

Approximate time needed
to complete this class

3
hours

Spruce Mountain Hike

Yellow Trail

Explore God's creation while
hiking to the scenic overlook atop
Spruce Mountain

This hike is 1.65 mi. and includes significant elevation change



Placard Number



There are numbered posts that you will see along the trail. Each card in this packet corresponds to a different placard.

Fun Facts!

Most stops will also have a fun fact for you or your students to read!

Focus Question(s):

Hole punch

After stopping at the placard, ask this question! It can lead into conversation about the **vocab** word, the activity, and the nature around you. **Vocab** words will be bolded and their definition will be under this box.

Vocab: These are science terms related to the surrounding nature. They may be new to students or may be review. Shortened form of 'vocabulary'

Activity Instructions:

Each stop has an ACTIVITY! Each activity relates back to the focus question. Activity instructions can be read straight from the card.



Japanese Barberry - Green
leaves in the Spring/Summer



Japanese Barberry - Red leaves
in the Fall

Focus Questions:

- What bush do you notice a lot of at this part of our hike? Point to it.
- This bush is called Japanese Barberry. Based on the name, do you think it is **native** or **non-native**? *It is non-native.*
- It is also an **invasive species** with no natural predators. Take a close look at the bush. Why might animals like deer not want to eat Japanese Barberry? *It has barbs/thorns.*

Native: Originally from this area. (**Non-native** is NOT originally from this area)

Invasive Species: A non-native plant or animal that has a negative impact. (i.e. Other plants dying out because Japanese Barberry has taken over)

Fun Fact!

The berries can be made into jam or used to help a stomach ache!

Activity Instructions:

Even though animals don't eat Japanese Barberry, humans can! Take one leaf off of the bush next to you and try one! People typically compare it to sour green apple but in some seasons it can be a little more bitter than others. And yes, you can eat the berries but they taste pretty awful.



Grey Sandstone - Feels rough/sandy



Shale - Comes in different colors, feels smoother than sandstone

Focus Questions:

- Everything in creation can be split into two categories. We need things from both to live. Do you know the science terms for those categories? **Biotic** & **Abiotic** (see definitions)
- What are some things you can think of that are biotic? *Answers may include plants, people, animals, etc.*
- What about abiotic? *Answers may include water, air, temperature, the sun, etc.*
- Are dead leaves on the ground biotic? *Yes! They were alive!*

Biotic: *living (or once living) things or components in an ecosystem*

Abiotic: *Components in an environment that are not and were not living*

Fun Fact!

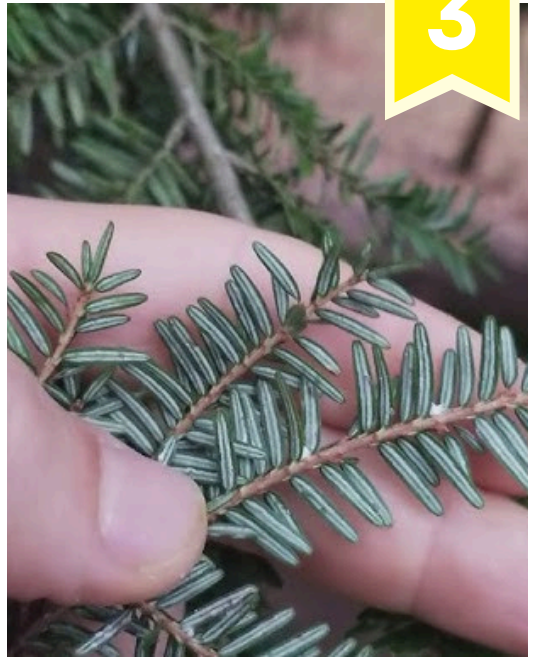
The White House is made from Sandstone. It's durable and easy to shape.

Activity Instructions:

Rocks are abiotic. Look on the front of this card for a description of two common rocks in this area. Each person should find a piece of shale and sandstone. (They don't have to be big!) Once you have your stones, get them wet and rub them together. You've just made natural face paint! Try it on!



An Eastern Hemlock Tree
(Scientific Name: *Tsuga Canadensis*)



Eastern Hemlock Needles are short and flat with two white stripes underneath

Focus Questions:

- This tree is the state tree of Pennsylvania. Does anyone know what its name is?
- What do you notice about this tree that is different from most of the other trees in this forest? *Has needles, cones, is an evergreen, etc.*
- Most trees here are **deciduous**. They drop their leaves each Fall. There is also a science term for trees with needles and cones, does anyone know it? **Coniferous** (or Conifer)

Deciduous Tree: Broad-leaved tree that sheds all its leaves during one season

Coniferous Tree: Tree that produces cones and has needle shaped or scale-like leaves that do not fall off in the winter

Fun Fact!

The Vitamin C rich bark was often used to cure Scurvy by Native Americans & explorers

Activity Instructions:

Everyone pick one or two needles (needles, not branches) from the Eastern Hemlock. These needles are sometimes used in teas that help with colds and coughs. People disagree on what they taste like. Some say citrus, mint, or Christmas. Try one! Which do you think they taste like?



Christmas Fern



Hay-scented Fern



Fiddleheads (Young ferns found
in Springtime only)

Focus Questions:

- Who knows what type of plant this card shows? Ferns
- Can you find different types of ferns in the forest around you?
- God has created over 100 varieties of ferns in Pennsylvania alone. Why do you think God chose to make so many different ferns when he could have just made one type? *Discuss. Answers could include: God is creative, **biodiversity** in plants allows them to outlast threats like disease, droughts, and pests, biodiversity gives animals more food, etc.*

Biodiversity: The variety of life (plants, animals, fungi, etc.) on Earth at every level, from variety in genetics to variety in ecosystems

Fun Fact!

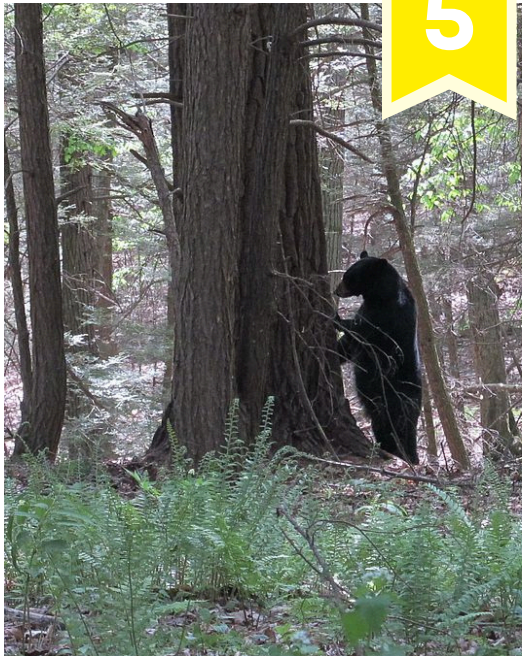
Fiddleheads are young ferns that many people fry up and eat! Bon appetit!

Activity Instructions:

Identify a Hay-scented fern, then pick one frond (a single fern leaf)! Like their name suggests, if you take a Hay-scented fern and scrunch it up in your hand, it will smell like fresh hay!



Deer ears swivel to hear all around them



Black bear in its natural habitat



Focus Questions:

- What kind of animals do you think live in this area?
- All of the living things that interact with each other are called a **community**. God has designed all of creation to live in community, even us! Why do you think community is so important? *Answers may include accountability, encouragement, etc.*
- Communities exist in a **habitat**. As you look around, what do you notice that makes this habitat good for different forest animals? *leaves to hide in, shade, water nearby, etc.*

Community: a group of plants & animals living and interacting with each other in one environmental region. **Habitat:** the natural environment where an organism lives

Activity Instructions:

Climb onto the giant rock! It is easiest if you go around the right side of the rock to get on. Cup your hands behind your ears and turn towards the waterfall. Listen for 5 seconds. Now flip your hands so they are cupped in front of your ears. Listen again. God has given deer ears the ability to do just this. They can hear what is behind them without turning around. *BE CAREFUL WHEN CLIMBING OFF THE ROCK*



Spruce Run Waterfall



Jewelweed (Fall only) leaves look silvery when they're moved around under water

Waterfall Safety Instructions - MUST READ

You will have some time to explore the waterfall. Please follow these rules for your safety

- NEVER run or jump on the waterfall rocks
- Remember, all surfaces are slippery when wet, especially areas covered in moss
- Spruce Lake recommends that you do not go in or across the water
- When climbing, it is helpful to use 3 points of contact. This means having either 2 feet & 1 hand always touching the rocks or 2 hands & 1 foot.

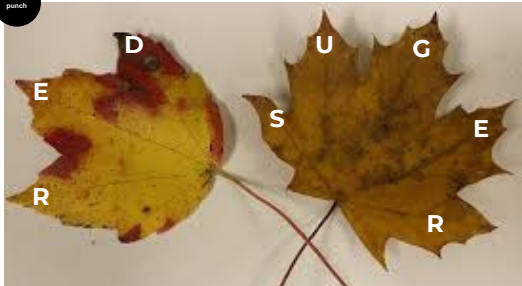


Fun Fact!

Jewelweed is a natural preventative for poison ivy

Activity Instructions:

It is suggested you spend 10-15 minutes at the waterfall stop. This time can be spent exploring (try dipping the jewelweed leaves underwater!), taking pictures, or spending some time individually reflecting and praying.



Red Maple leaves (left) have 3 points, Sugar Maple leaves (right) have 5



Beech Leaves



Red Oak Leaf

Focus Questions:

- Take a look at the leaves around you. What do leaves do to help a tree? *Produce food through **photosynthesis***
- Who knows what photosynthesis means? Can you explain it for us? *see vocab definition*
- Earlier we mentioned that deciduous trees drop their leaves. Why do you think God designed trees like that? How might making leaves fall off in the Fall/Winter help the tree? *Conserves energy, allows wind and snow to go through the branches instead of getting caught in the leaves and putting strain on the tree*

Photosynthesis: *process of using sunlight, water, and carbon dioxide to produce food (glucose) and release oxygen in the air*

Fun Fact!

The Fall colors yellow, red & orange are always in the leaves but aren't visible until the chlorophyll breaks down

Activity Instructions:

Leaf hunt! Everyone has 30 seconds to see if they can find the following three leaves: a maple leaf, a beech leaf, and an oak leaf. You can use the pictures on the front of this card to help identify them. Ready, set go!



Turkey Tail Fungi is a decomposer that helps break down dead trees



Decomposing logs make great shelters for many different creatures

Focus Questions:

- Take a look at this dead tree. What do you notice about it? *Mushrooms, moss, it's soft, broken apart, bugs, etc.*
- What do we call it when something like this dead tree starts breaking down? **Decomposition**
- Is this dead tree useless now that it is decomposing? Why/why not? *No! It is home to many different organisms (like fungi, bugs, small mammals), a food source (to things like woodpeckers) and will provide nutrients to the soil.*

Decomposition: The process where dead organic matter breaks down into basic components or parts (like carbon dioxide or mineral nutrients)

Fun Fact!

Almost all edible mushrooms have an evil twin (toxic look alike)

Activity Instructions:

Decomposition is God's natural recycling system. He uses things we might consider dead and unusable to help other things grow. Find a partner and see if you two can think of a time that God has used someone who seemed unusable to do things for His glory.



Striped Maple Bark



Striped Maple Leaf

Focus Questions:

- What tree do you see a lot of in this area? Point to it! *Students should point to a Striped Maple tree*
- Why do you think that there isn't a lot of variety in the tree types here? *Take a few guesses. The true answer is that a windstorm took out the larger trees (Hemlocks) which used to shade the striped maple trees.*
- The windstorm started the process of **succession**. What might be the positives of the Hemlock trees dying out and the Striped Maples taking over? *Better habitat for small animals, plentiful food sources, etc.*

Succession: *The gradual process by which the mix of species and habitat in an area changes over time*

Fun Fact!

Porcupines, deer, squirrels, rabbits and others love eating Striped Maple

Activity Instructions:

Hemlock trees used to be very populous in this area before the windstorms. You may remember seeing a Hemlock tree earlier in our hike (page 3). See if you can find any that are left in this area. You may have to wander off the path a little bit to see them!

Delaware Water Gap



Safely taking in the view on the Spruce Mountain Overlook



Focus Question(s):

- What shape do you normally think of when you think of a mountain? *A triangle*
- Look out in the distance, do those “mountains” look like a triangle? *Not really, they are flat on top*
- What do we call a raised landform with a flat top? A **Plateau!**

You are standing on a part of Pocono Plateau. From here you can see New Jersey (left of the water gap). See if you can find Spruce Lake Retreat Center or Youth Campus

Plateau: a large, relatively flat area of land that is higher than the land around it

Safety Instructions - MUST READ:

- 2 or 3 people at a time may WALK to the ledge. They must crawl out and lay on their stomachs to look over the edge. All others should stay approximately 15 feet from the edge
- No standing on the overlook rock at any time
- No running
- No jumping off rock formations



A trail sign that the tree grew over prior to Spruce Lake owning the land



Heartwood is dead and gives structure to the tree, Sapwood is alive and growing

Focus Question(s):

- What do you notice about this tree? *There is a piece of metal in it (An old trail sign)*
- Do you think that is a good thing, bad thing, or neutral thing? Why? *It can be bad. If it is too deep in the tree, it could damage the heartwood and leave it open to disease, bugs and moisture*
- God has asked humans to steward, or take care of, the Earth. This old trail sign is a bad example of **stewardship**, what are ways we can be good stewards of creation? *Recycle, conservation, pick up trash, etc.*

Stewardship: the careful and responsible management of creation which God has entrusted to our care

Fun Fact!

The scientific term for when a tree engulfs foreign objects is edaphocotropism. Try saying that!

Descending the Mountain Safely:

- Walk slowly, don't run
- Keep space between the people in front of and behind you
- Do not take shortcuts! This destroys the path and makes it less safe for others

Debrief

This is a group reflection time that can take place on the overlook or after your group gets down from the mountain.

KEY QUESTION:

What is one way that each one of you has seen God on our hike today? *discuss answers*

Verses to reference:

Psalm 19:1 - Glory of God in Creation

Romans 1:20 - God's characteristics seen in creation

Matthew 6:25-26 - God's care for us/creation

Psalm 95:3-5 - Creation belongs to God

Hint: Choose one verse to wrap things up that corresponds with the ways your group saw God!

Close your time together with prayer!

Animals to Look For



Red Eft: The “teenager” stage of the **Eastern Newt**. In this stage, the newt leaves the water to live on land before changing color to brown and returning to the water as an adult



Red-backed Salamander: To evade predators, Red-backed Salamanders can drop all or part of their tail. It will regrow but often will be duller in color than before



Northern Green Frog: The mating call of this frog species sounds like the plucking of a loose banjo string. You will hear them mostly at night, especially along the edge of the pond

Animals to Look For



Wood Frog: These frogs have a distinct dark brown "robbers mask" marking around their eyes. They produce extra glucose in the winter which acts like anti-freeze so they don't freeze solid in cold temps!



Whitetail Deer: Adult male whitetail deer (buck) will have antlers while females (doe) do not. You need a pretty high fence to keep these guys away. They can jump 8ft high!



Image: Elizabeth Hunter

Eastern Grey Squirrel: While albinism is rare, melanism (extra melanin) is pretty frequent. If you see a black squirrel, it is actually just an Eastern Grey Squirrel with melanism

Animals to Look For



Eastern Chipmunk: These furry creatures have cheek pouches made of extendable skin. They use them to carry large amounts of food to their burrows



Red-tailed Hawk: Red-tailed Hawks have a raspy scream that the Hollywood movie industry has recorded and used for almost every instance in which any type of eagle, hawk, or other bird of prey appears on-screen



Woodpeckers: Pileated (top) and Downy (bottom) are two common types of woodpeckers in this area. Woodpeckers find food and shelter by making holes in dead trees. Look around to see if you can find some!