

Program Title: Sense Scientists

Suggested Grade Level: Kindergarten

Maximum Group Size Per Day: 120 students (plus chaperones)

The **Sense Scientists** program is led by teachers and chaperones with the assistance of an education ranger at the park. Backpacks with activity instructions and materials for up to 120 students are provided for the in-park activities. Each backpack contains materials for up to 12 students that include:

- instructions for the in-park activities
- clipboards, pencils, and consumable activity pages needed for the activities
- laminated color squares
- scent containers with ID card
- first-aid kit

This lesson plan includes pre-visit, on-site, and post-visit activities that can be shared with all teachers and chaperones to familiarize themselves with the activities prior to the field trip.

Overview

People investigate the world and learn about their surroundings through the five senses: taste, touch, smell, hearing, and sight. Shenandoah National Park, with its abundance of flora and fauna, diversity of habitats, and variety of animals is a great place to expand a child's sense of wonder and develop observation skills through hands-on discovery and nature experiences. Students will become sense scientists who make discoveries about the world by using their five senses. Students will also learn stewardship behaviors and discover ways they can help protect and preserve the environment.

Learning Objectives

Following the Park experience and classroom activities, the students will be able to

1. name their five senses and point to the body part mainly used for each;
2. use sensory descriptors such as rough, color, loud, and bright to identify and describe objects found both at school and in the Park;
3. understand what a national park is and that its mission is to preserve and protect the resources within;
4. explain how stewardship practices help protect Shenandoah National Park and home communities.

Virginia Science Standards of Learning

Scientific and Engineering Practices

- K.1 The student will demonstrate an understanding of scientific and engineering practices by
- a) asking questions and defining problems
 - b) planning and carrying out investigations
 - c) interpreting, analyzing, and evaluating data
 - d) constructing and critiquing conclusions and explanations

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- f) obtaining, evaluating, and communicating information

Matter

- K.3 The student will investigate and understand that physical properties of an object can be described. Properties include
- a) colors;
 - b) shapes and forms;
 - c) textures and feel.

Living Systems and Processes

- K.5 The students will investigate and understand that senses allow humans to seek, find, take in, and react or respond to different information. Key ideas include
- a) the five basic senses correspond to specific human body structures;
 - b) senses are used in our daily lives.

Earth Resources

- K.11 The student will investigate and understand that humans use resources. Key ideas include
- c) choices we make impact the air, water, land and living things.

Background Information

Children gain information about their world through their five senses: taste, touch, smell, hearing, and sight. Through investigation and discovery, they can identify, compare, and classify items and discover similarities and differences in the world around them.

City and state parks are areas of land set aside for public recreation. In addition to other facilities, they may provide playground equipment, sports fields, picnic areas, and paths to walk or bicycle. National parks are places where natural and cultural resources are protected and preserved for present and future visitors to enjoy. Stewardship behaviors such as recycling, reusing, and resource conservation can help in the preservation of all the world's environments.

Shenandoah National Park is an exceptional environment to develop sensory awareness with a variety of habitats and diversity of plants and animals. Children can study patterns, textures, sights, sounds, and smells to further their knowledge and enthusiasm about their world.

Vocabulary

- **bright** – brilliant in color, shiny
- **cold** – a condition of low temperature
- **conserve** – to keep from being damaged or lost
- **dull** – not shiny or glossy, dim
- **fuzzy** – covered with loose, light strands
- **hard** – solid, firm, and unyielding to the touch
- **hear** – the sense by which sounds are perceived

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- **national park** – an area of scenic beauty, historical, or scientific interest that is maintained by the federal government for the public to visit
- **nature** – natural scenery, including the plants and animals that are a part of it
- **recycle** – to use again and again, to alter or adapt for a new use
- **reduce** – to lessen in any way, diminish
- **reuse** – to use again
- **rough** – having an uneven or irregular surface, not smooth
- **sight** – the faculty or power of seeing; vision; eyesight
- **smell** – to detect the odor of by means of the nose and the olfactory nerves
- **smooth** – having an even or level surface, not rough
- **soft** – smooth or fine to the touch
- **sound** – the auditory sensation produced by vibrations
- **state and city parks** – areas of land set aside for public recreation. In addition to other facilities, they may provide playground equipment, sports fields, picnic areas, and paths to walk or bicycle.
- **taste** – to test the flavor by putting it in one's mouth
- **touch** – to feel using the hand or finger; tactile sense

Pre-Visit Activities

Prior to beginning the Sense Scientists unit study, have the students take the Sense Scientists **Pre-visit Assessment**. Record the scores on the **Pre-visit/Post-visit Score Sheet**.

Begin the unit study and incorporate as many of the following pre-visit activities as possible into your lesson plan to prepare the students for their Park field trip.

Materials for Pre-visit Activities

Arts and crafts materials (construction paper, cotton balls, flower pattern to trace, glue or glue sticks, crayons/markers/paints), book: *Baby Bear, Baby Bear, What Do You See?* by Bill Martin Jr. and Eric Carle, *Schoolyard Scavenger Hunt* student sheet (attached), book: *The Listening Walk* by Paul Showers, items with different tactile qualities (rough, bumpy, smooth, flat, thick, curvy, soft, hard), small boxes with labels, items that make different sounds (popcorn kernels, cereal in small containers, wooden and metal spoons, rubber bands stretched over box, small pillows, metal pans), food items for trail snack mix and reusable containers (dried or fresh fruit, cereal, crackers, chocolate chips, peanuts but make sure there are no nut allergies!), variety of foods and fragrances in small containers, *What Do You See in Shenandoah National Park?* picture sheet (attached)

1. Vocabulary Activity Suggestions

- a) Play Simon Says – “Touch your...” (nose, eye, etc.) and/or make a face to show that you have just tasted something (salty, sour, etc.)
- b) Have the students make a mobile of various textured animal or flower cutouts (fuzzy fabrics, sandpaper, foam objects). Add a different fragrance to each mobile. See if the students can identify the animals and scents using descriptors.

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- c) Have students play charades using their descriptive vocabulary words (act out feeling something rough, tasting something sour, etc.).

2. **Schoolyard Scavenger Hunt**

- a) Read *Baby Bear, Baby Bear, What Do You See?* by Bill Martin Jr. and Eric Carle. Have students close their eyes and try to visualize what is surrounding them in the classroom. Discuss the important role our eyes have in everyday life.
- b) Distribute copies of the *Schoolyard Scavenger Hunt* student sheet (attached) and lead students on a guided discovery walk to the playground or a local park. Look for leaves, trees, shrubs, wildflowers, birds, nests, insects, cocoons, seeds, etc. Have them observe and share colors they see, things alive and moving as well as non-living things, items with textures such as rough and smooth, smells, and various sounds heard.
- c) Return to the classroom and have the students close their eyes and try to recall things they saw: i.e. all the red things, things that moved. Play a guessing game of "Guess what I saw (or heard) on our walk that was [color and shape words]?"

3. **Hearing Map**

- a) Read *The Listening Walk* by Paul Showers. Tell the students, "When we are at Shenandoah National Park, we are going to be hearing lots of things. Some will be the same as around here and some will be different. What are some of the things you think you will hear when we go outside of our building?" Make a list of their suggestions. Use this list to make a map key.
- b) Introduce the idea of making a listening map. Before going outside have each student draw and label a map key with a symbol for each kind of sound. Make sure students understand that they are going to be at the center of their map. Have them draw a small happy face to represent themselves.
- c) Take students outside, sit down, and begin listening. As they hear sounds, they should try to identify what is making the sound and where it is coming from. Students will then draw the symbol representing that sound on their maps.
- d) Return to the classroom and tell them "We are going to make another sound map when we are at Shenandoah National Park. Do you think it will be the same or different?"

4. **Touch Museums**

- a) Tell the class that "We are going to be studying touch as one of our five senses." Pass around a rough and/or bumpy object. Ask students, "What words can you think of that describes what your fingers are feeling?" Create a label with the main descriptive words.
- b) Pass around a smooth or flat object. Ask students, "What word can you think of describes what your fingers are feeling?" Write the main descriptive words on another label.
- c) Repeat for any other examples of textures that your students come in contact with regularly.
- d) Create mini touch museums. Place each texture label in front of small boxes which will hold similarly textured objects. Have students ask parents to send in 1-

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3 touchable objects of various textures (bumpy, rough, flat, smooth). As students bring in objects, ask them to place their object(s) in the correct part of the 'museum'. Compare and contrast the textures found in the museum collection.

5. **Name That Sound**

Assemble various objects which make different kinds of sounds:

- wooden and metal spoons to strike together
- something that jingles (a necklace or belt)
- toss pillows to thump
- two pieces of wood to strike together
- a washboard with wooden spoon
- two metal pans to clang
- rubber bands stretched over a box
- small containers with seeds, popcorn kernels, or cereal

Let students take turns using these objects to make sounds. Have them close their eyes (or use blindfolds) as you or a volunteer make the sounds. Students try to identify what they hear and the objects used. Move around the room making the sounds and have students point to the direction in which they hear the sound.

6. **Make a Tasty "Trail Mix"**

- a) Tell the students, "When you go outside for a hike or long walk, it is nice to take a snack with you. Today we are going to make a snack to take with us when we go on our field trip to Shenandoah National Park and explore the sense of taste."
- b) Show the students a variety of ingredients and tell them, "Just like we can see different shapes and colors with our eyes and smell different scents with our noses, we can taste different things in food with our mouths. Our tongues can taste different kinds of flavors like sweet, salty, bitter and sour. Before we make our trail mix, let's taste-test some foods." Have each student try each ingredient and sort them into the different taste categories.
- c) Have the students pack a reusable container with their snack for the upcoming field trip. Write names on the containers and remember to take your snack with you on the field trip to the Park!

7. **Smelly Investigations**

- a) Collect an assortment of food items with distinctive odors and place them in small plastic containers: peppermint, cinnamon, mustard, chocolate, pickles, bananas, peanut butter, orange peel (Be aware of any food allergies!). Also collect item(s) from nature with a distinctive smell such as pine needles and place in a container.
- b) Gather all the students in a circle and give each one of them a fragrance to hold. Blindfold one volunteer. Give him/her a duplicate of one of the above food items, such as orange peel. Within a closed, safe circle, have the blindfolded student try to match the smell by comparing the fragrance with those held by the other students.
- c) Save the pine needles (natural smells) for last. Tell the students "These last smells are things we may smell while at Shenandoah National Park. What could

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they be?" Explain that many animals in Shenandoah National Park utilize their sense of smell to survive. Fawns identify their mothers by her smell, bees and butterflies are attracted to the fragrance of certain flowers, and many predators hunt using their sense of smell. Black bears can smell food from up to 20 miles away. They can smell through plastic or metal containers. At the park they have special trash cans that are made to keep bears out. Be on the lookout for one of these special trash cans when you get there.

8. What Do You See at a National Park?

Copy the attached *What Do You See at Shenandoah National Park?* picture sheets. Identify and discuss the pictures, then have students cut out the twenty squares and color them if printed in black and white.

In pairs, small groups, or individually, have students differentiate between things that are and are not found in Shenandoah National Park. Have the students determine which pictures might be seen both in the national park and also in other areas. For example, some students may find deer in their own backyard.

What You Might See In Shenandoah National Park	What You Will Probably <u>Not</u> See In Shenandoah National Park
2 – bear	1 – classroom
3 – park ranger	4 – zoo
5 – birds	8 – playground
6 – owls	12 – apartments
7 – trees and streams	13 – trains
9 – restrooms	15 – clowns
10 – deer	20 – farms
11 – campgrounds	
14 – butterflies	
16 – turtles	
17 – wildflowers	
18 – American flag	
19 – families	

The national park pictures can be used to create a collage, bulletin board display, or used to stimulate oral stories about what the students expect to see on their upcoming trip to the Park. The pictures might also be used after their field trip to trigger memories about experiences and discoveries.

9. Visiting a National Park - Leave No Trace

The mission of the National Park Service is to preserve and protect the natural and cultural resources of the nation for all people to enjoy. It is important for today's park visitors to practice good stewardship ethics and behaviors in order to pass these unique natural and historical treasures on to future generations in an unimpaired condition.

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We recommend following **Leave No Trace** (LNT) principles when going on a field trip. There are seven LNT principles:

- Plan Ahead and Prepare
- Travel (and Camp) on Durable Surfaces
- Dispose of Waste Properly
- Leave What You Find
- Minimize Campfire Impacts
- Respect Wildlife
- Be Considerate of Other Visitors

To prepare for your field trip to Shenandoah National Park, share with your students the mission of the National Park Service. Explain that they can help protect the beauty and natural resources of Shenandoah National Park by using good environmental stewardship practices.

- a) Introduce the *Leave No Trace* principle of “Plan Ahead and Prepare.” Discuss ways students can help protect habitats of Shenandoah (the forests, meadows, and streams) by planning ahead. Have each child draw and color a picture of what they think Shenandoah National Park will look like. Suggest that they include animals and plants they might see. Ask students how they can take care of the plant and animal residents of the Park.
- b) Attach the picture to a letter sent home to parents that includes the field trip date, departure time, and the following suggestions about appropriate dress, personal needs, and behaviors expected for the field trip:

Appropriate dress

- long pants – protection from poison ivy, insect bites, scratches
- closed sturdy shoes – avoid stubbed toes, scratches, lack of stability
- layered clothing – prepare for cold, wet, changeable weather (often 10 – 20 degrees cooler with unpredictable rain)

Personal needs

- lunch
- hats, ball caps, sunscreen, and/or insect repellent as necessary
- prescription medicine as required

Appropriate behavior

- eating snacks, utilizing restrooms, and consuming water before leaving for the hike
- properly disposing of trash and recycling as many items as possible; use recyclable storage containers in lunches
- being respectful of the animals, plants, and other visitors
- quietly enjoying the Park’s “outdoor classroom”
- leaving things as they are found so that future visitors may enjoy them
- caring for animals and plants by not feeding, picking, littering, or digging

10. Final preparation and planning for the field trip to Shenandoah National Park

- Approximately 2 weeks before the field trip, the lead ranger for the program will contact the lead teacher to discuss the final details of the field trip.
- Share field trip details with all teachers and chaperones going on the field trip.
- Review appropriate dress and behavior (Pre-visit Activity #9) for the field trip and remind students they will still be in school while at the Park.
- Recruit enough competent chaperones to assist on the field trip. The Park requires 1 adult (including teachers) for every 10 students.
- Arrange for transportation and know the travel route to the program location in the Park.
- Plan for lunch. School groups are welcome to picnic in the park after the program. Picnic areas offer picnic tables and restrooms, but there are no shelters for inclement weather.
- Contact your lead ranger if you have any last-minute questions or changes in your planning.

Shenandoah National Park Field Trip

The in-park Sense Scientists program is usually completed on the Story of the Forest Trail near Byrd Visitor Center, Milepost 51 on Skyline Drive. The program will generally take a minimum of 1.5 to 2 hours. Plan for adequate travel time from your school to meet the ranger at the scheduled time and location in the Park. For an effective learning experience, please remember the following:

- Before arriving at the Park, divide the students into groups of up to 12 and assign chaperones to each group.
- Upon arrival, meet the ranger and coordinate a bathroom and snack break prior to the in-park program.
- Let the ranger know how much time you have in the Park and your travel schedule requirements for returning to school.
- The park ranger will serve as your logistical guide to oversee your bathroom break, will issue and orient teachers and group leaders to the Sense Scientists backpacks, provide a short welcome to your entire group, and be available as needed during the self-guided program.
- After your field study, the ranger will collect the backpacks.

On-site Activities

1. **Tasting exercise:** Trail mix feast

Time: 10 minutes

Materials: The trail mix prepared back in the classroom (Pre-visit Activity #6)

Basics: Students revisit the tasting sense here in the Park, in a controlled way.

Procedure: After the restroom break, dig in! Compare descriptors: salty, sour, sweet, etc.

- ***Safety message:*** Beware of nut allergies in your group. Remind students to NOT pick and eat things they find in the Park because some wild plants, leaves, nuts, and berries may be poisonous to people. Animals can eat almost any kind of wild plant and not get sick, but people cannot!

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- Remember to “Leave No Trace.” Students can use their sense of sight to find and pick up any food scraps or litter to make sure that there is no trace that the class was there.

2. **Seeing Exercise:** Color search

Time: 15 minutes

Materials: Story: *How Color Came To the Earth*, laminated pieces of colored construction paper

Basics: Students hear a story and search for the colors of the rainbow.

Procedure: Read the story of a native boy and an eagle then give each student a square of colored construction paper. Have students match their color square with natural objects (plants, animals, rocks) that they discover. Students may trade their colored square for another square and continue searching and matching colors.

3. **Smelling Exercise:** Take time to smell the flowers

Time: 15 minutes

Materials: Film canisters filled with natural fragrances and key card for ID

Basics: Smell and describe natural fragrances

Procedure: Use film canisters containing fragrances found in the Park: sweet cicely, strawberry, mint, sassafras roots (root beer), maple. Have students sit in a circle and pass the film canisters around. Call on students to describe the smells and guess what each smell represents.

4. **Touching Exercise:** Reach out and touch something

Time: 15 minutes

Materials: Clipboards, pencils, *Touch Journal* (attached)

Basics: Students go on a scavenger hunt using their sense of touch.

Procedure: Have students pick partners and have them sit together. Ask them to touch the ground and describe how it feels. Is it hot? Cold? Dry? Wet?

Set boundaries for where the students can search and have them find examples of items and textures on the Touch Journal. Have students regroup and share what was found and felt. Were the things sharp or dull, heavy or light, rough or smooth?

Safety message: Please remind students not to pick live plants and to be very careful of the objects around them. Watch for poison ivy - leaves of 3, let it be!

5. **Hearing Exercise:** Sound map

Time: 15 minutes

Materials: Back (blank) side of Touch Journal, pencils, and clipboards

Basics: Students will draw a “map” of the sounds they hear around them.

Procedure: Ask the students, “Why is listening important? Think of an animal that hunts at night. How important is the animal’s hearing?” Have students sit on the ground and close their eyes. Ask, “What animals can you hear?”

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What other sounds can you identify?" After they have had a chance to listen, have them draw their "sound map." They should draw themselves in the middle of the page and draw the sources of the sounds they hear around them (car, plane, bird, wind in the leaves). Keep these sound maps to compare with the maps completed at school in Pre-visit Activity #3.

6. The Mystery Box (Optional by request)

The Mystery Box contains natural items such as feathers, acorns, antlers, and shells, for the students to examine with their sense of touch. Items can be divided up between groups. Select a student to wear a blindfold (or keep eyes closed) and sit in front of each group. Give the blindfolded student a bag with a natural object from the Mystery Box inside it. Instruct the student to keep the object in the bag. Direct the other students to ask questions about the object. Example: "Is it from a plant or animal? What shape is it? Does it feel rough or smooth?" Ask the blindfolded student to use the sense of touch to answer the other students' questions. Have students guess the object. Repeat the activity as time allows by rotating the objects between groups.

Post-Visit Activities

Following your field trip to Shenandoah National Park, use as many of the following post-visit activities as possible to conclude the unit of study. Give the students the Sense Scientists **Post-Visit Assessment**. Record the scores on the **Pre-Visit/Post-Visit Score Sheet**. Complete the **Program Evaluation Form**. Return the program evaluation and pre/post-visit score sheet to:

Shenandoah National Park
3655 US Hwy 211 East
Luray, VA 22835
Attention: Education Office

Materials for Post-visit Activities

Arts and crafts materials, *National Park Service Arrowhead* and blank arrowhead (attached), *Shenandoah Is Our Land* lyrics (attached), *Search Like A Scientist* sheet (attached), fragrances (perfume, aromatic oil, or sweet-smelling extract), cotton balls, a length of rope

1. What did you discover at Shenandoah National Park?

- Display and introduce the *National Park Service arrowhead* emblem (attached.) Each image on the arrowhead represents things that the National Park Service protects: plants, animals, scenery, the earth, water, and history (represented by the arrowhead shape).
- Have students dictate an Experience Chart story. The teacher writes student sentences describing what they did, saw, heard, and smelled in Shenandoah National Park. Ask them to conclude with a sentence about how they felt in the Park.

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- c) Provide a blank arrowhead to each student and have them draw inside the pattern some of the things they saw, heard, touched, and smelled while at Shenandoah National Park and what they would most like to have protected and preserved. Mount individual pictures and/or photographs around the story, or have the class create a large painted mural with 3-D flowers and Shenandoah animals attached.
- d) Ask them what are some things that students can do at home to help protect the environment? Lead a discussion on the “three R’s”: reducing, reusing, and recycling.

2. Shenandoah Sing-Along

Remind students that our national parks preserve and protect nature. Ask “To whom do these parks belong?” Share the exciting information that national parks belong to all citizens, so we are all “owners” of the national parks. Lead a sing-along of *Shenandoah Is Our Land* (attached) sung to the tune of *This Land is Your Land* by Woody Guthrie.

3. Scent Sense

- a. Organize groups of 4 or fewer students. Have them choose a Shenandoah animal name for their group. Allow each student to pick colored construction paper and then trace and cut out a flower shape. Glue a cotton ball in each center. Add a drop of fragrance – perfume, aromatic oil, or sweet-smelling extract – so that each student within a group has a different fragrance. Stems can be made with floral wire or pipe cleaners. Students within the groups can share their flowers, using descriptive words to describe the colors and fragrances.

Next, have two groups combine together, asking students to try to find their matching “pair scent.” Once they do, they can pretend they have found and identified their mother (or father, brother/sister). Remind students that many animals, such as the baby deer, identify their moms by scent (Pre-Visit Activity #7). Ask them how that would help animals survive in Shenandoah National Park. Are bees, bugs, and butterflies attracted to colors and fragrances? Discuss how that would help flowers survive in nature.

- b) **Option:** Make bouquets of the fragrance flowers to present to the school principal, secretary, cooks, or chaperones to show students’ appreciation for all they do and for their support of the Shenandoah National Park field trip.

4. Owl and Crow Game

From *Sharing Nature With Children*, by Joseph Cornell. Note: This is an active outdoor game. Safety rules should be established before play.

Divide the group into two teams. Have the teams stand on opposite sides of a rope laid out straight on the ground. One team is the Owls and the other is the Crows. The teacher will say a statement aloud. If it is true, the Owls chase the Crows, if it is false, the Crows chase the Owls. Anyone who is tagged before getting to the home

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base (a colorful bandana or adult placed about 10-15 feet behind each team) has to go over to the other side.

True/False statements might include:

- Shenandoah National Park has lions in cages. (F)
- Some flowers are red. (T)
- Fawns might find their moms with their feet. (F)
- Fawns might find their moms by her smell. (T)
- Thorns are sharp. (T)
- It is okay to waste water. (F)
- Rocks are soft. (F)
- Shenandoah National Park protects plants and animals. (T)
- We should recycle what we can. (T)
- It is okay to litter in Shenandoah National Park. (F)

Unit Assessment

1. Observe and document student interaction, discussion, behavior changes, pictures, written work.
2. Evaluate pictures and sentences based on effort and correct number or pre-determined and posted criteria.
3. Administer the Sense Scientists unit Pre-visit/Post-visit assessments and document student scores.

Going Further

1. **Make “Feely Books” to share with the school library.**

Prepare a box of fabric samples, nature items, etc. for students to use. For each child: staple 4 pages of durable paper in the form of a book with a sturdy cardboard covering (i.e.: cereal box insides). Have students copy from the blackboard a title on each page: FUZZY, ROUGH, SMOOTH, and SOFT. From the box or items brought from home, have students paste items to illustrate the words. They can color a picture on the cover to illustrate their trip to Shenandoah National Park. The library might be delighted to display a rotating exhibit of these books. Additional books could be made for: Things of Color, Animal Sounds I Heard, Things That Move.

2. **Let’s Recycle, Reuse, and Conserve!**

Have the students make a “Let’s Recycle, Reuse, and Conserve” collage poster for your school and display it in the hall. Recycle what? Reuse what? Conserve what? Have a container placed under the poster to gather recycled cans and bottles – at least for a month.

Place a container or box in the classroom marked “recycled paper.” Instruct students to place used/unwanted paper in the container rather than the waste basket. Weigh the paper at the end of a month. Discuss the impact on trees and the value of recycling.

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Provide students with rubber gloves and take the class to the playground daily for a week to clean up litter, recycle cans and bottles, etc. Make a daily graph to show results.

References and additional activities

Baby Bear, Baby Bear, What Do You See?, Martin, Bill Jr. and Carle, Eric, Henry Holt and Co. BYR Paperbacks; First edition, 2009.

The Listening Walk, showers, Paul, HarperCollins; Reprint edition, 1993,

2018 Science Standards of Learning Curriculum Framework, Virginia Department of Education, 2019

http://www.pen.k12.va.us/testing/sol/standards_docs/science/index.shtml

Good Character, Good Stewards, Caring for the World Around Us, Shenandoah National Park, 2005.

<https://www.nps.gov/teachers/classrooms/good-character-good-stewards.htm>

Paso Partners: Five Senses

<https://www.sedl.org/scimath/pasopartners/senses/>

The Early Childhood Almanac, Newman, Dana and Laughlin, Sarah, Center for Applied Research in Education, NY, 1998, p. 165.

Sharing Nature With Children, Joseph Cornell, cc 1998, p. 78

<https://www.sharingnature.com/nature-activities.html>

This Land is Your Land, by Woody Guthrie, lyrics and music

<https://kids.niehs.nih.gov/games/songs/patriotic/this-land/index.htm>

Pre-visit Activity #2
Schoolyard Scavenger Hunt

Name _____

I saw a **red** _____
looking at me.

I saw a **blue** _____
looking at me.

I saw a **green** _____
looking at me.

I saw a **yellow** _____
looking at me.

Pre-visit Activity #2
Schoolyard Scavenger Hunt

<p>I saw a</p> <hr/> <p>looking at me.</p>	<p>I saw a</p> <hr/> <p>looking at me.</p>
<p>I saw a</p> <hr/> <p>looking at me.</p>	<p>I saw a</p> <hr/> <p>looking at me.</p>

Pre-visit Activity #8
What Do You See at Shenandoah National Park?

1) classroom



2) bear



3) ranger



4) zoo



5) song birds



6) owls



Pre-visit Activity #8
What Do You See at Shenandoah National Park?

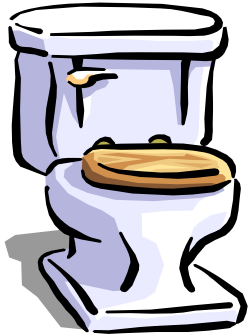
7) trees and streams



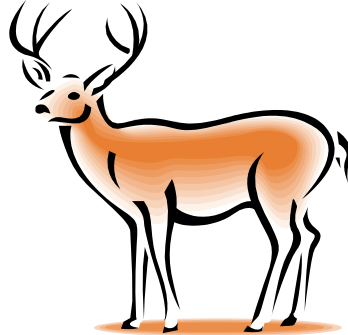
8) playground



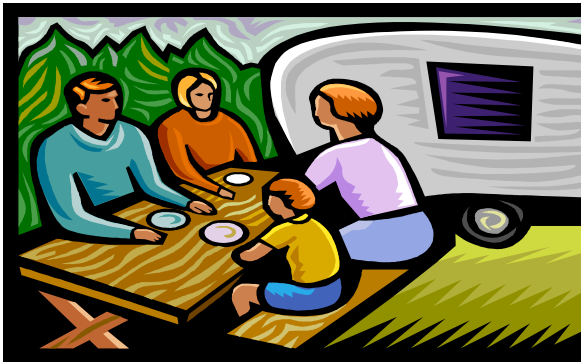
9) restrooms



10) deer



11) campgrounds



12) apartments

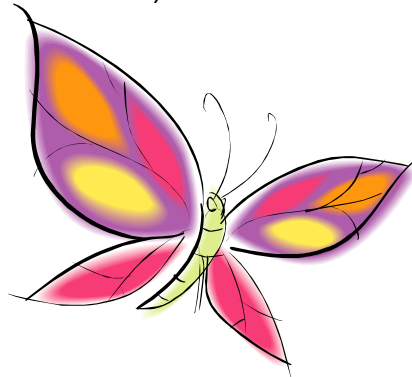


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Pre-visit Activity #8
What Do You See at Shenandoah National Park?

13) trains



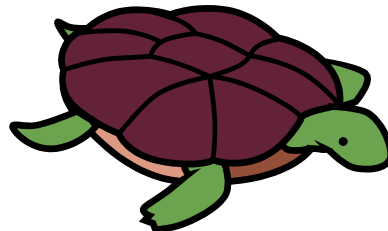
14) butterflies



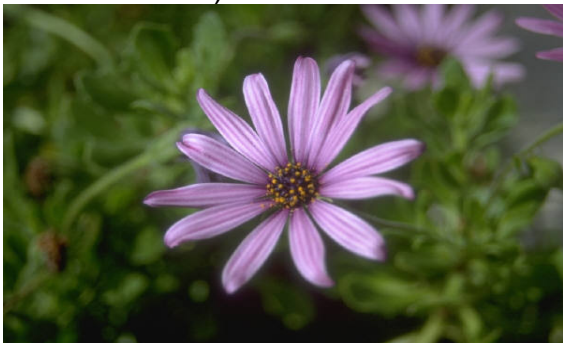
15) clowns



16) turtles



17) wildflowers



18) American flag



19) families



20) farms



Sense Scientists On-site Backpack Activity Instructions

The in-park Sense Scientists program is usually completed on the Story of the Forest Trail near Byrd Visitor Center, Milepost 51 on Skyline Drive. The program will generally take a minimum of 1.5 to 2 hours. Divide the students into groups of 12 or less and assign chaperones and one backpack to each group. Complete the following activities.

1. **Tasting exercise:** Trail mix feast

Time: 10 minutes

Materials: The trail mix prepared back in the classroom (Pre-visit Activity #6)

Basics: Students revisit the tasting sense here in the Park, in a controlled way.

Procedure: After the restroom break, dig in! Compare descriptors: salty, sour, sweet, etc.

- **Safety message:** *Beware of nut allergies in your group. Remind students to NOT pick and eat things they find in the Park because some wild plants, leaves, nuts, and berries may be poisonous to people. Animals can eat almost any kind of wild plant and not get sick, but people cannot!*
- Remember to "Leave No Trace." Students can use their sense of sight to find and pick up any food scraps or litter to make sure that there is no trace that the class was there.

2. **Seeing Exercise:** Color search

Time: 15 minutes

Materials: Story: *How Color Came To the Earth*, laminated pieces of colored construction paper

Basics: Students hear a story and search for the colors of the rainbow.

Procedure: Read the story of a native boy and an eagle then give each student a square of colored construction paper. Have students match their color square with natural objects (plants, animals, rocks) that they discover. Students may trade their colored square for another square and continue searching and matching colors.

3. **Smelling Exercise:** Take time to smell the flowers

Time: 15 minutes

Materials: Film canisters filled with natural fragrances and key card for ID

Basics: Smell and describe natural fragrances

Procedure: Use film canisters containing fragrances found in the Park: sweet cicely, strawberry, mint, sassafras roots (root beer), maple. Have students sit in a circle and pass the film canisters around. Call on students to describe the smells and guess what each smell represents.

4. **Touching Exercise:** Reach out and touch something

Time: 15 minutes

Materials: Clipboards, pencils, *Touch Journal*

Basics: Students go on a scavenger hunt using their sense of touch.

Procedure: Have students pick partners and have them sit together. Ask them to touch the ground and describe how it feels. Is it hot? Cold? Dry? Wet?

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Set boundaries for where the students can search and have them find examples of items and textures on the Touch Journal. Have students regroup and share what was found and felt. Were the things sharp or dull, heavy or light, rough or smooth?

Safety message: Please remind students not to pick live plants and to be very careful of the objects around them. Watch for poison ivy - leaves of 3, let it be!

5. **Hearing Exercise:** Sound map

Time: 15 minutes

Materials: Back (blank) side of Touch Journal, pencils, and clipboards

Basics: Students will draw a “map” of the sounds they hear around them.

Procedure: Ask the students, “Why is listening important? Think of those animals that hunt at night. How important is the animal’s hearing?” Have students sit on the ground and close their eyes. Ask, “What animals can you hear? What other sounds can you identify?” After they have had a chance to listen, have them draw their “sound map.” They should draw themselves in the middle of the page and draw the sources of the sounds they hear around them (car, plane, bird, wind in the leaves). Keep these sound maps to compare with the maps completed at school in Pre-visit Activity #3.

6. **The Mystery Box (Optional by request)**

The Mystery Box contains natural items such as feathers, acorns, antlers, and shells, for the students to examine with their sense of touch. Items can be divided up between groups. Select a student to wear a blindfold (or keep eyes closed) and sit in front of each group. Give the blindfolded student a bag with a natural object from the Mystery Box inside it. Instruct the student to keep the object in the bag. Direct the other students to ask questions about the object. Example: “Is it from a plant or animal? What shape is it? Does it feel rough or smooth?” Ask the blindfolded student to use the sense of touch to answer the other students’ questions. Have students guess the object. Repeat the activity as time allows, by rotating the objects between groups.

On-site Activity: Seeing Exercise
Story: *How Color Came To the Earth*

Once there was a young American Indian boy who lived with his mother and father with a small band of people, far away from any other bands or tribes. Where he lived, there was no color – everything was in black and white. In his band, there were no other children his age. All of his friends were animals. Animals of the ground, the birds of the sky, and the fish in the stream were all his most trusted friends. He ran with the deer and swam with the fish, but his deepest wish was to fly with the great birds of the sky.

When the boy spoke with the great Bald Eagle, the Bald Eagle told him that flying was impossible for a boy. When the boy asked if he could ride on the eagle's back, the eagle said that he was too large. But the boy begged, and after many months, the eagle decided to try to give the boy a ride on its back.

Feeling proud and excited, the young boy climbed up onto the eagle's back. Then the great bird flapped its mighty wings and slowly rose into the sky with her first passenger. They were doing it, they were flying! Up, up, and beyond the wide mountains, over the rivers and around the lakes they soared. When the eagle brought the boy back to the earth, the boy begged for even more rides. In the days that followed, the eagle took the boy on many rides to faraway places, returning always to the boy's homeland.

After many days of glorious rides, the boy began to feel that he was actually flying along with the eagle. The eagle was glad to have the company, and the boy was not as heavy as the eagle had feared. They discovered many new places and things together. As they flew along, the eagle and the boy talked of things each knew of. The eagle told the boy of swooping down from high in the sky to catch a fish just beneath the surface of a lake. The boy told the eagle of building a fire to cook with, using spears to catch wild game, and how they gathered plants so that his family could eat. The boy and the eagle become close, inseparable friends.

One day the eagle and the boy were flying across the land when a sudden storm came up, soaking the two friends. Both thought it was a wonderful thing. They talked about how great it was to ride through the sky during a rainstorm. Then suddenly, straight ahead, the boy saw a brightly colored rainbow. Both the boy and the eagle were speechless because of the beauty of the rainbow. The rainbow had something the land didn't have – it had glorious colors! Dazzled by the beauty, the eagle turned its wings to avoid the rainbow. But it was too late. Both the eagle and the boy crashed into that beautiful rainbow, shattering it to hundreds of thousands of pieces. All those pieces fell to the earth and scattered all over the land and sea.

When the boy and the eagle landed, they were very worried about what they had done. They saw members of the boy's band running to gather as many pieces of the rainbow as they could, and they were celebrating; celebrating the first day of color! But the band could not gather all the pieces of the rainbow, for the plants and animals, the rocks and the waters began to soak up the colors, and today those colors are here for all of us to see.

Do you know where the boy and the eagle were when they crashed into that rainbow? The answer is, in the sky above where we are now. Remember when I said that not all pieces of that rainbow were soaked up when they hit the ground? That people had picked up some of the pieces? Well, a few of the rainbow pieces still exist, and in this bag I have some of those pieces. Let us each choose a color and look around us to see if we can find that color in the plants and animals around us.

Teacher contribution – source unknown

On-Site Activity: Touch Exercise
Touch Journal

HARD	SOFT	COLD
SMOOTH	ROUGH	WARM
WET	DRY	HOT

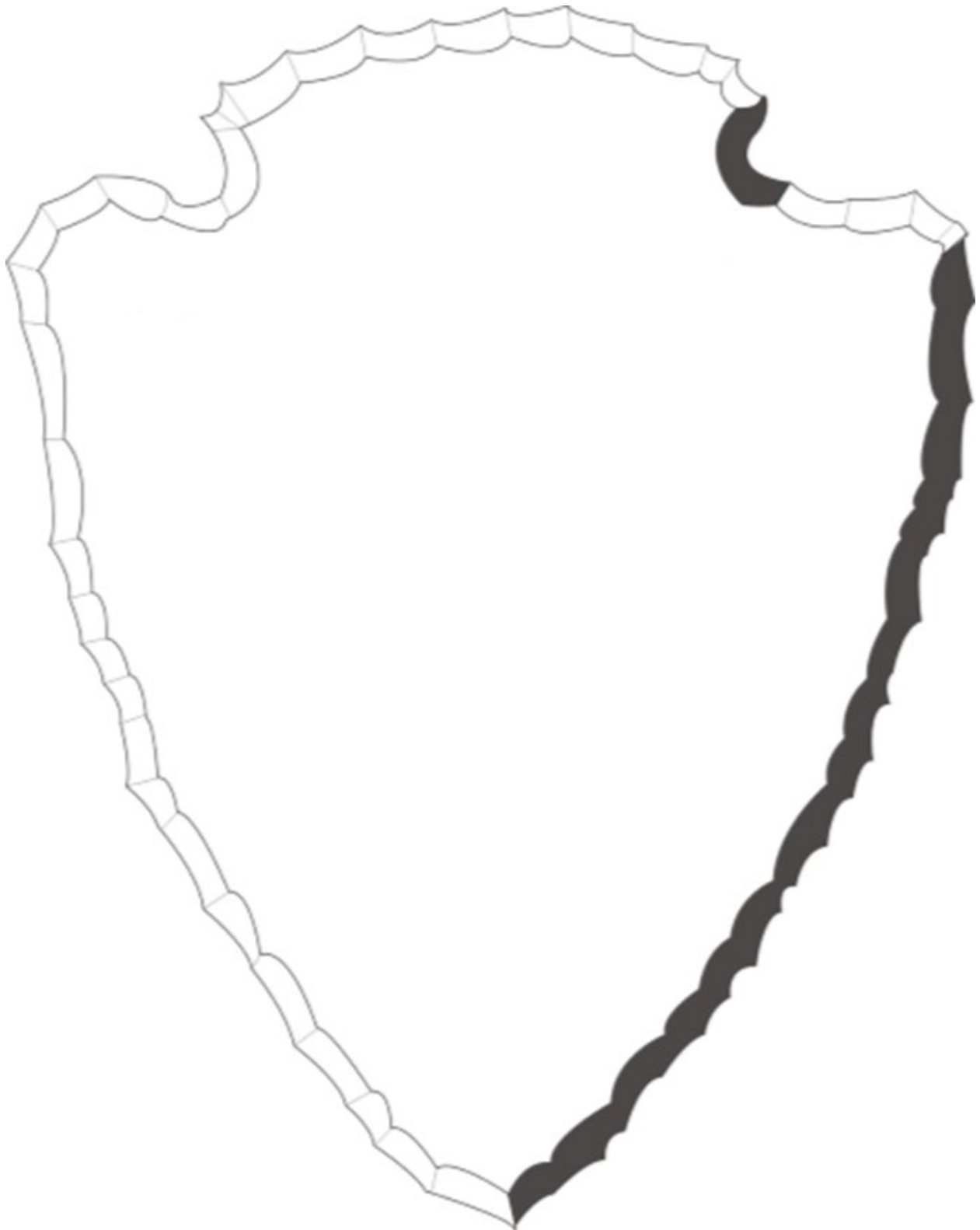
Touch Journal

HARD	SOFT	COLD
SMOOTH	ROUGH	WARM
WET	DRY	HOT

Post-visit Activity #1
National Park Service Arrowhead Emblem



Post-visit Activity #1
What do you want to protect and preserve for future generations?



Post-visit Activity #2

Shenandoah Sing-A-Long

Shenandoah Is Our Park

(sung to the tune of *This Land is Your Land*)

Chorus:

Shenandoah is your park, Shenandoah is my park

From Front Royal entrance to the Rockfish station;

There's beauty and nature in the Blue Ridge Mountains

This park is yours and mine to love.

Verse:

So let's protect it, it'll be here tomorrow

A place for all to come enjoy;

A place for caring, a place for sharing

This park is yours and mine to love.

Chorus:

Shenandoah is your park, Shenandoah is my park

From Front Royal entrance to the Rockfish station;

There's beauty and nature in the Blue Ridge Mountains








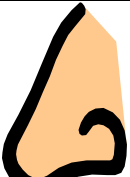












This park is yours and mine to love.

**Sense Scientist
Pre-Visit/Post-Visit Assessment**








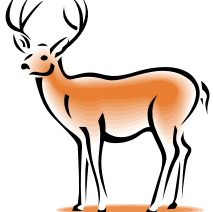

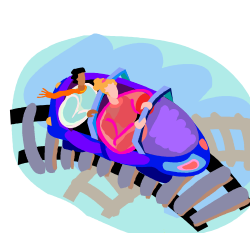
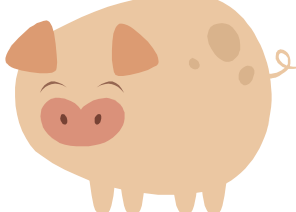


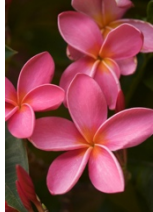
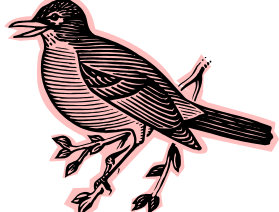





Name _____

Date _____

Note: This pre/post-test can be administered by reading the question aloud and having students mark a colorful "X" on the correct answer in each line.

1. What does a person use to smell flowers?	 a. Tongue	 b. Nose	 c. Eyes	 d. ears
2. When you touch someone, you use your _____.	 a. Eyes	 b. Hand	 c. Ears	 d. Nose
3. What part of the human body do we use to taste?	 a. Tongue	 b. Ears	 c. Arm	 d. Hand
4. What would you use to see the green trees and pretty flowers in Shenandoah?	 a. Ears	 b. Arm	 c. Tongue	 d. Eyes
5. Which place would you most likely see a park ranger?	 a. A national park	 b. Zoo	 c. School	 d. Amusement park

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6. What would feel fuzzy in Shenandoah National Park?				
	a. Rainbow	b. Rocks	c. Thorn	d. Caterpillar
7. What can you see that has a lot of colors?				
	a. Footprints	b. Rainbow	c. Bear	d. Deer
8. Which of these might you see when you come to Shenandoah National Park?				
	a. Mountains and hikers	b. Roller coasters	c. Pig	d. Lion
9. What might you hear in Shenandoah National Park?				
	a. Rocks	b. Flowers	c. Birds	d. Thorns
10. Where should you put your litter in Shenandoah National Park?				
	a. Along the mountain trail	b. In a stream	c. In a garbage can	d. Under rocks

**Sense Scientists
Pre-Visit/Post-Visit Assessment
Answer Key**

1. What does a person use to smell the flowers?
b. Nose
2. When you touch someone, you use your
b. Hand
3. What part of the human body do we use to taste?
a. Tongue
4. What would you use to see the green trees and pretty flowers in Shenandoah?
d. Eyes
5. Which place would you most likely see a park ranger?
a. A national park
6. What would feel fuzzy in Shenandoah National Park?
d. Caterpillar
7. What can you see that has a lot of colors?
b. Rainbow
8. Which of these might you see when you come to Shenandoah National Park?
a. Mountains and hikers
9. What might you hear in Shenandoah National Park?
c. Birds
10. Where should you put your litter in Shenandoah National Park?
c. Garbage can