climate, plants and animals.
- Review with them all that you consider important.
- Give each student a map (small groups or partners may work better in some situations), have them outline the Plateau, locate and label as teacher sees fit.
- Students will write in the altitude and what they expect the weather to be like while they are here; name four unique features of the area.
- Go over the maps with students, and congratulate them on their knowledge.

Petrified Forest Correlation

This activity could be focused more directly on the Petrified Forest. A similar procedure could be used with only the Petrified Forest.

Field Visit

Sites

- Develop a checklist for students to complete while touring the park. Take the park brochure, white out the place names, etc., and then have students fill in the correct names.

Park Personnel

- Visit with park personnel to discuss boundaries, areas of the park, distances, etc.

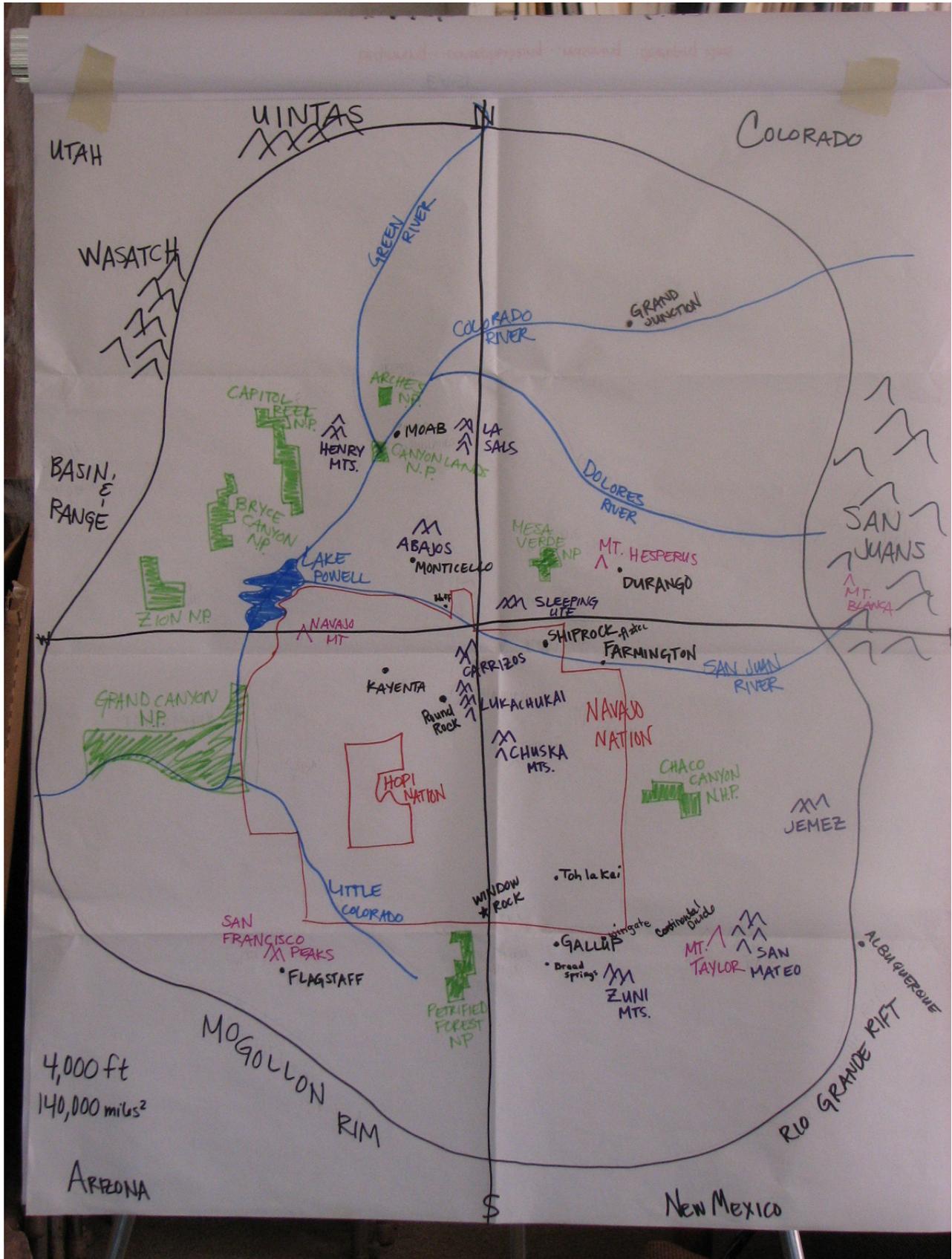
Other

- Utilize MapQuest, the park website, etc. for additional information and ideas.

Content Standards

AZ: R-S1C4, LA-S4; SS- 3SS-R1, 3SS-F1, 3SS-E1

Example of a Colorado Plateau map



Field Trip Guide

Audience

General Science Class (Elementary/Middle School)

Goal

To increase awareness and powers of observation about the world around us, both past and present

To demonstrate an ability to utilize multi-disciplinary skills in a single educational experience

To provide a framework for an organized, learning-based experience while traveling through Petrified Forest National Park

Standards

AZ: LA LA-S4, W-S1,2; SS 1SS-F2

Materials

- Phytosaur fossils (seen at the Rainbow Forest Museum)
- Field Trip Guide workbook
- Pencils

Procedure

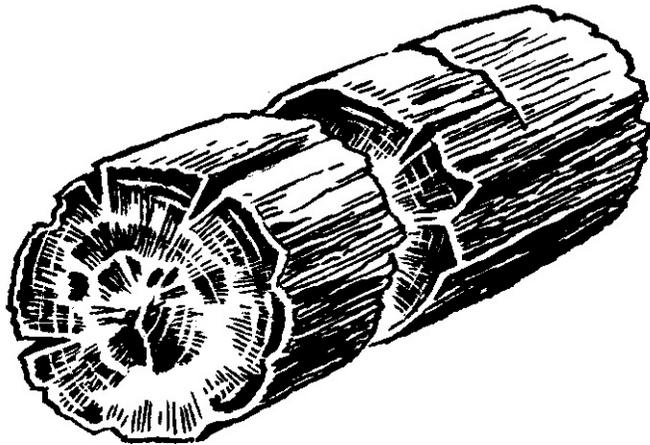
1. Upon arriving at the park, students stay in the bus while the teacher explains the procedures, distributes the booklets, etc.
2. The group then proceeds through the park, stopping at the designated spots along the way.
3. The booklet can be completed as desired by the teacher, either some or all in the park or waiting until the group returns to school.

Petrified Forest



Welcome to the Petrified Forest!

Date: _____



How We Are Going To Do This?

Small Groups will work on one of these little booklets as you go through the park. There are some activities at the end you could do the next week in class. Each group will have a teacher/leader. Play Bus Window Bingo as you drive through the park.



Stop#1: Park Video at Visitor Center

Write down six words you heard during the movie

(example: petrified)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Stop#2: Visitor Center Plaza



How many different geometric shapes can you find?

Example: circles

What is the total number of geometric shapes in the plaza?



Mountain Lion Statue

This is a statue of a petroglyph found in the park.

The original slab of stone is inside the Painted Desert Inn.

Does anybody know what a petroglyph is?



Dinosaur Statue

This is coelophysis (seal-o-fie-sis). It was a carnivorous dinosaur that probably walked on two legs. He (or she) was about 8 feet long and weighed about 50 pounds.

What is a carnivore?

What is an herbivore?

What is an omnivore?

Petrified Wood



Where did the petrified wood come from?

How long ago were the trees alive?

Petrification process for this area:

1. A tree by the edge of a river dies & falls into the river.
2. The log snags on a bank or gets washed onto a floodplain and is buried under sand, mud, and volcanic ash.
3. The log is cut off from oxygen and does not rot.
4. Silica in ash & water replaces organic material with quartz crystals.
5. The log is petrified (fossilized).
6. Erosion re-exposes the petrified log.
7. More erosion undercuts the log – it breaks into segments (looks like it's been cut, but it wasn't), some of which roll downhill

Easy Acronym: DOSE

D- DEAD & BURIED (by sediments of the river)

O- OXYGEN=NO (prevents rotting)

S- SILICA= YES (from volcanic ash)

E- EROSION (uncovers & breaks)

Stop#3: Chinde Point



The colorful land you see is nicknamed The Painted Desert and is part of the Chinle formation which represents sedimentary layers from the Triassic Epoch.

List some colors that you see:

What does sedimentary mean?

What do you think these layers tell us about what existed here during the Triassic?

Draw your version of The Painted Desert in the box below:

Stop#4: Puerco Pueblo



American Indians at Petrified Forest

Ancestral Puebloans --- what does 'ancestral' mean? What does 'pueblo' mean? Who are their descendants?

Navajos (Dine) were here---when? What evidence is there? Where is the Navajo Reservation in relation to Petrified Forest?

Apaches were here—passing through, probably trading, and maybe raiding ---but the evidence is ephemeral.

EPHEMERAL means? _____

Petroglyphs are images, symbols, or designs that are scratched, pecked, carved, or incised on natural rock surfaces. Created by people hundreds, even thousands of years ago, petroglyphs intrigue us and provoke many questions.

Take the walk at Puerco, take a look at the signs, and when you get to the petroglyphs, try to figure out what you think some of them might be (or mean).

Answer these questions:

What is a petroglyph?

Describe two petroglyphs you saw & sketch them from memory on the back of one of these sheets.

Stop#5 Blue Mesa (Optional)

If you have time to take this trail, read the signs and look for RAVENS!

A trapper in the north woods observes a common raven (*Corvus corax*) roll over on its back with its feet in the air next to a beaver carcass on the snow. A biologist laboriously climbs a cliff to band raven nestlings, and the birds' parents rain down loose rocks from above. A lone raven clamors loudly near a remote cabin, alerting a man next to it to look up and see a hidden cougar that is about to spring on him.

The trapper is convinced the raven was playing possum, pretending it had been poisoned to keep other ravens away so it could have the beaver carcass to itself. The biologist thinks the raven pair was deliberately trying to hit him with rocks so he would go away. The man at the remote cabin believes the raven had alerted him to save his life.

Which do you think is smarter?

Squirrel or elk? Bear or deer? Horse or duck? Dog or cat? 6th grader or 7th grader?

RAVEN or.....squirrel, elk, bear, deer, horse, duck, dog, cat, and monkey?



You can ask a ranger about his/her experiences with ravens in the park.
Ask why the ravens follow cars?

Stop#6 Giant Logs Trail & Rainbow Forest Museum



You can take the trail first and then look at some of the displays in the museum.



Here are some questions to consider while on the trail (using a Giant logs trail guide will help with your answers).

What was one interesting thing you heard when you picked up the petrified wood to look at it?
(Make sure you put it back where you found it!)

What is the name of the biggest log on this trail?

Why does it look like the logs are cut?

Who is the oldest student on the trip today?

Who is the youngest student on the trip today?

Which individual here is oldest and, therefore, closest to becoming petrified?

Back In the Museum

The Fight-O-Saurs! Take a look in the museum at the display of a cast Phytosaur skull to get an idea of the size of this animal and look at the diorama in the museum to see a model of two Phytosaurs competing.



Who do you think is fighting in this picture?

(Fill-in the blanks)

It is a _____ saurus and a _____ saurus
Fighting!

Phytosaurs (fie-toe-sores) were crocodile-like reptiles, some species reaching lengths possibly exceeding twenty feet. Phytosaurs are one of the most common fossils found in the park.

The Phytosaur was an early archosaur distantly related to the crocodiles which they resembled in appearance and semi-aquatic lifestyle. One notable difference between these animals and the crocodiles is that crocodiles have nostrils at the tip of the snout but phytosaurs' nostrils are situated on a mound just above the eyes.

Phytosaurs had long narrow snouts lined with sharply pointed teeth and were one of the top predators during the Triassic.

Answer these questions:

1. How long could a phytosaur get?

2. Phytosaurs are distantly related to what animal that still lives?

3. What is one difference between phytosaurs and crocodiles?

4. Phytosaur fossils have been found here, so what might that tell you about what this area once looked like (land/climate)?

5. How many students have white socks on today?

6. How many students are wearing a shirt that has writing on it?

Ask the ranger in the museum if there are any other Triassic fossil samples that you can see or handle or you can listen to one of the Triassic ranger programs that are held in the museum at certain times throughout the year.

**We hope you enjoyed your trip to Petrified Forest National Park!
Did you learn anything?**

Here are a few fun review questions:

How many different geometric shapes did you find in the Visitor Center plaza?

Coelophysis was a carnivore. What does that mean?

Describe how wood becomes petrified. (D O S E)

What do you remember about phytosaurs?

How many students are wearing white socks?

What is a petroglyph? Do you remember what any looked like?

Who is the oldest student on this trip? Who is the youngest?

What did you learn about ravens? Who are they smarter than?

What is a pueblo?

Why does it look like the petrified wood has been cut?

Have a safe trip back!

BUS WINDOW BINGO

Petrified Forest Full-Card Version



Directions: Verify sighting with your group teacher/leader!

Put an 'X' through those you see!

The Group that finds them all or does the best will get a special prize!





See if you can find these license plates while traveling through the park.

If you see one that isn't here, write it at the bottom of the page.



Origins of the Dinosaurs

Class reptiles and amphibians ruled the tropical wetlands that existed here over one million years ago during the Late Triassic Period. Then, some very different animals arrived on the scene to share the environment—small dinosaurs.

Fossil bones of an early dinosaur, *Chindesaurus ostromi*, were discovered near here in 1965, and the park immediately received worldwide attention. The fossil find was affectionately named "Gertie" after an early dinosaur dinosaur. The appearance of this small creature in the fossil record may be a key to understanding the origin, evolutionary rise, and success of the dinosaurs that followed.

The Chinle Formation contains a storehouse of knowledge. Amazing varieties of plants, animals, insects, and invertebrate fossils continue to reveal new and fascinating information about the life and times of a land that was very different.

Tracks of the Chinle Formation which led here from their own one million year old world.

Tracks of the Chinle Formation which led here from their own one million year old world.

Badlands

Badlands is a term that could send a shiver down the spine of an unimpaired explorer of the past. The term is related with indigenous people of Montana call "the Dakotas, the phrase made its way into the "Badland" Spanish language and is now used to describe the rugged, highly eroded landscape.

Summer thunderstorms and winter snow melt rarely cover the soil. Badlands are a mix of sharp ridges, spire pillars, and deep V-shaped gullies. Wind streams through tunnels, or "spits" inside the gullies and gullies, washing out loose soils and accumulating slopes that later collapse as slicks and slumps.

This landscape changes rapidly with every drought and drop of snow. Three inches of soil can wash away from the steepest slopes in ten years.

Badland topography is found throughout the world. Here in the United States, Badlands National Park in South Dakota, Bryce Canyon National Park in Utah, Death Valley National Park in California, and Theodore Roosevelt National Park in North Dakota also preserve examples of badlands.

Badlands in Theodore Roosevelt National Park, North Dakota.

Badlands in Theodore Roosevelt National Park, North Dakota.

Puerco Ruin Trail

The paved Puerco Ruin Trail winds among the ancient Puerco Pueblo. It features a variety of petroglyphs that the pueblo's inhabitants etched on surrounding stones.

Disentangling the tangle of the Puerco River, Puerco Ruin is a partially overgrown 100-acre site of a prehistoric pueblo. It is a large place, but it is a large place. Here, at the heart of Puerco Pueblo National Park's many archaeological sites, researchers have found evidence of human occupation from about A.D. 1250 to A.D. 1380.

Puerco Pueblo revealed the cultural bridge between the Mogollon and Zuni. The Mogollon lived in the south, and people of the Zuni lived in the north. Both groups and others in the north. Both groups and others in the north. Both groups and others in the north.

These sites on the trail to prevent damage to this important part of America's heritage. Badlands views of ruins and trails should be left alone so that petroglyphs may truly shine.

Gallery of the Past

Drawings—called petroglyphs—etched into these rocks allow a glimpse into the cultural life of the people who lived in Puerco Pueblo 800 to 1000 years ago.

Ancient artists chipped away the dark desert varnish coating the rocks, exposing lighter rock beneath. Their handiwork includes representations of human faces, beehive shapes, antelope, birds, lizards, and snakes. The exact purpose and meaning of the designs and representations is unknown.

These petroglyphs have survived for centuries, but our presence threatens them. The oils from a human hand can damage the petroglyphs, so please don't touch them. Vandals can destroy this area forever.

Distinctive petroglyph designs of Puerco Pueblo include representations of human faces, birds, and beehive shapes.

Life in the Plaza

Puerco Pueblo stood one-story high, with 2 to 3 acres of connected rooms surrounding a central plaza. The village, inhabited from about A.D. 1250 to the late 1300s, housed a number of families. The nearby river provided the water that nourished plant and animal life necessary for this pueblo community.

The residents of Puerco Pueblo farmed the dry slopes below the village, growing corn, beans, squash, and beans, while hunters sought game. Artisans created and decorated clay pots. On many days the pueblo's protected plaza bustled with activity. Imagine the sounds of metal grinding corn, of stone tools being chipped into shape, of chants or songs from the kivas, and of children's laughter.

Eventually, the people of Puerco Pueblo left, joining with the ancestors of today's Hopi or perhaps Zuni people. Fragments of their buildings and tools, and their petroglyphs on nearby rocks, remain to tell us of their existence.

Puerco Pueblo was a one-story village of approximately 100 rooms surrounding a central plaza. Within the plaza were several rectangular ceremonial rooms called kivas. This design remained a holy center even after the abandonment of larger Mesa Verde and Chaco Canyon pueblos to the west.

Santa Fe Railroad

Across the Puerco River the tracks of the Burlington Northern line stretched across the park to the east and to the west. While the tracks are now mostly overgrown, they were once a busy route from August to April. More than two miles a day pass through the park.

The Adams and Pacific Railroad built this important line across the badlands in 1881. That sparked the founding of many modern towns, including Holbrook and Window Rock.

The Fred Harvey Company, famous for excellent meals and hotels along the Santa Fe line, built grand hotels nearby. Fred Harvey National Monument during the 1930s. Passengers disembarked at the Adams station one mile to the east to visit their "painted town," an occasional "Harvey Cafe."

The advent of automobile-weight vehicles to the park along Route 66, which was later replaced by Interstate 40. Although the whole-stop town of Adams has disappeared and Route 66 through the park is mostly overgrown by the short grass prairie, trains still roll along the Burlington Northern Santa Fe Railroad tracks.

Pioneers of Paleontology

Paleontology (the study of geologic history through fossils) began in the badlands area before John Muir discovered fossil bones near here during the winter of 1891-1892. Muir deposited his specimens at the University of California at Berkeley, where they were later examined by anatomist Annie Silliman.

In 1917, Alexander discovered bones of a prehistoric mammal like a squirrel here at the Brown section of the park. The prehistoric paleontologist Dr. Charles Camp collected the bones. Camp spent the next eight summers collecting in the badlands. He made his first animal find during the 1920s and 1930s. Myl V. Walker and other park naturalists continued the scientific studies, mostly on their own.

The work of these "pioneers" of paleontology made Puerco Pueblo National Park a fossil area of worldwide significance.

Dr. Charles Camp (left) excavated bones in 1917. The efforts of Muir and John Muir (right) in the badlands led to the discovery of the first fossil mammal in the badlands. Camp's discovery led to the establishment of the Puerco Pueblo National Monument later that year.

Dr. Charles Camp (left) excavated bones in 1917. He used the photographs (right) among the badlands. Camp's discovery led to the establishment of the Puerco Pueblo National Monument later that year.

Petrified Forest



Petrified Soup

A Standards-Based Language Arts Unit for Grade 9

Introduction

Petrified Soup is a writing unit developed by the park to meet the needs of educators, and to instill in students a sense of appreciation for, and knowledge of, Petrified Forest National Park. The writing concepts presented here are centered around the natural and cultural history of the park, specifically as it applies to an American Indian presence in the area.

Educators will introduce these themes to their students by developing knowledge, concepts, and skills, conducting a site visit to the park with the assistance of a park ranger, and by following up with the development of additional essay and research writing as the classroom instructor deems appropriate.

Every attempt has been made to relate the stories and activities to geographic sites, archeological sites, animals, birds, and plants protected and preserved by Petrified Forest National Park.

Teachers are encouraged to consider a field trip as a culminating activity in which they can identify those aspects of the lessons as concrete examples within the park, developing an appreciation for the significance of place.

The title of the unit, 'Petrified Soup,' is reflective of the nature of the lessons, which are a collection of various reading and writing activities, and of the hope that teachers and students will add their own contributions to the literary concoction.

Benefits to Educators

The program concepts and themes are interdisciplinary with many of the lessons involving science and social studies, in addition to language arts.

Each lesson is aligned with Grade 9 Writing Standards, but the unit can be easily adapted to work with both lower and higher grade levels. Each lesson is designed to be taught using a cooperative and constructivist approach.

Goals

The goals of this writing unit are to:

- Develop an outreach program between Petrified Forest National Park and local school communities
- Provide teachers with instructional opportunities that integrate the study of science, mathematics, and social studies with language arts, providing a 'Writing Across the Curriculum' unit
- Promote student problem-solving, critical-thinking skills, decision-making, and cooperative learning skills
- Facilitate understanding and discussion of Native American ancestral and cultural connections to the park

Objectives

At the completion of this program, students will be able to:

- Use writing strategies, critical-thinking skills, decision-making skills, and cooperative learning skills
- Demonstrate a competency in meeting the writing standards outlined for the unit
- Recognize and evaluate the importance of ancestral and cultural connections that present-day people have with the park
- Develop an appreciation for a 'sense of place' and how it connects the past, present, and future

Arizona State Writing Standards Addressed – Grade 9

Note: These standards should be modified by the instructor as appropriate for his/her presentation. Those listed would be addressed by completion of the entire unit of lesson. Also note that even though these are Grade 9 standards, the lessons can be easily adapted for other grade levels.

Strand 1: Writing Process

Concept 1: Prewriting

PO 1. Generate ideas through a variety of activities (e.g., brainstorming, notes and logs, graphic organizers, record of writing ideas and discussion, printed material or other sources).

PO 2. Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.

PO 3. Determine the intended audience of a writing piece.

Concept 2: Drafting

PO 1. Use a prewriting plan to develop the main idea(s) with supporting details.

PO 2. Sequence ideas into a cohesive, meaningful order.

Concept 4: Editing

PO 1. Identify punctuation, spelling, and grammar and usage errors in the draft. (See Strand 2)

PO 2. Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.

Concept 5: Publishing

PO 1. Publish writing

PO 3. Write legibly.

Strand 2: Writing Components

Concept 1: Ideas and Content

PO 1. Maintain a clear, narrow focus to support the topic.

PO 4. Demonstrate a thorough, balanced explanation of the topic.

PO 5. Include ideas and details that show original perspective and insights.

Concept 2: Organization

PO 2. Include a strong beginning or introduction that draws in the reader.

PO 3. Place details appropriately to support the main idea.

PO 4. Use effective transitions among all elements (sentences, paragraphs, and ideas).

Concept 4: Word Choice

PO 1. Use accurate, specific, powerful words and phrases that effectively convey the intended message.

PO 4. Use literal and figurative language intentionally when appropriate

Concept 6: Conventions

PO 3. Use quotation marks to punctuate

PO 10. Use paragraph breaks to reinforce the organizational structure, including dialogue.

PO 11. Demonstrate control of grammar and usage in writing

Strand 3: Writing Applications

Concept 2: Expository

Paragraph writing during this unit will not be primarily expository in nature; however the following outline does a good job of laying out what we hope to address with our students.

PO 1. Write an explanatory paragraph and a multi-paragraph essay

Concept 5: Literary Response

PO 1. Describe story elements, such as setting, plot, characters, etc.

SIOP Features

These SIOP Features should be adapted as necessary to fit the unique circumstances of your classroom and your method of presentation. The boxes indicate that the author feels these would be addressed by teaching the entire unit.

Preparation	Scaffolding	Grouping Options
Adaptation of Content	Modeling	Whole Class
Links to Background	Guided Practice	Small Groups
Links to Past Learning	Independent Practice	Partners
Strategies Incorporated	Comprehensible Input	Independent
Integration of Processes	Application Assessment	Reading
Hands-On Individual	Writing	Meaningful Speaking
Listening Promotes Engagement	Oral	

ELL Strategies to Be Addressed

These ELL Strategies should be adapted as necessary to fit the unique circumstances of your classroom and your method of presentation. The boxes indicate that the author feels these would be addressed by teaching the entire unit.

Graphic Organizers

Game Playing

Thematic Units

Reading to Students

Semantics

Background for Story Elements

Here are some ideas and thoughts when addressing the story elements in each lesson:

Commonly identified elements of a story include plot, character, setting, and theme. The plot usually revolves around a problem or conflict that is presented at the beginning of the story and resolved at the end. Identifying the elements of a story aids in comprehension, leads to a deeper understanding and appreciation of stories, and helps students feel confident in composing stories of their own.

The experiences and background of the students determines the depth of the discussion and the detail that you use. Other story elements you might discuss include: conflict, resolution, atmosphere, rising action, climax, and turning point.

Have students consider stories on multiple levels, including decoding symbolism. Huckleberry Finn, for example, is, on one level, simply a story about two boys and their adventures growing up in a small Mississippi River town. On a deeper, more sophisticated level, it is a story about racism and the conflicts between freedom and civilization. Similar symbolism can be found in the selections in this unit. Use graphic organizers to reinforce story element concepts.

Background for Grammar

Here is a mnemonic device that may prove beneficial in teaching students the Eight Parts of Speech:

“8POS”

8 Parts Of Speech = CVAPPAIN

C C W & P

Contractions Connect Words & Phrases

V A A W

Verbs Are Action Words

A D N

Adjectives Describe Nouns

P R N

Pronouns Replace Nouns

P A A P

Prepositions Are Always Phrases

A D V

Adverbs Describe Verbs

I I S

Interjections Interrupt Sentences

N A P P T & I

Nouns Are People, Places, Things, & Ideas

Background for Writing a Paragraph

There is a plethora of ways to teach students about paragraph structure. Here is one option that works well, and once the basics of paragraph writing have been achieved, can be easily modified:

1 T + 3 S + 1 C = ¶

1 Topic Sentence + 3 Supporting Sentences + 1 Clincher Sentence = Paragraph

Lesson Sequence:

Please note that these lessons are not intended to be prescriptive and delivered unaltered. The concept behind 'Petrified Soup' is that, like the famous Marcia Brown story, 'Stone Soup,' various ingredients are added as the pot boils. That's where teachers and students come in. Look at the lessons as an outline of ideas and suggestions from which you and your class can develop new spices and flavors to enhance the basic recipe.

Most of the lessons begin with an overview of characters in a story who make Petrified Forest National Park their home today.

The section is called 'The Natural World.'

Next is the story derived from Native American sources, usually from the Navajo, Hopi, Zuni, and Apache people, all of whom have historical and cultural ties to Petrified Forest National Park and the Colorado Plateau. Comprehension questions are interspersed in these stories and may be used by the instructor in various ways as deemed appropriate.

A story elements section encourages the student to become familiar and conversant with the major components of an effective, well-written story.

A grammar section reviews the Parts of Speech, with questions correlated to the numbered paragraphs in the story.

A short writing activity follows which teachers may enhance, adapt, and change as they see fit. Add to the soup with your own ideas.

A short drawing activity concludes the lesson.

There are other lessons that do not follow the sequence described above, but their format will make the presentation self-explanatory.

Materials:

Copies of the lessons

Drawing paper, colored pencils, and other art materials as needed

Use the park website for maps, photos, brochures, and many other resources

Lesson #1

How the Crayfish and the Turkey Vulture Made the Painted Desert

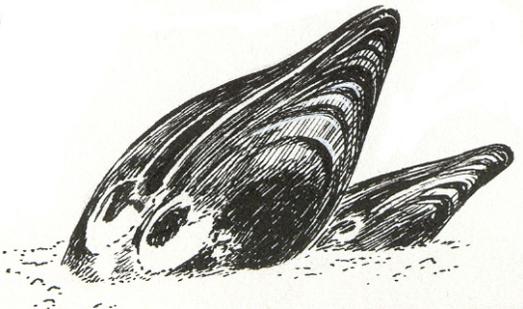
The Natural World

Did you know that the world's oldest fossilized crayfish was found in Petrified Forest National Park? Maybe you can see it for yourself when you visit the park. Crayfish are closely related to the lobster and are pretty tasty themselves. They have an open circulatory system, meaning the blood flows from the heart through the arteries, but there are no veins, so the blood circulates back through open sinuses throughout its body.

Turkey vultures don't have a voice box, so all they can do is hiss when they feel threatened and grunt when they're hungry. Do you know anyone like that? The turkey vulture also likes to urinate on its legs. Why? Well, for one thing, on these hot days in the Petrified Forest, the wetting cools the legs as the urine evaporates. Secondly, the urine helps kill any bacteria stuck on the bird's legs after it has been stepping around in its meal.

The Story (fiction)

(1)Way, way back, many, many years ago, everything at Petrified Forest was covered by water. The only living things were a few small animals floating around on a raft made out of ginkgo trees and cycad leaves. Nothing else could be seen above the surface of this vast river of water.



Any ideas what a ginkgo and cycad look like?

(2)One day, all the animals on this raft got together and decided they really need to get some land to live on so they wouldn't just float around endlessly. They asked for a volunteer to check out an old, old legend that far, far below the deep, deep water there actually was some land that had been buried many, many years ago.

What effect does repetition of words give to a narrative?

Public speakers do this at times, too. Why?

(3)The Crayfish volunteered to try and reach the bottom to see if these old stories were so. He dived off the raft, but the water was so deep he was unable to reach the bottom of this great river. Three days later, Crayfish tried again. He got a little bit farther than the first time, but he still couldn't see any land as he peered down into the deep dark fathoms. Finally, on his third attempt, after days and days and days of diving, he reached the bottom!

Why do you think so many stories, legends, and fairy tales utilize the number 'three'?

What might be that number's significance?

(4)Using his tail to scoop up the mud, Crayfish began scooping, scooping, scooping the mud into a great mud chimney that ever so slowly began to rise toward the surface. He worked tirelessly and rapidly, scooping and scooping, building and building the chimney higher and higher until the top poked through the surface of the water. The animals on the raft gasped, cheered, and then cheered some more as they saw real land for the first time. The old stories were true after all!

Is it possible to work tirelessly, but not rapidly? Explain.

(5)Crayfish kept at it until the mud began spreading to all sides, forming a great mass of soft earth. Crayfish kept at it until this great mass of soft earth had crept and oozed its way all around the world, forming solid islands of land in the great expanse of water. The animals piled off the raft, anxious to feel real earth beneath their paws and claws. They all agreed that Crayfish had done a great job and were quite effusive in their praise.

What does it mean to be 'effusive' in one's praise of another?

What does it mean to feel 'anxious' about something?

(6)However, you know how it always goes. They weren't quite satisfied. They thought the surface of the earth looked much too smooth and slippery and well, kind of the same. They thought the sameness would get monotonous and boring. They thought and thought and thought about this and wondered how they could sculpt the land so it wouldn't all look like one great flat plain of sameness.

What is 'monotonous and boring' about 'sameness'?

Why weren't they satisfied?

(7) That's when the Turkey Vulture had his great idea! Now Turkey Vulture has not always been known as a deep thinker, or even anyone who was all that smart. But this one time he really did have a kind of brainstorm. Turkey Vulture was a huge, huge bird with long and powerful wings. He decided to use those wings to make the sameness different.

Describe a 'deep thinker,' and what it means to have a 'brainstorm.'

(8) Off he went, flying along just above the top of the soft earth, flapping his great wings. When his wings swung down, they formed the gullies, arroyos, gulches, valleys, and canyons. When his wings swung up, they scooped up the earth and formed badlands, mesas, hills, and mountains. When Turkey Vulture didn't flap his wings and just sailed along, the land stayed flat and level like the plains and washes.

What's the difference among gullies, arroyos, gulches, valleys, and canyons?

(9) The Turkey Vulture, Crayfish, and all the other animals stood up on Kachina Point and looked down at the land. They were generally pleased with how everything looked, but you know how it always goes. They weren't quite satisfied.

But that's another story...

Where is Kachina Point?

Why are people so often never completely satisfied?

Story Elements

Setting/Place:

Where and when does the story take place?

Relate to a site in Petrified Forest National Park.

Imagine yourself standing at Pintado Point, Chinde Point, or Kachina Point and watching this all unfold.

Characters:

Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story? How would you describe them?

Plot/Problem:

What is it that one or more characters want to do or wants to happen by the end of the story?

What is the central problem of the story? How is it solved? How does the author want us to feel after reading the story?

Grammar

Featured Part of Speech = Nouns

A noun is a word that denotes a person, place, or thing. In a sentence, nouns answer the questions who and what.

Example: The *coyote* ran after the *jackrabbit*.

In the sentence above, there are two nouns. A noun may be concrete (something you can touch, see, etc.), like the nouns in the example above, or a noun may be abstract, as in the sentences below.

Example 1: Crayfish possesses *integrity*.

Example 2: Turkey Vulture was searching for *love*.

The abstract concepts of *integrity* and *love* in the sentences above are both nouns. Nouns may also be proper.

Example 1: She visited *Holbrook* every year.

Example 2: *Thanksgiving* is in *November*.

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

Used with permission – see website for additional materials

Find the concrete and abstract nouns in the paragraphs above.

Writing

Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Drawing

Example - Sketch a picture of a character from this story using only squares

Lesson #2

How the Painted Desert Got Painted

The Natural World

Petrified Forest National Park provides a unique place of protection and preservation for birds. They can find food and shelter that may not be readily available in other regions on their journeys from habitat to habitat. Patches of healthy, undeveloped habitats are found in our modern, extremely fragmented landscape, connected by vital, life-saving corridors like the Petrified Forest.

Like the canary in the mine, birds gauge the health and safety of our environment. By watching birds and their comings and goings, we can better note and understand the changes in our own world. Roger Tory Peterson said, “Birds are an ‘ecological litmus paper’...they reflect changes...they warn us of things out of balance...sending out signals whenever there is deterioration in the ecosystem...”

The Story

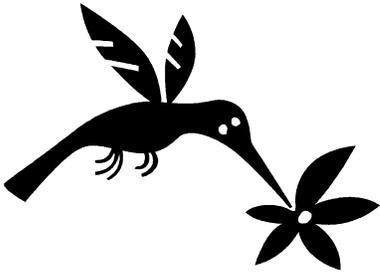
Despite all the herculean efforts of Crayfish and Turkey Vulture, the other animals were still not totally satisfied with how everything had turned out. They decided things looked too drab and needed a bit more color and life. This completely turned-off the TV (Turkey Vulture), so he just soared up to Pilot Rock and urinated on his legs. Crayfish was a little concerned as well. He wasn't as offended as TV, but became quite embarrassed when the others found out he had no veins and an open circulatory system. They started making fun of him and he turned red, slowly slid off a piece of petrified wood, and somberly sank back down into the dank depths.

So now what?

Well, it's up to you!

Storytelling, Writing, & Drawing

Below you will find a list of birds that can be found at one time or another in the Petrified Forest. Either on your own or in a small group, use birds from this list, maybe do a little research about them, and then prepare a story to tell, orally or in written form (or both), or make a children's book of drawings to complete the story started above.



Key for Bird List

R = Residents found in the park four months of the year or more

M = Migrants usually found twice a year during migration

O = Occasionals or accidentals that have wandered from their normal range

Purple Martin (M)

Chestnut-collared Longspur (O)

Green-tailed Towhee (M)

Blue Grosbeak (R)

Golden Eagle (R)

Snowy Egret (M)

Black-crowned Night Heron (M)

Olive-sided Flycatcher (M)

Rufous Hummingbird (R)

Red-tailed Hawk (R)

Mountain Bluebird (M)

Lazuli Bunting (R)

Gray Catbird (O)

Brown Thrasher (O)

Don't forget to use the following...

Story Elements

Setting/Place:

Where and when does the story take place? Relate to a site in Petrified Forest National Park.

Characters:

Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story? How would you describe them?

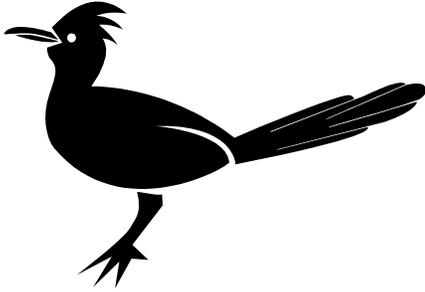
Plot/Problem:

What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How do you want us to feel after reading the story?

Lesson #3

The Legend of the Roadrunner

The Natural World



Roadrunners are quick enough to catch and eat rattlesnakes. They prefer walking despite their name, but when they have to they can get up to 17 mph. The roadrunner eliminates salt through its nasal gland instead of using the urinary tract like most other, perhaps more cultured birds. You might be interested to learn that it is a member of the Cuckoo family, characterized by feet with two toes pointing forward and two facing backward.

Your chances of being struck by lightning are 1 in 600,000. Thunder is a shock wave that results from the quick heating and cooling of air along the lightning channel. Most forest fires in the United States are caused by lightning. There are over 1.4 billion lightning flashes worldwide every year; 8,640,000 strikes a day; and 100 strikes per second.

The Story (fiction)

(1) Long ago, when the world was new, Roadrunner had beautiful multi-colored feathers, and he was very, very fast, just like he still is today. One day, when some men from Puerco Pueblo returned after hunting pronghorn and rabbits all day, they discovered that their fire had gone out and only gray ashes remained in the pit.

Make a prediction about what direction this story is going.

(2) Roadrunner happened to be standing up on top of the wall looking down into the plaza. The men asked him if he would be willing to run up to Pilot Rock and see if the Lightning God, the keeper of fire, could give him another fire stick to bring back to Puerco and get their fire going again. Roadrunner, who was generally a pretty congenial fellow, agreed, and started out for Pilot Rock, where Lightning God had been seen the day before. Roadrunner started out at a trot, but soon hiked up to full speed, darting here and there around the badlands, up the gullies, across the washes, and finally up the black slopes to the top of Pilot Rock.

Roadrunner was ‘generally a pretty congenial fellow.’ What does that mean?

(3) “What brings you up here?” asked Lightning God, who had seen the puffs of dust Roadrunner was leaving in his wake, and was ready to meet him when got to the top. Lightning God stood beside a brilliant red and orange fire that crackled and hissed in the middle of a gigantic pit circled by colorful pieces of petrified wood and sandstone.

(4)“The Puerco People let their fire go out when they were hunting,” Roadrunner said. (He wasn’t even out of breath from the nine mile run!) “They need me to take them another fire stick to get it started again.”

(5)“That’s their problem,” snarled Lightning God. “It’s their only foolishness in letting the fire go out. I’m not going to help them.”

(6)Roadrunner realized that Lightning God was unbending and that it was pointless to ask again, maybe even dangerous. He had to come up with another plan. Roadrunner stood around for a bit, pretending that he was pondering what to say next. Actually, he was waiting for Lightning God to turn his head just a little bit, so that for just a moment he wouldn’t be looking at Roadrunner. That moment came and Roadrunner quickly snatched one of the fire sticks from the blazing fire throwing it across his back and curling his tail over it, he speedily scampered straight down the side of Pilot Rock and out into the badlands.

When have you been ‘unbending’ and refused to change your mind?

Is being ‘stubborn’ a positive or negative? Explain.

What does it mean to ‘ponder’ something?

(7)Lightning God grabbed some flaming arrows and began hurling them at Roadrunner. What a site that must have been if you had been standing at Kachina Point looking off over the desert! As the arrows came singing at him, Roadrunner would dart off into an arroyo just in the nick of time. Unfortunately, as he ran the beautiful plumed feathers on his head were burnt off as flying embers from the fire stick sparkled and scattered over him. By the time he made his escape only a small tuft of feathers was left on his head. His back was singed to a dull brownish hue and eyes watered and turned red from the smoke.

Have you ever escaped something ‘just in the nick of time’? Explain.

What are some synonyms for ‘dart’?

(8)But Roadrunner made it! Lightning God finally gave up and stormed back into his secret cave in a cleft on Pilot Rock. Back at Puerco Pueblo, Roadrunner presented the fire stick to the people. When the people saw how his head feathers had been burnt away, how his back had been singed, and how his eyes glowed red from the smoke, they sang, “Shoik, shoik, shoik,” which means ‘Poor Bird.’

Have you had occasion to ‘shoik’ (sympathize) with someone lately?

(9)The Puerco People always remained thankful for Roadrunner’s sacrifice in enabling them to get fire once again. Their descendants of today still smile gratefully when they hear Roadrunner call out, “Thra, thra, thra!” whenever he finds a fat lizard.

Story Elements

Setting/Place:

Where and when does the story take place? This story takes place at Puerco Pueblo, Pilot Rock, and the land in between the two. What kind of land lies between these two places?

Characters:

Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story? How would you describe them?

Plot/Problem:

What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How do you want us to feel after reading the story?

Find additional ideas on what to include in a story on page 6.

Grammar

Featured Part of Speech = Pronouns

A pronoun is a word that takes the place of a noun in a sentence.

Example: *She* decided to go to the Painted Desert Inn.

In the sentence above, *she* is the pronoun. Like nouns, pronouns may be used either as subjects or as objects in a sentence.

Example: *She* planned to ask *him* about building a golf course near the Jasper Forest.

In the example above, both *she* and *him* are pronouns; *she* is the subject of the sentence while *him* is the object. Every subject pronoun has a corresponding object form, as shown in the table below.

Subject and Object Pronouns	
Subject Pronouns	Object Pronouns
I	Me

We	Us
You	You
She	Her
He	Him
It	It
They	Them

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

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Find the pronouns in the paragraphs above. Identify them as subjects or objects.

Writing

Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Drawing

Go on-line and find pictures of The Roadrunner and Coyote from the old Warner Brother's cartoon series. See if you can make your own cartoon characters patterned after those drawings.

Lesson #4

How Coyote Messed Everything Up

The Natural World

White-breasted Nuthatches are active, agile little birds with an appetite for insects and large, meaty seeds. They get their common name from their habit of jamming large nuts and acorns into tree bark, then whacking them with their sharp bill to “hatch” out the seed from the inside. White-breasted Nuthatches may be small but their voices are loud, and often their insistent nasal yammering will lead you right to them. They pass through Petrified Forest when migrating.

Botta's Pocket Gopher has smooth short fur. There is a lot of color variation - they can be pale grey, brown, tan to almost black. Some think the color adapts to the soil color they're living in. Botta's are stocky with short legs and long front claws. The eyes and ears are small and the tail is bare at the tip. Pocket gophers have fur-lined external cheek pouches that are used for carrying food around. The gopher can close its mouth behind its front teeth, so it can dig without getting dirt in its mouth.

The Story

(1)The Creator had planned right from the start what was best for the sky, the earth, the people, and all the animals, birds, fish, insects, plants, and every other thing He had put on this world. Originally, people were going to stay strong and vital forever. There would be no illness, disease, or injury. Living things would never grow old. Skin would stay supple, fur soft, feathers firm, and scales smooth.

Would you want to ‘live forever’? What would be some pros and cons?

(2)Everything was going along just fine, but you know how it always goes. Not everybody was completely satisfied! Coyote got to wondering if this wouldn't all be just a little, well, you know, boring if everything was perfect all the time. How about a little variety? So Coyote got some help from Loggerhead Shrike, the ‘Butcher Bird,’ and since they were both a bit devious, deceitful, and downright dangerous at times, it didn't take them long to concoct a strange mixture of locoweed, tamarix, camphorweed, and freckled milkvetch which they sprinkled in the rivers, springs, and washes, knowing that it would have a bad effect on those who drank it.

Agree or Disagree? Things would be boring if everything was perfect.

How could someone be ‘devious’ and ‘deceitful’?

Any ideas why the Loggerhead Shrike is called the ‘Butcher Bird’? (He's a resident of the Petrified Forest, so it might be good to know why he has this nickname in case you visit)

(3)And sure enough it did. One day a little bird with a white head came flying out of a cottonwood tree growing down by the Puerco River. "Everyone, look here, I am turning gray; I am growing old." This person was tsish'gai, the nut hatch; and after he had spoken old age descended upon many and their hair turned gray.

(4)You know, in the beginning everyone had been given strong white corn for teeth. They were solid and clean; and the plan was that they should remain so forever. But then one day, shortly after taking a drink from a pool in the wash, a Hastin Naazisi, the Gopher, came running frantically into a camp near the Agate House. Gopher's face was badly swollen and he was obviously in great pain. "Oh, oh, someone help me" he groaned, "I have a terrible toothache. Pull my bad teeth for me." So they pulled the bad teeth, and only two remained that were really good. After that time it became a fact that people suffered from toothache, that teeth became old and worn.

(5)It wasn't long before others started to notice some changes. Jackrabbit developed arthritis in his hind legs, the showy Heliotrope's flower dried up, Pallid Bat's eyesight started getting so bad he could only see at night, and the Puerco People began arguing over who should get the largest rooms and who could use which kiva.

What were some of the consequences of the strange mixture Coyote put in the water?

(6)Coyote laughed and laughed and laughed. He thought he was sitting pretty, but you know how it always goes. Yes, he had a good laugh until he realized that what he had unleashed on everyone else would come back to bite him as well!

What sobering, startling realization came to Coyote?

But that's another story...

Story Elements

Setting/Place:

Where and when does the story take place? The Puerco River and Agate House are mentioned in the story.

Characters:

Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story? How would you describe them?

Plot/Problem:

What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How do you want us to feel after reading the story?

Grammar

Featured Part of Speech = Adjectives

An adjective is a word that modifies, or describes, a noun or pronoun. Adjectives may precede nouns, or they may appear after a form of the reflexive verb to be (am, are, is, was, etc.).

Example 1: Gopher lived in the petrified agate house.

Example 2: Tsish'gai is small, but loud.

In example 1, two consecutive adjectives, petrified and agate, both describe the noun house. In example 2, the adjective small appears after the reflexive verb is and describes the subject, Tsish'gai.

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

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Find the adjectives in the numbered paragraphs above.

Adjectives answer: What kind? What size? Which one? How many? What color?

Writing

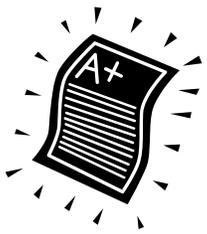
Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Drawing

See if you can sketch perfection and imperfection. What shapes, sizes, and colors will use to portray each?

Get some ideas by completing the chart below.



PERFECTION

Flunked science class Failed the test Mess up quite a bit

Always do the right thing Forget to do things

Lesson #5

COYOTE ROBS THE FIREFLIES

The Natural World



The scientific name for coyote is *Canis latrans*, which means 'barking dog.' They are native only to North America. Because of their keen intelligence and acute senses, they can adapt to almost any environment. Chicago says they may have as many as 2000 of them living in the city! Coyotes use 10-15 different sounds to communicate amongst themselves, not counting their legendary yapping howl. They are an important spiritual symbol for many indigenous people, seen as both a trickster who causes

all kinds of trouble, but also as a dispenser of many good things for this world and its people. These two sides of coyote mirror the bad and good we often observe in people.

How do fireflies produce light? Well, it's a chemical reaction consisting of Luciferin (a substrate) Luciferase (an enzyme), ATP (adenosine triphosphate), and oxygen. Some scientists think they can turn the light on and off at will. Their bioluminescence is incredibly efficient with very little heat being given off as wasted energy. Less than 1% of a firefly's light is given off as heat, whereas a normal light bulb gives off only 10% of its energy as light, with that other 90% wasted as heat.



A few reasons trees are important and we shouldn't cut them all down:

Trees keep our air supply fresh by absorbing carbon dioxide and producing oxygen.

In one year, an acre of trees can absorb as much carbon as is produced by a car driven up to 8700 miles.

Trees provide shade and shelter, reducing yearly heating and cooling costs by 2.1 billion dollars.

Trees lower air temperature by evaporating water in their leaves.

Tree roots stabilize the soil and prevent erosion, and provide food and shelter for wildlife.

Trees improve water quality by slowing and filtering rain water as well as protecting aquifers and watersheds.

Trees provide protection from downward fall of rain, sleet, and hail as well as reduce storm run-off and the possibility of flooding,

In this story, Coyote has a chance to redeem himself for all the trouble he caused everybody when he and Butcher Bird tainted the water. Let's see what happens...

The Story (fiction)

(1) After the Maker formed the Earth, he created Haschin to be his assistant. Now there were already animals, birds, and fish living throughout the world. Haschin's job was to make the Earth a good place for people to live. Haschin gave the people tools, including weapons, and instructed them in their use. He patiently taught the people how to protect themselves, build houses, and hunt for food. When all of this was done, Haschin had a meeting with Coyote because he felt something big was still missing.

How did Haschin assist in making the Earth a good place for people to live?

Demonstrate the difference between patiently and impatiently teaching someone something.

Why did Haschin meet with Coyote?

(2) 'Coyote,' Haschin said. "These people know how to protect themselves, how to construct houses, and how to be successful hunters. However, they don't yet have anything with which to cook their meat."

(3) 'Well, what do you want me to do about it,' said Coyote somewhat testily. 'Let them take care of themselves. I always eat my meat raw and it tastes fine to me!'

(4) 'No, that just won't do,' replied Haschin. 'I have been commanded by the Maker to make the Earth a good place for people to live. They don't have to eat everything raw if they have fire, plus it will keep them warm on those cold desert evenings. Go to the Land of the Fireflies and bring back some fire!'

What was the 'big thing' Haschin felt that people were still missing?

Demonstrate saying something 'testily.'

(5) Coyote grudgingly headed out, and after traveling for several days, he arrived at the Land of the Fireflies. These guys lived at the bottom of a tremendously deep hole—basically an enormous cave carved right into solid rock. The sides of this cave were incredibly smooth and Coyote wasn't quite sure how to get down without slipping, sliding, and plunging to a certain death. He wandered around for a bit, unsure of what to do next. Then he saw a Little Tree growing right by the edge of the hole.

(6) 'Hey, Tree, help me get down there,' commanded Coyote. The Little Tree, being an obliging kind of plant, saw no harm in doing so, and began sending one of its roots down the side of the open pit. The root slithered and shimmied like a skippering snake, winding its way into the darkening depths until it reached the bottom.

What's the difference between grudgingly or obligingly doing something?

(7) Coyote took a deep breath, jumped onto the root, and slid speedily to the bottom, his fur fanning out behind him and his ears flopping wildly. But he made it down safely. Once there, it took a bit for him to grow accustomed to the tarry darkness. Soon, though, he began to see little pinpricks of light dancing and darting in zigzagging patterns here and there, flying all around his face and legs and paws.

(8) Coyote started playing with the little Fireflies, pretending to be their friend, trying to give the impression that he had no other motive in mind when he descended into the cave other than to just play with them. They romped around, running and flying back and forth. You see the Fireflies guarded their fire quite carefully, and would not let anyone even touch it. Only they approached it when necessary to rekindle the little flames they carried with them on their backs. But Coyote succeeded in getting them to let down their guard.

Do you see pinpricks of light dancing around when you close your eyes?

What does it mean to 'let down your guard'?

How was Coyote getting the Fireflies to do this?

(9) Coyote, whom some might call deceitful, had tied a tuft of cedar bark onto the tip of his tail. Suddenly, he dashed away from the dance, and through the great fire that always burned in the center of the village. He was off before the Firefly people knew what he had done. When they discovered that he had stolen some of the fire, they were mortified, and set out in pursuit, but Coyote was very swift of foot and reached the wall of the pit far ahead of them.

(10) 'Little Tree, help me out!' he called. 'Help me out, or I'll cut you down!'

Little Tree, an obliging kind of plant, drew its roots up, up, up, while Coyote held on and was drawn safely out of the hole.

(11) Then Coyote ran quickly back to where the people were living, still eating raw meat. He showed them how to gather wood, start a fire, and cook nice, delicious antelope steaks and rabbit roasts. Coyote, himself, even tried a morsel of barbecued badger, and decided it wasn't too bad, though he still preferred his meat raw. Haschin was pleased.

Why might some call Coyote 'deceitful'?

Describe when you might be ‘mortified’ by something.

Find something illogical in Coyote’s demand that the Little Tree help him.

Use one word to describe Haschin, Coyote, Little Tree, and the Fireflies.

Story Elements

Setting/Place:

Where and when does the story take place?

Relate the story to a site in Petrified Forest National Park.

A good spot for this story in the Painted Desert might be imagining a deep crack descending into the depths on the top of Pilot Rock or Chinde Mesa.

Where do you think would be a good location for this story?

Identify a tree in the park somewhere that might be ‘Little Tree.’

Characters:

Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story? How would you describe them?

Plot/Problem: What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How does the author want us to feel after reading the story?

Parts of Speech

Featured Part of Speech = Verbs

A verb is a word that denotes action, or a state of being, in a sentence.

Example 1: Coyote *dashed* away from the dance.

Example 2: Haschin *was* pleased.

In example 1, *dashed* is the verb; it describes what the subject, Coyote, does. In example 2, *was* describes Haschin's state of being and is therefore the verb.

There may be multiple verbs in a sentence, or there may be a verb phrase consisting of a verb plus a helping verb.

Example 1: Coyote started a fire, cooked rabbit, and burped loudly after the meal.

Example 2: The fireflies would not let anyone approach.

In example 1, the subject *Coyote* performs three actions in the sentence, *started*, *cooked*, and *burped*. In example 2, the verb phrase is *would let*.

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

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Find the verbs in the numbered paragraphs above.

Writing

Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Drawing

Sketch the ideas of deceit and mortification. What colors would you use to portray patience and impatience?

Lesson #6

Why the Mule Deer Has No Gall and the Pronghorn Has No Dew Claws

The Natural World

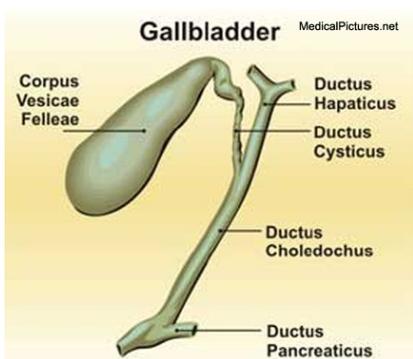


Entirely unique on this planet, the Pronghorn's scientific name, *Antilocapra americana*, means "American antelope goat." But the pronghorn is neither antelope nor goat -- it is the sole surviving member of an ancient family dating back many, many years.

The Pronghorn is the only animal in the world with branched horns (not antlers) and the only animal in the world to shed its horns, as if they were antlers. The pronghorn, like sheep and goats, has a gall bladder, and like giraffes, lacks dewclaws. The pronghorn is the fastest animal in the western hemisphere, running in 20-foot bounds at up to 60 miles per hour. Unlike the cheetah, the speed specialist of the [African plains](#), the pronghorn can run for hours at quite a fast pace.



Eumetazoa Mule deer (*Odocoileus hemionus*), or black-tailed deer, which have dew claws and are indigenous to western [North America](#), are named for their large [mule](#)-like ears. Mule deer are ruminants, meaning they have four-chambered stomachs. This extra space lets them store food for later digestion. Mule deer lack a gall bladder and that enables them to eat vegetation that most other animals, including domestic grazers, couldn't handle. After a chunk of something eventually deemed indigestible gets chewed, swallowed, and works its way through the multi-chambered stomach, it still has about 70 feet of intestines to navigate before it finally gets excreted.



Now, the mule deer has no gallbladder. How big of a deal is that? Well, as noted above, it means they can eat stuff that animals with gall bladders can't. The gallbladder is a small pouch that sits just under the liver. It stores bile, a bitter yellowish, greenish liquid which helps to digest fats. After you get done eating and digesting, the gallbladder is flat and empty, like a deflated balloon; but, before a meal, it's full of bile and about the size of a small pear. When you eat, the gallbladder helps in digestion by squeezing this bile into the small intestine. Bile doesn't react well with the fatty cells in some vegetation common in the West,

so by not having to worry about gallbladders squirting bile around, the mule deer can feast on a veritable plethora of plants.

Now, remember we said that the pronghorn does have a gall bladder, but doesn't have dew claws. The mule deer lacks a gallbladder, but has these dew-claw things.



So, what's a dew claw? dew·claw / [doo-klaw]

1. It is a functionless claw of some dogs, not reaching the ground in walking.
2. Is it an analogous false hoof of deer, hogs, etc.

Maybe these little factoids of the natural world escape most people's attention, but the indigenous people who live in the Petrified Forest noticed all this a long time ago.

They even have a story that explains why this is so...

The Story (fiction)



(1) One morning some children were playing near their summer house, which sat on a hill across the Puerco River north of the main village. It was a very hot day and incredibly windy, just like it can get sometimes in the park during the summer today. They saw a pronghorn go ambling by and then someone mentioned that that hunters had brought back a mule deer the night before. They started talking about these two animals with whom they shared the high grasslands.

(2) "Let us find a Mule Deer's foot, and the foot of an Antelope and look at them, and maybe tonight we can get grandfather to tell us why the Mule Deer has the dew-claws, but the Pronghorn doesn't. It's a cool story."

(3) "Sounds good, and then let's see if we can get him to tell that other one about why the Mule Deer has no gall on its liver, but the Pronghorn does. Maybe we can take a look at the deer the hunters brought it will they are butchering it and take a look!"

(4) So they went back across the muddy rivulet of water, back to the pueblo, to look about where the hides had been grained for tanning; and sure enough, there were the feet of both the Pronghorn and the Mule Deer. On the deer's feet, or legs, they found the dew-claws, but on the Pronghorn there were none. This made them all want to know why these animals, so nearly alike, should differ in this way.

What did the children want to know?



Have you ever wondered why an animal or bird looked or behaved a certain way? Describe.

(5) Walking a little farther through the village, they saw where the Mule Deer was hanging up while the men were cutting her open. They watched carefully when the intestines were revealed, moved up closely to see the liver, and sure enough, there was no green sac hanging there—no gallbladder. They knew, though, from helping dress Pronghorn, that they had this pouch. Again, it was curious that these animals, so alike in so many other ways, should differ in these two other ways.

(6) That night they sat around a small fire near the square kiva you can still see at Puerco Pueblo today. Shadows from the fire danced around on the rock walls, and a nice cool breeze wafted across the plateau, helping to refresh the people, the animals, and the land after such a hot, dusty day. Grandfather was ready to tell them the story.

What's a kiva? Have you seen the one at Puerco Pueblo? Where have you seen others?

(7) He placed before his grandchildren the leg of a Mule Deer and the leg of a Pronghorn as well as their livers.

"See for yourselves before I tell you why and how it happened."

"We see," they replied, "and today we found out for ourselves it's true, but we don't know why."

(8) "Of course you don't know why. Nobody knows much of anything until someone tells them, and now I'll tell you, so you'll know, and then you can tell your children someday."

Discuss written and oral records, tradition, and history.

(9) It was long, long ago, of course. All these things happened long ago when the world was young, as you are now. It was on a summer morning, and the Mule Deer was travelling across the Painted Desert to reach what today is Kachina Point and the Rim Trail on the far-off side, where he had relatives. He grew thirsty, for it was very warm, and stopped to drink from a small little depression in Lithodendron Wash. When he had finished drinking he looked up, and there was his own cousin, the Pronghorn, drinking near him.

"'Good morning, cousin,' said the Mule Deer. 'It's a warm morning and the water, muddy as it is, still tastes good, doesn't it?'

(10)"'Yes,' replied the Pronghorn, 'it is warm today, but I can beat you running, just the same.' These two, being cousins you see, were always very competitive. They were always trying to outdo one another, just like cousins and brothers and sisters do today.

What is sibling rivalry? Have you experienced it? Explain.

Discuss the pros and cons of 'being competitive.'

(11)"'Ha-ha!' laughed the Mule Deer--'you beat me running? Why, you can't run half as fast as I can, but if you want to run a race let's bet something to make it more interesting. What shall it be?'

Why did Mule Deer want to bet on the race?



(12)Now Pronghorn had observed that the Mule Deer was a very picky eater. He wouldn't eat just anything, but carefully selected only the finest golden buckwheat, sagebrush, and buffalo grass. For dessert he'd sometimes have a succulent prickly pear cactus fruit. Pronghorn thought this to be quite sophisticated and cultured, and he kind of envied Mule Deer for his particular palette.

What did Pronghorn envy about Mule Deer?

(13)"'I'll tell you what,'" Pronghorn said. "If I win, you give me whatever it is that makes you such a sophisticated, cultured culinary expert. You always seem to know just which plants are the most delicious and nutritious."

(14)"Sounds good,' said the Mule Deer, "let's run down the wash to where that petrified log lays across the gully (Onyx Bridge)"

"'All right,'" said the Pronghorn. "We're both set, and here we go."

(15)Away they ran down the wash toward Onyx Bridge. All the way the Pronghorn was far ahead of the Mule Deer; and when he got to the finish line, he waited for him to catch up.

Both were out of breath from running, but both declared they had done their best, and the Mule Deer, being beaten, gave the Pronghorn his sack of gall, because that gall, you see, is what made Mule Deer such a finicky, particular eater.

What did Pronghorn win by defeating the Mule Deer?

(16)“You know, I think this ground is too flat for me,” said the Mule Deer. “Come up into the badlands where the gulches cut the country, and rocks are in our way, and I will show you how to run. I can't run as fast as you on flat ground, but wait until we race up through the Black Forest to the plateau! Let's go from here to the top (where the Painted Desert Inn stands today).”

"That suits me,' replied the Pronghorn, 'but what shall we bet this time?"

(17)Now Mule Deer wasn't really all that concerned about losing his gall. Sure, it appeared to make him a picky, cultured, sophisticated eater, but what he had always really wanted to do was basically eat anything he wanted. Then he wouldn't have to spend time looking around on those hot, windy days, trying to find just the right golden buckwheat bush. He'd be able to eat anything anywhere!

Why wasn't Mule Deer all that concerned about losing his gall?

(18)Mule Deer thought for a moment. What did Pronghorn have that he might want? It didn't take him too long to figure it out. He had always envied Pronghorn for having an extra set of claws that he didn't. Pronghorn had one on each leg just up a little from his paw. They really looked cool, kind of cultured and sophisticated. It made Pronghorn somehow seem just a little better than plain old 'regular' deer.



What did Mule Deer think made Pronghorn seem 'just a little better'?

What do you think looks 'cool, kind of cultured and sophisticated'?

(19)“OK, let's do this,” said Mule Deer. If I win this time, I get your dew claws.”

Pronghorn readily agreed. He'd always thought those extra claws looked sort of freaky, like there was something wrong with him, plus they didn't really do anything anyway

(20)Away they went over logs, over stones and across great gulches that cut the hills in two. On and on they ran, with the Mule Deer far ahead of the Pronghorn. Pronghorn was fast on open, flat turf, but the Mule Deer was extremely agile and could turn, twist, and leap up the gullies and arroyos.

What advantage did Mule Deer have over Pronghorn in this race?

(21) Pronghorn called out, “OK, there, stop, you beat me. I give up.”

So the Mule Deer stopped and waited until the Pronghorn came up to him, and they both laughed over the whole thing, but Pronghorn had to give Mule Deer his dew-claws, and now he goes without himself.

(22) The Mule Deer wears dew-claws and always will, but on his liver there is no gall, while the Pronghorn carries a gall-sack around minus any dew claws on his legs. It’s all because of these races between the two cousins. And I guess they both got what they wanted. The Mule Deer can eat anything he wants now while he preens around with his ankle jewelry, while Pronghorn is now a sophisticated, cultured diner who doesn’t feel embarrassed by those useless claws sticking out of his legs.

(23) It’s kind of interesting, isn’t it, how different things seem desirable or dumb depending on who wants or doesn’t want what.

Reread that last sentence. Discuss what it means and think of other examples.

Story Elements:

Setting/Place: Where and when does the story take place? Relate it to a site in Petrified Forest National Park.

The story mentions Puerco Pueblo, Puerco River,

Lithodendron Wash, Black Forest, Painted Desert, Painted Desert Inn, Rim Trail, Kachina Point, and the Onyx Bridge

Where do you think would be a good location for this story?

If you stand at Kachina Point, can you find a possible route for the second race?

Characters: Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story?

How would you describe them?

Plot/Problem: What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How does the author want us to feel after reading the story?

Parts of Speech

Featured Part of Speech = Adverbs

Just as adjectives modify nouns, adverbs modify, or further describe, verbs. Adverbs may also modify adjectives. (Many, though not all, adverbs end in -ly.)

Example 1: The Mule Deer was extremely agile.

Example 2: The Pronghorn readily agreed.

In the first example, the adverb *extremely* modifies the adjective agile. How agile? In the second example, the adverb *readily* modifies the verb *agreed*.

While nouns answer the questions *who* and *what*, and adjectives answer the questions what kind? What size? Which one? How many, and what color, adverbs answer the questions *how*, *when*, *why*, and *where*.

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

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Find the adverbs in the numbered paragraphs above.



Writing

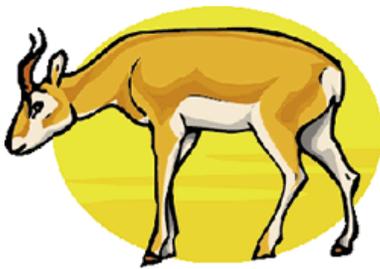
Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

The word 'gall' can also be used where it means: impudence & effrontery; something bitter or severe; a spirit of rancor

Write a five sentence paragraph in which you describe someone who 'has a lot of gall.'

Follow the 1C-3S-1T format.



Drawing

There are petroglyphs of pronghorn and mule deer in Petrified Forest and many other areas on the Colorado Petroglyph. Clearly, they were important creatures to the people who lived here then, and are also well-known and liked by many people who live today. Some people even still hunt them, although their weapons of choice are a tad more efficient and user-friendly than atlatls and bow-and-arrows. Try drawing your own petroglyphs of these guys, or choose another subject if you'd like.

Lesson #7

Coyote, Curlew, Some Mice, and the Rock Slides at Mile Markers 22-23

The Natural World



There is a petroglyph at Puerco Pueblo which some think shows a curlew holding a frog at the end of its beak. No one knows for sure what the petroglyph means, but maybe, just maybe, the artist was depicting curlew lunchtime along the Puerco River. The long-billed curlew is no longer a year-round resident at Petrified Forest; however, he may pass through now and then since this bird, North America's largest shorebird, breeds in the Great Basin and areas of the Colorado Plateau, of which Petrified Forest is a part.



White-footed mice (*Peromyscus leucopus*) drum their feet rapidly when alarmed. Some say they also do this on a hollow reed to make a kind of musical, buzzing noise, though nobody knows why they do it – maybe they just like the sound.

Predators of these little guys include snakes, owls, hawks, skunks, foxes, coyotes, and, well, you get the idea. They must spend a lot of time looking up, behind, and all around. They are good swimmers, which wouldn't seem to matter much in the Petrified Forest. They grow up to eight inches long with brown, grayish, or reddish fur above, and white underneath. They have a really long tail and big ears to better hear the whoosh of the owl's wings.



Some interesting coyote facts:

They sometimes walk on their toes to make as little noise as possible.

They have such great noses they can even smell prey scurrying up to four feet beneath the snow.

They also use that nose to detect hunters, including people, up to two miles away.

They can hit 40 miles per hour when they're really stretching it out.

The Story (fiction)

(1)By this time you know that Coyote didn't always think things through all the way. Sometimes he acted a bit impulsively. He often got into trouble, but something usually happened to get him out of it. This next story shows you that it is not always good to try to do things just because others are. Copycats are usually not really that groovy. Something may be right for others, and wrong for us, but Coyote didn't understand that, you see...or maybe he didn't really care.

Have you ever had experience with a copycat? Have you ever been one? Why do people copy other people?

What does it mean to act 'impulsively'?

(2)One day Coyote was walking along enjoying the scenery down in what is now the southern part of Petrified Forest, between mile markers 22 and 23. As he lollygagged along, he saw some white-footed (or should it be 'feeted') mice playing and got curious. They were messing around by some big flat rocks that were sticking out of the tops of the grayish, chalky mesas. There had been some erosion beneath the rocks and it looked like they could fall at any second.

How would you 'lollygag' along?

(3)Here's what they were doing for fun. The Head Mouse (aka – The Big Cheese) was singing a song, a somewhat stupid song actually, something about mice running races on rolling pieces of tumbleweed, while all the other mice danced, and then the Head Cheese would cry, 'now!' and all the mice would run underneath the big rocks on these thin, skinny little paths. Once they got to the other side, Major Mozzarella would start singing again, and then say, 'now! - back they would come – right smack dab under the dangerous rocks. Sometimes little bits of dirt and clay would crumble and fall down the side of the mesas in little gravelly streams, sort of maybe warning the mice that the rocks were getting ready to tumble, but the white-footed (feeted?) mice paid no mind, and kept on playing, laughing so loud they would start snorting, making a funny kind of squeaking-sneeze sound.

Describe how this white-footed mouse game worked.

(4)Coyote was intrigued. He was in one of those moods where he felt like doing something, but didn't really know what he wanted to do, so that when he saw somebody else doing something that he wasn't, he started thinking that maybe he could do it, too, just for something to do.

What does it mean to be 'intrigued' by something? What intrigues you?

"Say, Great Gorgonzola, I want to try that. I want to play that game. I am a good runner. I can run 40 miles per hour when I get rolling."

You know, the truth is that Coyote was out of shape. Maybe www.animalfacts.org says coyotes can run 40 miles per hour, but not this one. This is often where we make great mistakes - when we try to do things we are simply not ready or able to do.

(5) "No-no!" cried Prince Parmesan, as Coyote prepared to make the race past the rock. "No!--No!-- you'll shake the ground. You're too heavy, and the rock may fall and kill you. My people are light of foot and really pretty fast. We're having a good time, but if you try it, something tells me something will go wrong, and you'll spoil all our fun."

"Zah!" said Coyote, "Stand back! I'll show you what kind of athlete I am!"

When do we often make great mistakes? Do you agree with this observation?

(6) So he ran like a crazed bear, shaking the ground with his weight. Everyone felt just a tiny little tremble at first, but then it started picking up momentum; it kind of sounded like someone beating a bass drum from a mile away at first, but then marching toward you, getting a tad louder and louder until the ground started shaking. The white-footed mice picked up their white feet as fast as they could and skedaddled out of their pronto. You could see some dust start up near the top of the mesa, and then the big rocks started giving way and sliding, from left to right all the way across the top. Coyote just stood there right in the middle of the trail, apparently paralyzed with fear, or maybe just as likely, not really able to move fast enough to get out of the way even if he had tried. Remember he was a little out of shape and couldn't run 40 miles per hour if his life depended on it, which it actually kind of did right at this moment.

How would you 'skedaddle'?

Give an example of something 'picking up momentum.'

(7) The clay and gravel started giving way underneath Coyote and soon he was sliding down the mesa on his back, his feet saluting the sun and his hindquarters getting roughed up pretty bad by the hardscrabble. He was deposited in a sort of depression at the base of the mesa with the huge rock slabs sliding, rolling, and falling all around him. One particularly large one (which you can still see near the end of the rockslide) flipped a couple of times and then came crashing right down on Coyote. Fortunately, or not, depending on how you feel about Coyote, the big stepping stone caught on a couple of other rocks and avoided making Coyote pancakes by just a couple of inches. He wasn't dead, but he was totally and completely stuck beneath the rock, covered in dust, all scratched up, and really in quite a predicament.

What does it mean to be in a 'predicament'?

What predicament was Coyote in?

(8)Coyote lost all dignity and just started screaming for help.. All the mice ran back to take a look and got a good laugh out of it.

"You idiot," they taunted. "We told you not to do it. Now you've ruined the fun!"

How do you 'taunt' someone? Have you ever taunted anyone? Why?

(9)Coyote pleaded with them to go get help, and eventually, after they got done teasing, chortling, and guffawing, they went looking for assistance. They finally found Raven, and not getting too close, shouted and told him what had happened. Raven didn't like Coyote very much, but he said he would go and see what he could do, and he did. The mice showed him the way, and when they all reached the spot - there was Coyote nearly flattened, covered in dust and conspicuous comeuppance, with the big stony slab hovering ominously inches from his long snout. He was angry and was yelling out words people really shouldn't say, for they do no good and make the mind wicked.

Why didn't the mice want to get too close to the Raven?

What does it mean that Coyote was covered with 'conspicuous comeuppance'?

Have you ever 'lost it' when you were hurt, angry, or upset by something?

(10)"Raven said, "Keep quiet, you big baby. Let me consider the situation here and see if I can devise a plan to remedy things." He asked for silence so he could think things through, but Coyote kept cursing and finally insulted Raven, calling him a name not acceptable in the bird world, a name that is simply not good or polite in anyone's world, so the Raven said, "Well, forget this," and flew away.

Why did Raven give up on helping Coyote and fly away?

(11)Coyote continued screaming for help, now promising great riches and unending supplies of food and water to his rescuer. Just then the Curlew, who was flying over on his way to the Little Colorado, heard the commotion, saw the trouble, and gracefully (well, sort of gracefully) glided down to the rockslide to see what he could do. In those days Curlew had a short, stubby bill, and he thought that he could break the rock by pecking it. You see, he too, seemed a might delusional, thinking himself capable of things he really couldn't pull off. He pecked and pecked and chiseled and chiseled, but finally fizzled without making any headway, till Coyote grew angry at him, too, just like he did at Raven. The harder Curlew worked, the worse Coyote scolded him, commencing with the most scandalous cursing and swearing. Coyote lost his temper altogether, which is a bad thing to do, for we

lose our friends and our own composure with it. Temper is like a bad dog pacing and growling by your front door – nobody gives a hoot about coming to visit or help you with it skulking about.

Why might we say that Curlew was also a bit ‘delusional’?

Curlew hung in there, though, and did his best, but finally said: 'I'll go and try to find somebody else to help you. I guess I am too small and weak.’

(12)He was standing close to Coyote when he spoke, with his bill almost touching the ground near Coyote’s right paw. As he got ready to straighten up and take off, Coyote reached out and grabbed the Curlew by the bill. Curlew began to scream, “Oh, my - oh, my - oh, my” - as you still hear them calling in the morning to this day. Coyote hung onto the bill and finally pulled it out long and slim, and bent it downward, as it is to-day. Then he let go and laughed at the Curlew.

So, how did the Curlew’s bill get bent?

(13)"You are a weird-looking bird now. That is a homely bill, but you shall always wear it and so will all of your children, as long as there are Curlews in the world.”

What an ingrate! But Coyote was like that sometimes. Sometimes he was good, and sometimes bad.

(14)Everyone has forgotten who it was that got Coyote out of his trouble, but it seems like maybe it was the Porcupine, although the how and why of it are hard to figure out. Anyhow, he did get out. You would think that he would have learned his lesson. But then again, knowing Coyote, we kind of know he didn’t. And not long after this, he got into a fix again.

But that’s another story...

What does it mean to an ‘ingrate’?

Would you say that people are sometimes good, sometimes bad, and sometimes just ‘somehow’? Discuss.

Story Elements

Setting/Place:

Where and when does the story take place? Relate it to a site in Petrified Forest National Park.

The story mentions Mile Markers 22 -23 in the southern end of the park.

Where do you think would be a good location for this story?

If you get a chance, see if you can find the exact spot where Coyote was trapped.

Characters: Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story?

How would you describe them?

Plot/Problem: What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How does the author want us to feel after reading the story?

Parts of Speech:

Featured Parts of Speech = Conjunctions & Interjections

A conjunction is a word that joins two independent clauses, or sentences, together.

Example 1: Coyote wanted to try running underneath the rocks, *but* he shouldn't have tried it.

Example 2: Curlew thought maybe he could help, *so* he decided to glide down and take a look.

In the examples above, both *but* and *so* are conjunctions. They join two complete sentences with the help of a comma. *And, but, for, or, nor, so, and yet* can all act as conjunctions.

An interjection interrupts a sentence. It is usually just one or two words and expresses excitement, fear, or some other strong emotion. The interjections are italicized in the following examples.

Example 1: "Wow! You are definitely stuck," remarked Porcupine.

Example 2: "Don't grab my bill. Ouch!" cried Curlew as he tried to fly away.

Adapted from: <http://owl.english.purdue.edu/owl/resource/730/01/>

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Find the conjunctions & interjections in the numbered paragraphs above.

Writing:

Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Try writing two paragraphs comparing and contrasting characters.

Drawing:

Mice have always been favored subjects for cartoons, comic strips, movies, and so on. Try your hand at drawing some of the mice from this story.

Lesson #8

How Coyote Got Those Splotches On His Face

The Natural World



The black-tailed jackrabbit is actually a hare, not a rabbit. Babies are born with open eyes and fur, ready to take on the world. The bunny-jacks can take off running within minutes of birth. Adults can leap 20 feet at a time at up to 40 miles per hour. Jackrabbits are nocturnal and come out to feed overnight. During the day, they hide in shallow depressions covered with plants and shrubs called “forms.” Few of these forms have air conditioning, so the rabbits depend on their unusually big, but stylish ears, to cool down. Wind blowing through blood vessels running close to the skin’s surface helps them chill during those hot and dry summer days. Jackrabbits are strong swimmers, and if they get cornered, they can dog-paddle with all four feet, so if the Triassic ever returns to Petrified Forest, the jackrabbits will probably just swim right through it. When they are trying to evade predators

like coyotes, foxes, bobcats, and badgers, they dart speedily along in a zig-zag pattern through the petrified wood.

The Story (fiction)

(1) You know, in some ways Coyote wasn’t such a bad guy, but on the other hand, he wasn’t all that good either. For example, consider this story.

One day when Coyote was out walking around at what is now Giant Logs Trail, daydreaming a bit and enjoying the scenery, he scared a jackrabbit out from under a petrified log. Rabbit immediately sped off lickity-split into the stone forest with Coyote on his tail. Every time Coyote would almost catch up to him, Rabbit would turn suddenly and go darting off in the other direction. They ran in circles like this for quite some time until Coyote got tuckered out.



(2) Then Rabbit jumped into a hole that went down underneath one of the huge logs. (It might have been under ‘Old Faithful.’) Coyote reached in and nearly grabbed him.

“I am going to drag you out of there and have you for lunch,” said Coyote.

“Well, go ahead, then,” said Rabbit. “I’m waiting.”

For a time they jawed back and forth at each other, with Coyote threatening to eat Rabbit whole and Rabbit taunting him in return.

“Give it up,” chattered the Rabbit. “You don’t have anything to kill me with anyway.”

What does it mean to get ‘tuckered out’?

What does ‘lickity-split’ mean?



(3)Coyote stepped back into the shade of a cholla, being careful not to prick himself, and then he patiently pondered what seemed to be one powerful plan. He was more determined than ever to enjoy some nice roasted rabbit with at least four warm, fresh pieces of piki bread, hot off the stone. Yes, he had an idea, and it just might work!

Have you ever ‘pondered’ something? What?

(4)“I’m going back to get a juniper stick,” yelled Coyote to Rabbit. “Then I’ll shove it down this little hole of yours, twist it around in your fur until you get caught on it, pull you out, and then let the feasting begin!”

“All, right, fine! Hurry and get it,” dared Rabbit. “I’m getting a little hungry, too.”



(5)So Coyote got a juniper branch that had some berries and sap on it and began poking it in, hoping to twist Rabbit’s fur onto the stick and then pull him out. But each time he tried this Rabbit would grab the stick and let Coyote pull him just within reach. Then he’d let go of the stick suddenly, causing Coyote to fall over backwards.

By late afternoon, Coyote finally realized that this approach would never prove to be successful. He came up with a new plan. “I’m going to build a fire at the entrance of your burrow. Then I’ll blow the smoke in at you and asphyxiate you.”

What does ‘asphyxiate’ mean?

Can you see any flaws in Coyote’s plan? Explain.

(6)“What are you going to use to make the smoke,” asked Rabbit. “The juniper branch, you stupid rabbit,” laughed Coyote. “That’ll smoke you out of there. You’ll even be partway roasted for supper,” he laughed gleefully.

So Coyote built a big fire at the burrow entrance. He broke off more juniper branches and threw them on the fire. The berries started crackling, popping, hissing, and smoking. Coyote bent down close to the hole and began huffing and puffing, blowing the smoke right down in on Rabbit.

What would it sound like to laugh ‘gleefully’?

(7)“I’m dying! This is unbearable! Stop! I’m dying!” Rabbit gasped and coughed in mock anguish. “I’m ready to die!” he said. “Blow that smoke in harder so I can choke to death now. This is unbearable!”

Explain what it means that Rabbit is gasping in ‘mock anguish.’



(8)So Coyote leaned in, his long snout only inches from the fire, his hair nostrils twitching with anticipation and his jowls dripping great gobs of slobber as he anticipated the fine meal ahead.

Why were Coyote’s nostrils ‘twitching with anticipation’?

Have you ever started salivating when you really hungry?

(9)When Coyote got as close to the fire as could, Rabbit suddenly somersaulted onto this back and kicked up at the fire with all his might. Sparks from the burning black-blue juniper berries splattered all over Coyote’s face. Coyote lurched back, screaming with pain.

Without looking, spell ‘somersaulted.’

(10)As he wildly clawed at the burning berries with his paws, some hair came off parts of his face right along with the steaming berries. Rabbit jumped out of the hole, right past Coyote, and went dashing through the logs up the mesa to safety, leaving Coyote rolling on the ground, both his face and stomach in pain.

So Rabbit escaped, and that’s also why Coyote’s face has splotches all over it to this day.

Coyote wasn’t laughing now, was he?

What does it mean that ‘both his face and stomach were in pain’?

Story Elements:



Setting/Place:

Where and when does the story take place?

Relate to a site in Petrified Forest National Park.

The story mentions the Giant Logs Trail and ‘Old Faithful,’ the huge petrified log halfway along on that trail, which is located behind Rainbow Forest Museum at the south end of the park.

Characters: Who is in the story? Who is the antagonist? Who is the protagonist? What happens in the story that helps the characters solve the problem? Who are the main characters in the story?

How would you describe them?

Plot/Problem: What is it that one or more characters want to do or wants to happen by the end of the story? What is the central problem of the story? How is it solved? How does the author want us to feel after reading the story?

Add additional discussion using suggestions on page 6.

Parts of Speech:

Featured Part of Speech = Prepositions

Prepositions work in combination with a noun or pronoun to create phrases that modify verbs, nouns, pronouns, or adjectives. Prepositional phrases convey a spatial, temporal, or directional meaning.

Example: Rabbit climbed *up* the side *of* “Old Faithful”.

There are two prepositional phrases in the example above: *up the side* and *of Old Faithful*. The first prepositional phrase is an adverbial phrase, since it modifies the verb by describing where the Rabbit climbed. The second phrase further modifies the noun *Old Faithful* (the object of the first prepositional phrase) and describes which noun (in this case the proper noun, Old Faithful) the Rabbit is climbing.

Below is a list of common prepositions in the English language:

Aboard, about, above, across, after, against, along, amid, among, around, at, before, behind, below, beneath, beside, between, beyond, by, down, during, except, for, from, in, into, like, near, of, off, on, onto, out, over, past, since, through, throughout, to, toward, under, underneath, until, unto, up, upon, with, within, without.

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Find the prepositions in the numbered paragraphs above.

Writing:

Write a five sentence paragraph whose topic sentence is one of the comprehension questions from the story above.

Follow the 1C-3S-1T format.

Write a five sentence paragraph in which you use at least one prepositional phrase in each sentence.

Follow the 1C-3S-1T format.

Drawing:

Rabbits have been used quite a bit in cartoons, comic strips, and many fables and legends, just like mice. Think of Bugs Bunny, Thumper, and the Easter Rabbit. Try sketching a cartoonish kind of rabbit.

Now it's Your Turn



Petrified Soup is intended to be an organic writing project, morphing and growing as teachers and students add ideas and materials centered in the fascinating and inspiring world that is Petrified Forest National Park. Please submit your projects to the park's Education Specialist so that we can all work together to share our love of the park with as many as we can to ensure its preservation and protection by and for the next generation.