

BACKPACK THE PARKS

Expeditions in Education



Backpack the Parks!



At Expeditions in Education, we believe that learning extends far beyond the classroom walls. That's why we're thrilled to introduce our "Backpack the Parks" initiative, designed to ignite students' curiosity and love for the great outdoors while fostering a deeper understanding of our national parks.

With "Backpack the Parks," educators have the unique opportunity to curate and pack 8 engaging activities into backpacks, making it easier than ever for students to check out and explore the wonders of our national parks. From hands-on science experiments to wildlife scavenger hunts, each activity is carefully crafted to immerse students in the beauty, history, and natural wonders of these treasured landscapes.

Join us in empowering the next generation of park enthusiasts and conservationists as they embark on unforgettable learning adventures in our nation's most cherished natural spaces. With "Backpack the Parks," the journey to discovery begins with the turn of a backpack strap, and the possibilities for educational exploration are endless.

Backpack the Parks!



Instruction

Step 1: Ask for Donations of Backpacks and Clean Them Up

- Reach out to parents, local businesses, or the school community to request donations of gently used backpacks.
- Inspect the donated backpacks for any damage or excessive wear.

Step 2: Print the Activity Cards and Laminate

- Prepare activity cards that detail each of the educational activities you plan to include in the backpacks.
- Print these activity cards on durable cardstock paper.
- Laminate the activity cards to protect them from wear and tear during use.

Step 3: Put Cards on Rings

- Hole punch each laminated activity card.
- Use rings or zip ties to secure the cards together, creating a set of instructions for each activity.

Step 4: Purchase or Collect the Materials Needed for the Activities

- Create a list of materials required for each activity, as outlined in your activity plan.
- Gather all the necessary materials for each activity. This may include items such as magnifying glasses, sketchbooks, rocks, clay, flashlights, and more.

Step 5: Put Materials in Ziplock Bags

- Organize the materials for each activity into separate ziplock bags.
- Ensure that each bag contains all the necessary materials, making it easy for students to access and use them.

Step 6: Attach the National Park Tag to the Outside of the Bag

- Create or print a National Park-themed tag that identifies the backpack as part of the Backpack the Park program.
- Attach this tag securely to the outside of the ziplock bag or backpack.

Activity One: Macroinvertebrate Investigation:

Materials:

- Clear container with water
- Rocks
- Magnifying glass
- A small net or strainer
- A plastic spoon
- A jar

Instructions:

- Fill the container with water and add some rocks to make a mini river.
- Use the net or strainer to gently scoop up some tiny creatures from a local pond or stream.
- Transfer them into the jar using the plastic spoon.
- Look at them closely with the magnifying glass and try to draw or describe what they look like.
- Think about what this tells us about the water quality where you found them.

Activity Two: Rock and Mineral Identification:

Materials:

- A collection of rocks and minerals
- A magnifying glass
- Pictures of common rocks and minerals.

Instructions:

- Look at the rocks and minerals closely using the magnifying glass.
- Compare what you see with the pictures to figure out what type of rock or mineral each one might be.
- Draw or write down your guesses and observations.
- Ask a teacher or parent to help you check if you were right.

Activity Three: Thurmond Historical District Exploration:

Materials:

- A computer or tablet with internet access
- Notebook

Instructions:

- Visit a virtual tour of the Thurmond Historical District online (with a grown-up's help).
- Take a virtual walk through the town and see old buildings and places.
- Write down what you find interesting and what you think life was like in Thurmond a long time ago.

Activity Four: Weathering and Erosion Experiments:

Materials:

- Sand
- A small rock
- A cup, and water

Instructions:

- Fill a cup with sand.
- Put a small rock in the sand, like a pretend mountain.
- Slowly pour water on the sand around the rock to see how the sand changes.
- Imagine this is like rain or a river wearing away the land.
- Draw or write down what happens to the sand and rock.

New River Gorge National Park and Preserve



New River Gorge National Park and Preserve

Activity Five: Bridge Engineering and Testing:

Materials:

- Craft sticks
- White glue
- Small objects like coins or erasers.

• Instructions:

- Use craft sticks to build a small bridge.
- Make sure it's strong and can hold some objects.
- Test your bridge by placing coins or erasers on it, one at a time.
- Keep adding things until your bridge can't hold anymore.
- Think about how you can make your bridge stronger.

Activity Six: Geological Mapping:

Materials:

- Topographical maps of the New River Gorge area
- Markers
- Rulers

Instructions:

- Look at the maps that show how the land looks with lines and bumps.
- Find the special parts like hills, rivers, or mountains on the map.
- Use markers to draw around those special parts and write their names.
- Talk about how the shapes on the map tell us about the rocks and land under them.

Activity Seven: Water Quality Testing:

Materials:

- Water samples
- Water testing kits
- Data sheets

Instructions:

- Get some water from a nearby river, stream, or pond using a clean jar.
- Use the special kits to test the water. They can tell us things like if the water is clean or not.
- Write down what you find out about the water, like if it's too dirty or just right.
- Talk about how clean water is important for fish and plants in the water.

Activity Eight: Shelter Building Skills:

Materials:

- Sticks, leaves, and rocks

Instructions:

- Learn how to make a shelter using sticks and leaves.
- Pretend that the support sticks (like pencils) help hold up the shelter.
- Talk about why it's important to know how to make a shelter in the wild and how safety is always the first rule when you're outside.

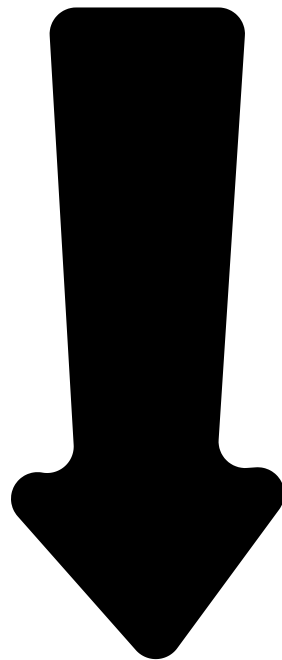
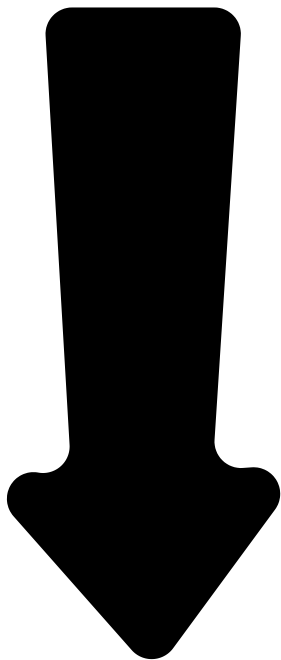


Activity Cards

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Laminate

Put on rings



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BAG TAG BELOW!



**New River Gorge
National Park &
Preserve**

Backpack the Parks!

#ExploreTheParksWithUs

**"Pack Your Curiosity,
Explore Nature's Beauty!"**

www.expeditionsineducation.org

Thurmond Historical District

Introduction: The Thurmond Historical District, located within the New River Gorge National Park and Preserve, is a fascinating and well-preserved testament to the rich history of this region. Nestled in the Appalachian Mountains of West Virginia, Thurmond offers visitors a unique opportunity to step back in time and explore the remnants of a once-thriving coal-mining town.

Historical Significance: Thurmond's history is deeply intertwined with the coal industry, which played a pivotal role in shaping the town's development. The district thrived during the late 19th and early 20th centuries, thanks to the abundance of coal found in the New River Gorge. At its peak, Thurmond was a bustling hub for coal transportation, attracting miners, railroad workers, and businesses. Its significance extended beyond West Virginia, as it served as an essential link in the Chesapeake & Ohio Railway system.

Key Features:

- 1. Historic Train Depot:** The Thurmond Train Depot stands as an iconic symbol of the town's past. Constructed in 1904, it is one of the few surviving structures of its kind. Visitors can explore the depot, which now serves as a visitor center, to learn about the town's history and the role of the railway.
- 2. Boardwalk and Buildings:** The district's boardwalk takes visitors on a journey through time. Along this wooden path, they encounter a series of historic buildings, some of which have been meticulously preserved. These include former businesses, residences, and a bank, offering a glimpse into everyday life in Thurmond during its heyday.
- 3. Railway Tracks:** The railway tracks that run through Thurmond are still active today, serving as a reminder of the town's enduring connection to the railroad industry. Visitors can watch trains pass through, a sight that has been a constant in Thurmond for over a century.

Present-Day Experience: While the town no longer bustles with industry, the Thurmond Historical District offers visitors a serene and educational experience. Walking through the district's well-maintained boardwalk and exploring its historic buildings allows one to envision life in the early 1900s.

Macroinvertebrates

1. Mayfly Nymphs: Mayflies are known for their delicate appearance as adults, but in their nymph stage, they have gills and resemble small aquatic insects.
2. Stonefly Nymphs: Stoneflies have a flattened, elongated body and are often used as indicators of good water quality.
3. Caddisfly Larvae: Caddisflies create protective cases made of sticks and stones. Their larvae are known for constructing these cases.
4. Dragonfly Nymphs: Dragonflies have a unique appearance with their extendable jaws and streamlined body. They are fierce predators underwater.
5. Damselfly Nymphs: Damselflies are similar to dragonflies but usually have a more slender body shape and three "tails" at the end of their abdomen.
6. Midge Larvae: Midges are tiny, worm-like creatures that are often found in large numbers in aquatic ecosystems.
7. Water Beetle Larvae: Water beetle larvae have a tough, segmented body and are excellent swimmers.
8. Crayfish: Crayfish are freshwater crustaceans that are often found hiding under rocks in streams.
9. Scuds: Scuds are small, shrimp-like crustaceans that are transparent and have a curved body shape.
10. Aquatic Worms: Various types of aquatic worms, such as oligochaetes and nematodes, are common in stream sediments.
11. Leech: Leeches are segmented worms that attach to the skin of other organisms to feed on their blood.
12. Alderfly Larvae: Alderfly larvae have a slender, elongated body with a pair of small, finger-like appendages near their head.
13. Hellgrammite: Hellgrammites are large, predatory insect larvae with strong jaws and a robust body.
14. Aquatic Snails: Aquatic snails have a coiled shell and are often found grazing on algae and detritus.
15. Aquatic Beetles: Various types of aquatic beetles, such as diving beetles and whirligig beetles, are adapted for life on the water's surface.

New River Bridge

Introduction: The New River Gorge Bridge, often referred to simply as the New River Bridge, is a remarkable engineering marvel that spans the deep and rugged New River Gorge in Fayetteville, West Virginia. Its construction is a testament to human innovation and determination.

The Need for a Bridge: Before the New River Bridge was built, crossing the New River Gorge was a challenging and time-consuming endeavor. The gorge, with its steep cliffs and rushing river below, posed a significant obstacle for travelers and communities on either side. A reliable bridge was needed to connect the region and improve transportation.

Design and Engineering: The idea of building a bridge across the New River Gorge had been contemplated for decades, but it wasn't until the 1960s that serious plans were developed. The task was enormous, as the gorge was one of the deepest and widest in the United States. Engineers and architects were tasked with designing a bridge that could span the gorge's 3,030-foot width and 876-foot depth.

Construction Challenges: Building the New River Bridge presented numerous challenges. The steep and rocky terrain made construction difficult, and workers had to contend with harsh weather conditions. Additionally, safety measures were paramount due to the height of the gorge.

A Marvel of Engineering: The New River Bridge, completed in 1977, is an engineering marvel for several reasons:

1. **Arch Design:** The bridge features a stunning single arch design, making it one of the longest steel arch bridges in the world.
2. **Height:** It stands 876 feet above the New River, making it one of the highest vehicular bridges globally.
3. **Length:** The bridge spans 3,030 feet across the gorge.
4. **Materials:** It was constructed using over 88 million pounds of American steel.

Impact on the Region: The completion of the New River Bridge had a significant impact on the region. It drastically reduced travel time and improved access to the New River Gorge area, contributing to tourism and economic growth. Additionally, the bridge has become an iconic symbol of West Virginia.

Celebration and Festivals: Every year, the "Bridge Day Festival" is held to celebrate the New River Bridge. During this event, the bridge is temporarily closed to vehicular traffic, allowing brave individuals to base jump and rappel from its towering arch.