

A photograph of two hikers from behind, walking on a dirt trail. The hiker on the left is wearing a yellow and green jacket, blue jeans, and a white cap. The hiker on the right is wearing a red jacket, grey pants, and a grey hat, and is using a trekking pole. They are both carrying large backpacks. The background is a bright blue sky with white clouds and green foliage.

# *Foothills Kids* **MAGAZINE**

**TEACHER'S GUIDE  
WITH LESSON PLANS**

**HAPPY  
TRAILS**

FOOTHILLS KIDS MAGAZINE IS PROUDLY MADE IN WESTERN  
NORTH CAROLINA AND ALIGNS WITH THE STATE CURRICULUM

Dear Teachers,

We are delighted to present our curriculum guide designed to complement our engaging kids' magazine. This comprehensive guide offers a wide range of lesson plans that directly correspond to the articles and features found within the magazine, ensuring a seamless and enriching learning experience for students. We have taken great care to align our curriculum with the North Carolina Standard Course of Study, ensuring that the materials provided not only captivate young minds but also adhere to the educational standards that guide their learning journey.

Our curriculum guide covers a diverse range of subject areas, including Language Arts, Math, Science, Social Studies, Healthful Living, Art, Drama, Music, and PE. With more than 15 comprehensive lesson plans and all the required worksheets, graphics, and handouts, educators can effortlessly integrate the fascinating world of our magazine into their classrooms. This all-inclusive approach allows you to focus on what matters most – guiding and inspiring your students.

By using our curriculum guide, you can seamlessly bring the captivating content of our magazine to life in your classroom, fostering an environment where students are encouraged to explore, learn, and grow across a variety of subjects. We hope that our carefully crafted resources will help you to create meaningful, engaging, and memorable learning experiences for your students.

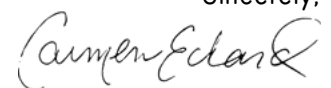
Should you encounter the logo positioned at the top of a page within this guide, it indicates that the content is specifically intended for educators. Conversely, pages without the logo are designed to serve as worksheets, information sheets, or include visuals that aid students in grasping the concepts being taught.

We are overjoyed to present this content to you and aspire to be a collaborator in your educational endeavors. If you have suggestions for how this magazine can better cater to the young learners in our region, we encourage you to contact us at [editor@foothillsdigest.com](mailto:editor@foothillsdigest.com). This guide was developed in response to a teacher's request for lesson plans, illustrating the importance of communication in identifying areas where we can provide assistance. So please, don't hesitate to share your thoughts and ideas with us.

We also warmly invite your students to get in touch with us if they have any questions, suggestions, or if they'd like to share some of the projects they've completed from this issue. Encouraging their engagement not only fosters a deeper connection to the learning material but also helps them feel like valued members of our educational community.

Finally, if you believe that this magazine serves as an exceptional resource, there are numerous ways you can support our continued efforts. One approach is to write to your school board or local political representatives to express your appreciation for the resource. Our funding relies on donations, and with a cost of \$5 per student per year, our aim is to expand this magazine's reach to a 20-county region. Your support and advocacy can significantly contribute to the achievement of this goal.

Sincerely,



Carmen Eckard

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## Muscles and Hiking-A Lesson Plan (Pg 4-7 of Foothills Kids Magazine)

### Objective:

Students will learn about the different muscles used while hiking and the benefits of hiking for overall physical health, specifically geared towards fifth graders.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Images or diagrams of the muscular system (printed or digital)
- Paper and pencils for note-taking
- Optional: video clips or animations illustrating muscle movements during hiking  
<https://www.youtube.com/watch?v=6ObNnCTV6MY>  
<https://www.youtube.com/watch?v=QAnEhz6Eqn4>

### Duration:

60 minutes

### Lesson Outline:

#### Introduction (5 minutes)

- Welcome the students and introduce the topic of muscles and hiking.
- Explain that they will be learning about the different muscles used while hiking and the benefits of hiking for overall physical health.

#### Overview of the Muscular System (15 minutes)

- Provide a brief introduction to the muscular system and its role in the body.
- Use images or diagrams to help students visualize the different muscle groups.
- Discuss major muscle groups used in hiking, such as the quadriceps, hamstrings, calves, glutes, hip flexors, abdominals, and lower back muscles.

#### Muscles in Action: Hiking (20 minutes)

- Explain the role of each muscle group mentioned above during hiking, including how they work together to facilitate movement.
- Optional: Show video clips or animations illustrating muscle movements during hiking to help students understand the concepts better.
- Encourage students to take notes on the different muscles and their functions while hiking.





### Benefits of Hiking (10 minutes)

- Discuss the various benefits of hiking, including:
- Improved cardiovascular health
- Increased muscle strength and endurance
- Enhanced balance and coordination
- Reduced stress and improved mental well-being
- Emphasize the importance of regular physical activity for maintaining overall health and well-being.

### Activity: Design a Hiking Workout (10 minutes)

- Divide students into small groups.
- Instruct each group to design a simple hiking workout plan that targets the major muscle groups used in hiking.
- Encourage students to include warm-up exercises, stretches, and a cool-down routine in their workout plans.
- Have each group share their workout plan with the class and explain how it targets the different muscle groups.

### Conclusion (5 minutes)

- Recap the main points of the lesson, emphasizing the muscles used during hiking and the benefits of hiking for overall physical health.
- Encourage students to participate in hiking or other outdoor activities to improve their fitness levels and enjoy the benefits of physical activity.
- Invite students to share their thoughts and reflections on the lesson.

### NCSCOS:

3.PCH.1, 3.NPA.1, 3.MS.1, 3.HF.3

4.NPA.1 A, 4.MS.1

5.MS.1, 5.MC.2, 5.HF.3

## Muscles:

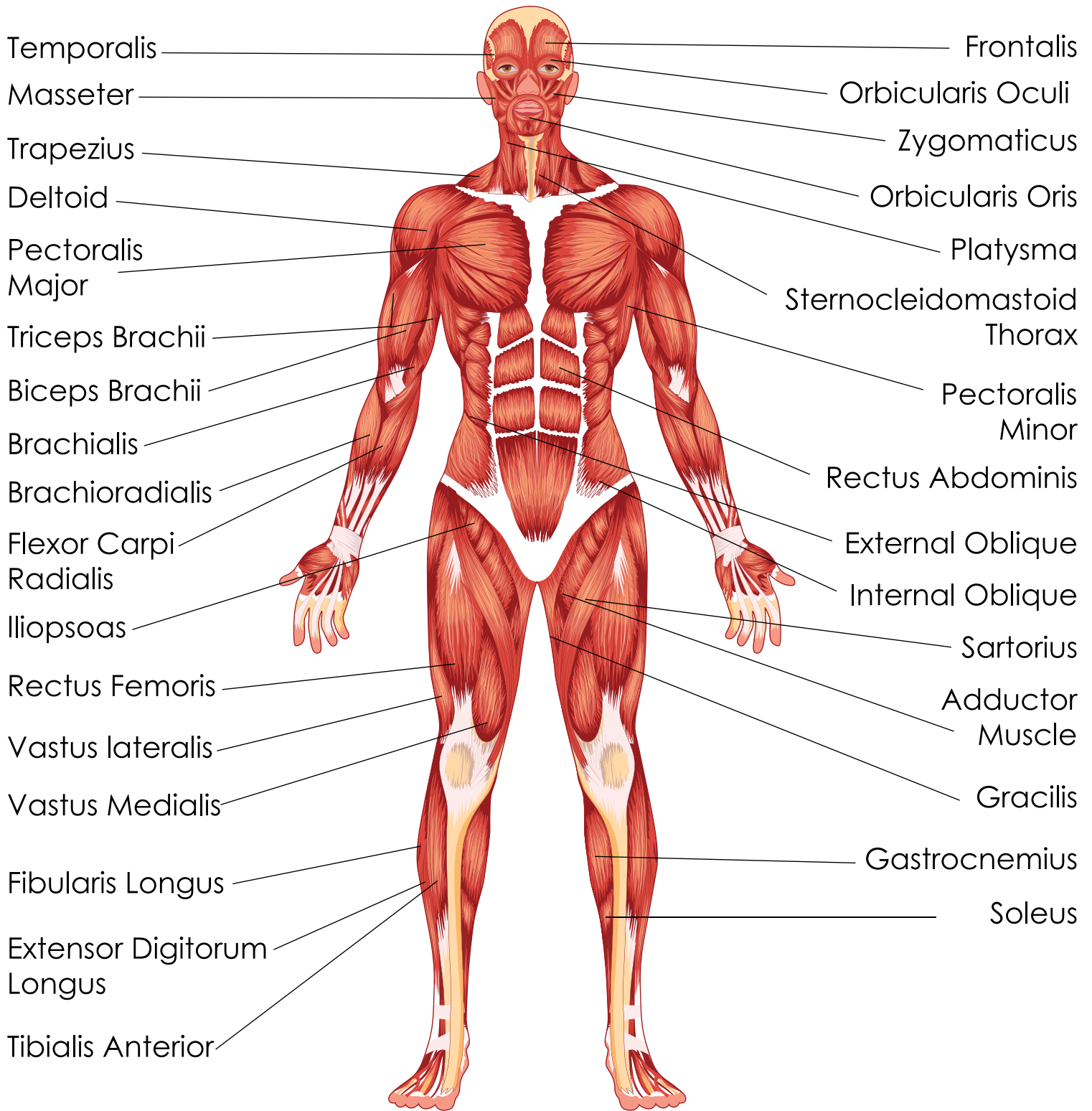
The muscular system is an essential part of our body that helps us move, maintain posture, and perform various activities. Muscles are like the engine of our body, and they work together to help us walk, run, jump, and even pick up objects. There are more than 600 muscles in our body, and they come in different types, but today, we will focus on the muscles that are important for hiking.

When we go hiking, we use many different muscle groups to help us move through the terrain. Some of the major muscle groups we use during hiking include the quadriceps, hamstrings, calves, glutes, hip flexors, abdominals, and lower back muscles.

- **Quadriceps:** These are the large muscles at the front of your thighs. They help you straighten your legs, lift your knees, and climb uphill.
- **Hamstrings:** Located at the back of your thighs, the hamstrings work together with the quadriceps to help you bend your knees and control your movements while walking downhill.
- **Calves:** The muscles in your lower legs are essential for pushing off the ground and maintaining balance on uneven terrain.
- **Glutes:** Your gluteal muscles, or "glutes," are the muscles in your buttocks. They help to stabilize your hips, support your body weight, and propel you forward while hiking.
- **Hip flexors:** These muscles, located at the front of your hips, help you lift your legs and maintain balance, especially when stepping over obstacles or climbing uphill.
- **Abdominals:** Your abdominal muscles, or "abs," are located in your stomach area. They help to support your spine and maintain balance while hiking, especially when carrying a backpack.
- **Lower back muscles:** These muscles work together with your abdominal muscles to support your spine and help you maintain proper posture during your hike.

When we hike, these muscle groups work together to help us move efficiently and safely. For example, as we step uphill, our quadriceps and hip flexors help lift our legs, while our glutes and hamstrings push us forward. Meanwhile, our calves, abdominals, and lower back muscles work together to maintain our balance and support our body weight. Understanding how these muscles work together can help us become stronger hikers and appreciate the amazing things our bodies can do.

# Muscular System





## Create Your Own Exercise Routine for Hiking-Lesson Plan

### Objective:

Students will design a simple exercise routine targeting major muscle groups used in hiking and demonstrate an understanding of the importance of physical fitness for hiking and overall health.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Handout and graph about muscles (included)
- Paper and pencils for students

### Introduction (10 minutes):

- Begin by discussing the importance of physical fitness for hiking and overall health. Explain that being physically fit can make hiking more enjoyable, prevent injuries, and improve overall well-being. Introduce the idea of creating a personalized exercise routine for hiking, focusing on the major muscle groups involved in this activity.

### Guided Research (15 minutes):

- Have students research the major muscle groups used in hiking, such as the quadriceps, hamstrings, calves, glutes, core, and shoulders. Instruct students to find warm-up exercises, stretches, and strength-building activities that target each of these muscle groups. Provide research materials, such as books, printouts, or access to the internet.

### Independent Work (20 minutes):

- Give each student a piece of paper and a pencil. Ask them to design their own exercise routine for hiking, including warm-up exercises, stretches, and strength-building activities for each major muscle group.
- Encourage students to think about the order of the exercises and the duration of each activity. They can also include illustrations or diagrams to help explain their routines.

### Presentation and Sharing (10 minutes):

- Have students volunteer to present their exercise routines to the class. Encourage them to explain the purpose of each exercise and how it targets a specific muscle group. If comfortable, students can demonstrate some of the exercises for their classmates.

### Conclusion (5 minutes):

- Wrap up the lesson by emphasizing the importance of physical fitness for hiking and overall health.
- Remind students that they can use their personalized exercise routines to help prepare for future hiking adventures.
- Encourage students to continue exploring other exercises and activities that can improve their fitness.





**Exploring the Appalachian Trail-A Lesson Plan**  
**Foothills Kids Magazine Pages 9-10**

Duration:

60 minutes

Objective:

Students will learn about the history, geography, and significance of the Appalachian Trail and engage in a creative activity to demonstrate their understanding.

Materials:

- Whiteboard or blackboard
- Markers or chalk
- Map of the Appalachian Trail (Included)
- Research materials (books, printouts, or access to the internet)
- Paper and pencils for students

Introduction (10 minutes):

- Begin by introducing the Appalachian Trail to the class. Explain that it is a 2,190-mile hiking trail that stretches from Georgia to Maine in the eastern United States.
- Show students a map of the Appalachian Trail and point out some of the key features, such as the starting and ending points, the 14 states it passes through, and notable landmarks along the way.

History and Geography (15 minutes):

- Discuss the history of the Appalachian Trail, including its conception by Benton MacKaye, its construction, and its completion in 1937.
- Explore the geography of the trail, discussing the diverse landscapes, flora, and fauna that can be found along the way. Highlight some of the most famous locations, such as the Great Smoky Mountains National Park, Shenandoah National Park, and Mount Katahdin.

Significance of the Trail (10 minutes):

- Explain the importance of the Appalachian Trail in terms of recreation, conservation, and cultural heritage. Discuss how the trail has inspired people to explore and appreciate the natural beauty of the eastern United States.
- Mention the different ways people use the trail, such as day hikes, section hiking, and thru-hiking, and discuss the challenges and rewards of each type of hike.

Creative Activity (20 minutes):

- Divide students into small groups and provide each group with research materials related to the Appalachian Trail.
- Assign each group a specific section or landmark along the trail. Instruct them to research the history, geography, and significance of their assigned section or landmark.



- Ask each group to create a poster, brochure, or presentation about their section or landmark, highlighting its unique features and the experiences hikers can expect when visiting that location.

Presentation and Sharing (5 minutes):

- Have each group briefly present their work to the class, sharing the highlights of their assigned section or landmark on the Appalachian Trail.

Conclusion:

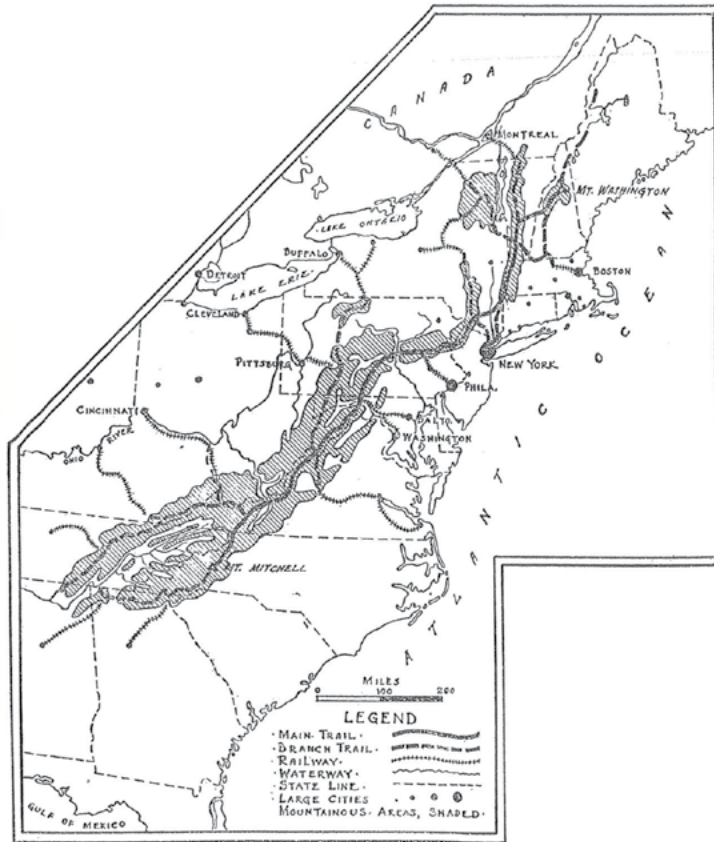
Wrap up the lesson by emphasizing the importance of the Appalachian Trail in terms of recreation, conservation, and cultural heritage. Encourage students to learn more about the trail and consider exploring it themselves in the future, whether through a day hike or a more extended adventure.

NCSCOS

EX.3.G.1

4.G.1

5.G.1, 5.H.1, EX.5.G.1



The map at the left is from the National Parks Service and shows the whole length of the Trail in a format we are familiar with. At the top of the page is a map provided by the Appalachian Trail Conservancy, and it is rotated, so that North is not at the top of the page. How does this change how you see the trail? The map in the middle of the page is the original map drawn to show the idea for the Appalachian Trail. At right, you'll see a relief map that is meant to show you how high the mountains are. How does it change how you feel about the Appalachian Trail?



## History of the Appalachian Trail

- The idea for the Appalachian Trail was proposed by Benton MacKaye, a forester, planner, and conservationist, in 1921.
- Construction of the trail began in 1923 and was completed in 1937.
- The trail was built by volunteers and coordinated by the Appalachian Trail Conservancy, which was established in 1925.
- Myron Avery, an early supporter of the trail, was the first person to hike the entire trail in sections, completing it in 1936.
- Earl Shaffer was the first person to complete a continuous "thru-hike" of the trail in 1948.
- The National Trails System Act of 1968 designated the Appalachian Trail as the first National Scenic Trail in the United States.
- The trail is maintained and protected by thousands of volunteers who dedicate their time and resources to ensure its preservation.

## The Appalachian Trail in North Carolina

- The Appalachian Trail passes through North Carolina for approximately 95.7 miles, while an additional 224.7 miles run along the border between North Carolina and Tennessee.
- The highest point on the Appalachian Trail is Clingmans Dome, at 6,643 feet, located in the Great Smoky Mountains National Park in North Carolina.
- Notable landmarks along the trail in North Carolina include the Nantahala River Gorge, Fontana Dam, and the Roan Highlands.
- The trail passes through diverse landscapes in North Carolina, such as hardwood forests, grassy balds, and high-elevation spruce-fir forests.
- The Appalachian Trail in North Carolina offers a wide range of difficulty levels, from easy strolls to challenging climbs.
- The trail provides access to several side trails in North Carolina, such as the Art Loeb Trail, the Mountains-to-Sea Trail, and the Bartram Trail.
- Hiking the Appalachian Trail in North Carolina offers opportunities for wildlife observation, including black bears, white-tailed deer, and various bird species.

## The Appalachian Trail - Overall Highlights

- The Appalachian Trail stretches approximately 2,190 miles from Springer Mountain in Georgia to Mount Katahdin in Maine.
- The trail passes through 14 states: Georgia, North Carolina, Tennessee, Virginia, West Virginia, Maryland, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Vermont, New Hampshire, and Maine.
- The trail is managed by the National Park Service, the United States Forest Service, and the Appalachian Trail Conservancy.
- Around 3 million people visit the trail each year for day hikes, section hikes, and thru-hikes.
- The trail is home to diverse flora and fauna, including more than 2,000 rare, threatened, and endangered species.
- The Appalachian Trail offers a wide range of recreational opportunities, including hiking, camping, bird watching, and nature photography.

## INTERESTING FACTS ABOUT PEOPLE WHO HAVE HIKED THE ENTIRE APPALACHIAN TRAIL:

**Youngest Thru-Hiker:** Christian Thomas Geiger, known as "Buddy Backpacker," was the youngest person to complete a thru-hike of the Appalachian Trail at the age of 5 in 2013. He hiked the trail with his parents and completed it in 8 months.

**Oldest Thru-Hiker:** Dale "Grey Beard" Sanders was the oldest person to complete a thru-hike of the Appalachian Trail at the age of 82 in 2017. Sanders is also known for being the oldest person to paddle the entire length of the Mississippi River in a canoe.

**First Thru-Hiker:** Earl Shaffer was the first person to complete a continuous thru-hike of the Appalachian Trail in 1948. Shaffer, a World War II veteran, hiked the trail as a way to "walk off the war." He completed the trail again in 1965 and in 1998 at the age of 79, marking the 50th anniversary of his first hike.

**Fastest Thru-Hike (Supported):** Karel Sabbe, a Belgian dentist, and ultrarunner, set the fastest known time (FKT) for a supported thru-hike of the Appalachian Trail in 2018. He completed the trail in 41 days, 7 hours, and 39 minutes, breaking the previous record by more than 4 days.

**Fastest Thru-Hike (Self-Supported):** Heather "Anish" Anderson set the fastest known time for a self-supported thru-hike of the Appalachian Trail in 2015, completing the trail in 54 days, 7 hours, and 48 minutes. Anderson is also the first woman to hold the self-supported FKT on both the Appalachian Trail and the Pacific Crest Trail simultaneously.

**First Solo Female Thru-Hiker:** Emma "Grandma" Gatewood was the first woman to hike the entire Appalachian Trail solo in one season in 1955. She was 67 years old at the time and completed the trail wearing Keds sneakers and carrying a homemade backpack. Gatewood hiked the trail again in 1960 and 1963, becoming the first person to hike the trail three times.

**First to Complete the "Calendar-Year Triple Crown":** In 2018, Heather "Anish" Anderson became the first person to complete the "Calendar-Year Triple Crown," which involves hiking the Appalachian Trail, Pacific Crest Trail, and Continental Divide Trail in a single calendar year. She hiked a total of 7,900 miles in 251 days.





## Discovering Southern Appalachian Mountain Animals: A Creative Lesson Plan Pages 12-16 in Foothills Kids Magazine

### Objective:

Students will learn about various animals found in the Southern Appalachian Mountains and engage in a creative activity to demonstrate their understanding, fostering creativity, environmental awareness, and appreciation for wildlife.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Paper (for drawing, writing, or folding)
- Pencils, erasers, and colored pencils
- Foothills Kids Magazine, pages 12-16, images
- Handout on Southern Appalachian Mountain animals (included)
- Optional: modeling clay or playdough

### Duration:

2 sessions of 60 minutes each

### Lesson Outline:

#### Session 1: Introduction to Southern Appalachian Mountain Animals

##### Introduction (10 minutes)

- Welcome the students and briefly explain the purpose of the lesson.
- Show pictures or slides of the Southern Appalachian Mountains and discuss the region's unique ecosystem.
- Animal Exploration (25 minutes)
- Introduce the featured animals: hellbenders, black bears, peregrine falcons, chipmunks, synchronous fireflies, red foxes, eagles, and owls, and others in the magazine.
- Show pictures or slides of each animal and provide brief descriptions, including their habitats, behaviors, and unique features.
- Pass out the handout on Southern Appalachian Mountain animals.

##### Group Discussion (15 minutes)

- Divide students into small groups and assign each group one or two of the featured animals.
- Have students discuss their assigned animal(s) and brainstorm interesting facts, features, or behaviors they learned.



### Creative Activity Preparation (10 minutes)

- Explain that students will choose a creative activity to showcase their assigned animal(s) in the next session.
- Possible activities include drawing, writing a short story or poem, creating a diorama, or making a clay model.
- Have students discuss their chosen activity within their group and plan their approach.

### Session 2: Creative Activity

#### Review (5 minutes)

- Recap the previous session and remind students of their assigned animals and chosen activities.

#### Creative Activity (40 minutes)

- Have students work in their groups to create their projects, using the materials provided.
- Encourage students to collaborate, share ideas, and support each other throughout the process.
- Circulate around the room, providing guidance and encouragement as needed.

#### Presentations and Gallery Walk (10 minutes)

- Have each group briefly present their creative project to the class, explaining their chosen activity and how it represents their assigned animal(s).
- Set up a gallery walk, allowing students to view and discuss each other's projects.

#### Reflection and Conclusion (5 minutes)

- Ask students to reflect on what they learned about Southern Appalachian Mountain animals and the importance of preserving their habitats.
- Encourage students to continue learning about wildlife and their ecosystems.
- Congratulate students on their creative projects and newfound knowledge.

NCSCOS:

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## SOUTHERN APPALACHIAN ANIMALS HANDOUT

Peregrine Falcon:



The Peregrine Falcon is a formidable bird of prey, known for its incredible speed and agility in the air. It is famous for being the fastest animal in the world, reaching speeds of over 240 miles per hour during its hunting dive, called a stoop. Peregrine Falcons primarily feed on other birds, such as pigeons, doves, and smaller songbirds. They can often be found nesting on high cliffs or tall structures, providing them with an excellent vantage point to spot potential prey. In the Southern Appalachian Mountains, keep an eye out for them near open spaces or rocky outcroppings where they can hunt effectively.

Hellbender:



The Hellbender, also known as the “snot otter” or “lasagna lizard,” is one of the largest species of salamanders in North America. They can grow up to 29 inches long and have a unique, flattened appearance that helps them navigate their preferred habitat: cool, fast-flowing streams and rivers with plenty of rocks and crevices to hide in. Hellbenders are primarily nocturnal and feed on crayfish, small fish, and aquatic insects. Unfortunately, they are considered a species of special concern due to habitat loss, pollution, and declining populations. In the Southern Appalachian Mountains, you may encounter these elusive creatures in clean, well-oxygenated streams.

Black Bear:



The Black Bear is the smallest of the three bear species found in North America and is a highly adaptable animal that can thrive in various habitats, including the Southern Appalachian Mountains. Black bears are omnivores with a diverse diet that includes nuts, berries, insects, and small mammals, but they may also feed on carrion and, occasionally, larger prey. They have an excellent sense of smell and are skilled climbers, often scaling trees to find food or escape danger. In the mountains, they can be found in dense forests, meadows, or along the edges of water sources.

### White-Tailed Deer:



White-tailed deer are one of the most common large mammals found in the Southern Appalachian Mountains. They are named after their distinctive white tail, which they raise when alarmed to warn other deer of potential danger. These deer are herbivores, primarily feeding on leaves, twigs, fruits, and nuts. They prefer habitats with a mix of forest and open areas, allowing them to find food and take cover from predators. In the mountains, white-tailed deer can often be spotted near forest edges or meadows, especially during dawn and dusk when they are most active.

### Great Horned Owl:



The Great Horned Owl is one of the largest and most widespread owl species in North America. Recognizable by its large, tufted "horns" and yellow eyes, this nocturnal predator is an excellent hunter, preying on a wide variety of animals, including rodents, rabbits, birds, and even other owls. They have a powerful grip, allowing them to catch and carry prey that may weigh more than themselves. Great Horned Owls can be found in a variety of habitats, from forests to deserts. In the Southern Appalachian Mountains, they can often be spotted roosting in tall trees, using their incredible camouflage to blend in with their surroundings.

### Eastern Chipmunk:



Eastern Chipmunks are small, energetic rodents known for their distinctive striped fur and cheek pouches used to carry food. They are omnivores, feeding on nuts, seeds, fruits, insects, and even small mammals and bird eggs. Chipmunks create extensive burrow systems where they store food, raise their young, and hibernate during winter. In the Southern Appalachian Mountains, they can be found in deciduous forests, where they forage on the forest floor and scurry up trees to escape potential predators. Keep an eye out for them near logs, rocks, and tree roots, where they often create their burrows.

### Pileated Woodpecker:



The Pileated Woodpecker is the largest woodpecker species in North America, known for its striking red crest and loud, distinctive drumming sound. They primarily feed on insects, particularly carpenter ants and wood-boring beetle larvae, which they excavate from trees using their strong beaks. They also eat fruits, nuts, and berries. Pileated Woodpeckers create large, rectangular holes in trees while foraging, which are then used by other species as nesting sites. In the Southern Appalachian Mountains, they can be found in mature forests with plenty of large, dead trees, which provide both food and nesting opportunities.

### Synchronous Fireflies:



Synchronous fireflies are a unique species of firefly found in the Southern Appalachian Mountains, particularly in the Great Smoky Mountains National Park. Unlike other fireflies, these insects are known for their spectacular synchronized flashing, which occurs during their mating season in late spring to early summer. Males and females use specific flash patterns to identify and locate potential mates. They typically inhabit dense forests near streams, where their larvae feed on snails and other small invertebrates. To witness this mesmerizing natural phenomenon, plan a visit to the mountains during the peak of their mating season.

### Bald Eagle:



The Bald Eagle, the national bird of the United States, is an iconic bird of prey known for its striking white head and tail, dark body, and powerful wingspan. They primarily feed on fish, which they snatch from the water's surface with their sharp talons, but also consume birds, small mammals, and carrion. Bald Eagles typically build their large, sturdy nests in tall trees or cliffs near water sources. In the Southern Appalachian Mountains, they can often be found near rivers, lakes, and wetlands, where they have access to their preferred prey.



Red Fox:



The Red Fox is a highly adaptable and intelligent carnivore found in a wide variety of habitats, including the Southern Appalachian Mountains. With its distinctive reddish-orange fur, bushy tail, and keen senses, the Red Fox is an efficient hunter, preying on rodents, rabbits, birds, and other small animals. They are also known to consume fruits and insects. Red Foxes are primarily nocturnal and can be found in forests, meadows, and even suburban areas. Keep an eye out for them at dawn and dusk, when they are most active and likely to be seen.

Raccoon:



Raccoons are curious, adaptable mammals known for their distinctive black “mask” and ringed tail. They are omnivores, feeding on a wide variety of foods, including fruits, nuts, insects, small mammals, and aquatic creatures such as crayfish and frogs. Raccoons are opportunistic feeders and are known for their problem-solving skills when it comes to finding food, often raiding garbage cans and campsites. They can be found in various habitats, from forests to urban areas. In the Southern Appalachian Mountains, raccoons can often be spotted near water sources and wooded areas.

Eastern Nuthatch:



The Eastern Nuthatch, also known as the White-breasted Nuthatch, is a small, agile bird known for its unique habit of climbing headfirst down tree trunks. Their strong toes and long, sharp claws enable them to maneuver easily on tree bark as they search for insects, seeds, and nuts. They are also known for their distinctive call, which sounds like a nasal “yank-yank.” Eastern Nuthatches are cavity nesters and can be found in deciduous and mixed forests. In the Southern Appalachian Mountains, look for them in forested areas with plenty of mature trees, where they can find both food and nesting sites.

### Barred Owl:



The Barred Owl is a large, stocky owl with a rounded head, dark eyes, and distinctive horizontal barring on its chest. They are nocturnal predators that primarily feed on small mammals, such as mice and squirrels, but will also eat birds, amphibians, and reptiles. Barred Owls have a deep, resonant call that sounds like “Who cooks for you? Who cooks for you all?” They prefer mature forests with large trees, often near water sources, where they roost during the day and hunt at night. In the Southern Appalachian Mountains, you may spot them in wooded areas, especially near swamps, marshes, and rivers.

### Rabbit:



Eastern Cottontail rabbits are common throughout the Southern Appalachian Mountains, recognizable by their fluffy white tails and large, powerful hind legs. These herbivorous animals primarily feed on grasses, leaves, and bark, as well as fruits and vegetables when available. Rabbits are prey for many predators, and their impressive speed and agility help them evade danger. They are most active during dawn and dusk and can often be found in open areas with nearby cover, such as meadows, fields, and forest edges. Keep an eye out for them while hiking, as they may suddenly dart from the underbrush.

### Wild Turkey:



Wild Turkeys are large, ground-dwelling birds native to North America, known for their fan-shaped tail and wattle neck. They are omnivorous, feeding on a variety of plant materials, including seeds, nuts, fruits, and leaves, as well as insects and small vertebrates. Wild Turkeys have strong legs and can run at speeds of up to 25 miles per hour, though they are also capable of flying short distances. They typically inhabit mixed forests and grasslands and can often be found in the Southern Appalachian Mountains near forest edges, meadows, and agricultural fields.



## Exploring the Word "Trail": A Creative Lesson Plan

### Pages 16-17 in Foothills Kids Magazine

#### Objective:

Students will explore the various uses and meanings of the word "trail," understand the context in which the word is used, and learn idioms involving the word "trail." They will engage in creative activities to reinforce their understanding of the word and its applications.

#### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Paper
- Pencils, erasers, and colored pencils or markers
- Printed idioms and examples
- Information about Idioms (Included)

#### Duration:

60 minutes

#### Lesson Outline:

##### Introduction (5 minutes)

- Welcome the students and introduce the topic by writing the word "trail" on the board.
- Explain that the word "trail" has multiple meanings and uses, and the class will explore them through various activities.

##### Brainstorming (10 minutes)

- Ask the students to share their ideas about the meanings and uses of the word "trail."
- Write their suggestions on the board, creating a list or word web.
- Discuss the different meanings and provide examples, such as a path or route, following someone, or trailing behind in a competition.

##### Idioms (10 minutes)

- Introduce the concept of idioms involving the word "trail."
- Present a few examples, such as "hit the trail," "trailblazer," and "blaze a trail."
- Explain the meanings of these idioms and ask students to share any additional idioms they know involving the word "trail."



Creative Writing (15 minutes)

- Divide the students into small groups and provide each group with a different meaning or idiom of the word "trail."
- Instruct students to create a short story or skit that incorporates the meaning or idiom they were given.
- Encourage them to use their creativity and imagination to develop interesting and engaging narratives.

Presentations (15 minutes)

- Have each group present their short story or skit to the class, using the word "trail" in the context they were assigned.
- Encourage the audience to pay attention to how the word "trail" is used in each presentation and to provide feedback on the presentations.

Reflection and Conclusion (5 minutes)

- Discuss the various uses and meanings of the word "trail" and how they were demonstrated in the students' stories and skits.
- Ask students to share their favorite use or meaning of the word "trail" and any new idioms they learned during the lesson.
- Reinforce the importance of understanding word meanings and idioms in enhancing their language skills and communication abilities.

NCSCOS:

STANDARDS 4 & 5 FOR ENGLISH LANGUAGE DEVELOPMENT  
(ALL THREE GRADES)

## IDIOMS THAT USE THE WORD "TRAIL" AND THEIR MEANINGS:

**Trail behind:** To lag or be behind someone or something in progress or movement. This idiom implies that someone is slower or less advanced than others.

Example: "He trailed behind the rest of the class in his math skills."

**Hit the trail:** To begin or resume traveling, often on foot; to set out on a journey, especially in the context of hiking or outdoor exploration.

Example: "We woke up early to hit the trail before the sun became too hot."

**Blaze a trail:** To create a new path, either physically or metaphorically; to pioneer or innovate in a particular field or area.

Example: "Marie Curie blazed a trail for women in the field of science with her groundbreaking discoveries."

**Trail off:** To gradually become quieter, weaker, or less intense, usually referring to speech or writing.

Example: "Her voice trailed off as she realized she was alone in the room."

**On the trail of:** To be actively searching for or pursuing someone or something, often in the context of detective or investigative work.

Example: "The detective was on the trail of the missing artwork."

**Lose the trail:** To become unable to follow or understand something, often referring to losing one's way in a conversation or while following directions.

Example: "I lost the trail when she started talking about advanced calculus."

Please note that idiomatic expressions can vary by region and may not always be universally understood. However, these idioms provide a good starting point for understanding the various ways the word "trail" can be used metaphorically in the English language.





## Ant Pheromone Trails: A Creative Lesson Plan

### Pages 18-19 in Foothills Kids Magazine

#### Objective:

Students will learn about pheromone trails ants use for communication and navigation, engage in a creative activity to simulate the process, and apply their understanding of pheromone trails to real-life situations.

#### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Large poster paper
- Non-toxic washable paint or water-based markers
- Paper plates or trays (for paint)
- Small paintbrushes or cotton swabs
- Blindfolds
- Optional: magnifying glasses, video or images of ants following pheromone trails  
<https://www.youtube.com/watch?v=3Cs03iM8hG4>

#### Duration:

60 minutes

#### Lesson Outline:

##### Introduction (5 minutes)

- Welcome the students and introduce the topic by writing the word “pheromone” on the board.
- Explain that they will be learning about pheromone trails and how ants use them for communication and navigation.

##### Ant Pheromone Trails (15 minutes)

- Discuss the concept of pheromone trails, explaining that ants release chemical signals called pheromones to mark paths and communicate with other ants.
- Show the video of ants following pheromone trails.
- Explain how ants can detect these trails with their antennae and how the trails help them find food and return to their nests.
- Optional: Use magnifying glasses to observe ants in their natural environment if possible.



### Creative Activity: Simulating Pheromone Trails (30 minutes)

- Divide the students into groups of 3-4 and provide each group with a large poster paper, non-toxic washable paint or water-based markers, paper plates or trays, and small paintbrushes or cotton swabs.
- Explain that each group will create their own "pheromone trail" on the poster paper by drawing a winding path from one corner to the opposite corner.
- Instruct the first student in each group to dip their paintbrush or cotton swab in the paint or use a marker and draw the beginning of the trail. Each student will add a section to the trail until it reaches the opposite corner of the paper.
- Have the last student in each group place a small "food" symbol at the end of the trail.
- Once the trails are completed, give each group a blindfold. One student will wear the blindfold and try to follow the pheromone trail using their finger, guided only by the verbal instructions of their teammates. The goal is to reach the "food" symbol at the end of the trail.
- Rotate roles so each student has a chance to be the "blindfolded ant" and a "guiding ant."

### Reflection and Discussion (10 minutes)

- Gather the students and discuss their experiences during the activity. Ask them to reflect on the challenges they faced while following the pheromone trails and the importance of communication.
- Encourage students to share their thoughts on how pheromone trails could be applied to human situations, such as navigating unfamiliar environments or working together as a team.
- Reinforce the importance of understanding animal communication and the practical applications of pheromone trails in daily life.

### Conclusion (5 minutes)

- Congratulate students on their successful pheromone trail navigation and creative teamwork.
- Encourage them to continue exploring the fascinating world of animal communication and apply what they have learned to their own lives.

NCSCOS:

EX.3.L.1

EX.4.L.1

EX.5.L.2

# ANDY'S ADVENTURE

Once upon a time in the beautiful Southern Appalachian forest, there lived a young ant named Andy. Andy was a curious little ant, always eager to explore the world around him. He was a hard worker too, helping his fellow ants collect food and take care of the colony.

One sunny morning, Andy was following a scent trail left by his friend, Alice the Ant. The trail led to a delicious food source: a picnic left behind by humans. Andy was so excited that he didn't notice the gust of wind that blew away the scent trail.

As he reached the picnic site, he found his ant friends feasting on a scrumptious meal of breadcrumbs, fruits, and a tiny slice of cake. Andy joined the feast, munching on a piece of watermelon. He was so happy that he forgot all about the lost trail.

When they had eaten their fill, the ants decided to head back to the colony. But as they started to follow the scent trail, Andy realized it had disappeared! He panicked and looked around, trying to remember the way back home. Feeling lost and alone, Andy decided to set off on his own, hoping to find his way back to the colony. He climbed over pebbles, scurried under leaves, and even crossed a treacherous twig bridge. Along the way, he met a wise old spider named Sally.

"Little ant," said Sally, "you seem to have lost your way. What brings you so far from your colony?"

"I lost the scent trail," Andy explained sadly. "I don't know how to get home."

"Don't worry, young one," Sally reassured him. "The forest is full of friends who can help you find your way. Follow the creek, and you'll meet someone who can guide you."

Andy thanked Sally and followed her advice. As he walked along the creek, he stumbled upon a cheerful grasshopper named Gary.

"Hello there, little ant," Gary greeted him. "Where are you headed?"

"I'm trying to find my way back to my colony," Andy replied. "I lost the scent trail, and now I'm lost."

"Well, you're in luck!" Gary exclaimed. "I know these woods like the back of my leg. Hop on, and I'll take you to your colony."

Andy climbed onto Gary's back, and together, they set off on a great adventure. They leaped over mushroom forests, bounded through thickets of ferns, and even encountered a curious squirrel named Sam.

Finally, as the sun began to set, Gary and Andy reached the ant colony. Andy's friends and family had been worried about him, but they were overjoyed to see him safe and sound.

"I'm so glad you're back, Andy," said Alice, hugging her friend. "We missed you!"

Andy thanked Gary and shared some food with him before Gary went on his way.



# MAKE AN ANT FARM

Creating your own ant farm is a fun and educational project that allows you to observe the fascinating behavior of ants up close. With some everyday items, you can make a simple yet effective ant habitat that will keep your ants happy and healthy. Here are the steps to create your own DIY ant farm!

## MATERIALS:

Glass jar or plastic container with a lid

Sand or soil

Water

Ants (collected from outdoors)

Small pebbles or twigs

Cotton balls or sponge, colored tape or markers for decoration

## INSTRUCTIONS:

**FIND THE RIGHT CONTAINER:** You'll need a container that's big enough to hold your ants and has a lid to prevent them from escaping. A clear glass jar or plastic container works well so you can see the ants in action. Make sure the lid has small holes for ventilation.

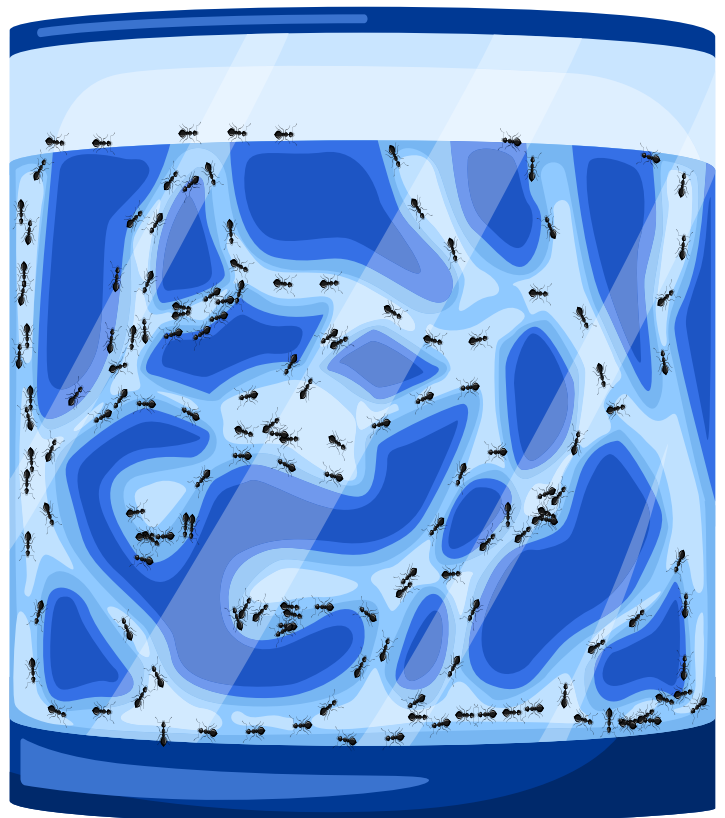
**CREATE A NEST:** Ants need a place to rest and store food, so create a nest area in your container. Fill the bottom of the container with sand or soil, then add small pebbles or twigs to create tunnels and chambers. You can also use cotton balls or a sponge to create a soft area for the ants to rest.

**ADD WATER:** Ants need water to survive, so add a few drops of water to the sand or soil. Be careful not to add too much, or it could flood the nest.

**FIND ANTS:** The best way to find ants is to look for them outdoors. You can also ask an adult to help you find a small ant colony. Gently scoop up the ants and their nest with a spoon and transfer them to your ant farm.

**OBSERVE AND FEED:** Once your ants are settled in their new home, observe their behavior and feeding habits. Ants eat a variety of foods, including sugar water, honey, and small pieces of fruit. Provide a small amount of food on a regular basis and observe how the ants collect and store it in their nest.

Observing an ant farm is a fascinating and educational experience, offering a unique glimpse into the intricate world of these industrious insects. As you peer into the transparent habitat, you'll see a complex network of tunnels and chambers, meticulously excavated by the ants as they carve out their subterranean domain. Over time, the colony becomes a bustling microcosm, with ants diligently carrying out their assigned roles, from foraging for food to caring for the young. You might notice the queen ant, larger than the others, surrounded by her loyal attendants, as she lays eggs to ensure the colony's continued growth. Worker ants cooperate seamlessly, using their antennae to communicate and navigate the maze of passageways. Throughout the ant farm, tiny granules of soil or sand are methodically transported and deposited, creating an ever-evolving landscape. Watching this mesmerizing miniature world offers a captivating insight into the remarkable cooperation, ingenuity, and perseverance that define the lives of these tiny creatures.





**Map Reading and Treasure Hunt: A Fun Lesson Plan**  
**Pages 22-25 in Foothills Kids Magazine**

Objective:

Students will learn the basics of reading maps, create maps of their school, and engage in a treasure hunt activity to apply their map reading skills in a practical and enjoyable way.

Materials:

- 
- Whiteboard or blackboard
- Markers or chalk
- Large map (classroom or world map) (Or Regional Map in Kids Magazine)
- Blank paper for each group
- Pencils, erasers, and colored pencils or markers
- Rulers
- Small “treasures” (stickers, erasers, or other small items)
- Optional: Compasses

Duration:

2 sessions of 60 minutes each

Lesson Outline:

Session 1: Introduction to Map Reading  
Introduction (10 minutes)

- Welcome the students and explain the purpose of the lesson.
- Share the importance of map reading skills in daily life and how they can be useful for travel, outdoor activities, and understanding the world.

Map Reading Basics (20 minutes)

- Show a large map (classroom or world map) and explain the key components of maps, including the title, legend, scale, compass rose, and grid system.
- Discuss how to interpret different symbols, colors, and lines on maps.
- Briefly introduce the concept of using a compass for navigation (optional).

Group Discussion (10 minutes)

- Divide students into small groups and provide each group with a different map (local, state, or country level).
- Ask students to identify and discuss the key components of their maps and share any interesting features or landmarks they find.





### Map Making Preparation (20 minutes)

- Explain that students will create maps of their school during the next session, including key landmarks, rooms, and outdoor areas.
- Have students work in their groups to plan their maps, discuss the necessary components, and assign roles for each group member.

### Session 2: Map Making and Treasure Hunt

#### Review and Map Making (20 minutes)

- Recap the previous session and remind students of their map-making plans.
- Provide each group with blank paper, pencils, erasers, colored pencils or markers, and rulers.
- Have students work in their groups to create their school maps, including key components such as title, legend, scale, compass rose, and grid system.

#### Treasure Hiding and Marking (10 minutes)

- Give each group a small “treasure” and have them hide it somewhere within the school grounds or building.
- Instruct students to mark the location of their hidden treasure on their map using a specific symbol agreed upon by the class.

#### Treasure Hunt (20 minutes)

- Have groups trade maps with another group.
- Explain that each group must use their new map to locate the hidden treasure.
- Allow time for students to navigate the school and find the treasures using the maps provided.
- Encourage students to collaborate, problem-solve, and communicate during the treasure hunt.

#### Reflection and Conclusion (10 minutes)

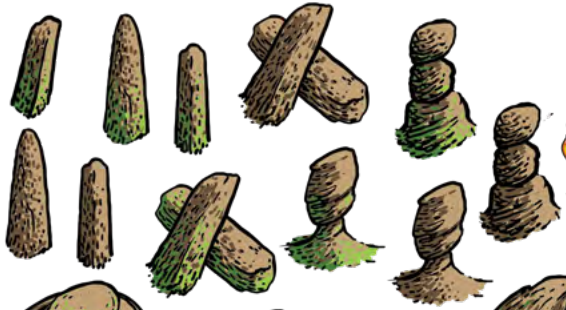
- Gather the class back together and discuss their experiences during the treasure hunt.
- Ask students to share any challenges they faced while reading the maps or locating the treasures.
- Reinforce the importance of map reading skills and encourage students to continue practicing and applying them in their daily lives.
- Congratulate students on their successful treasure hunts and newfound map-reading skills.

NCSCOS:

3.G.1

4.G.1

5.G.1





## Exploring the World of Trail Mix: A Tasty Math Lesson Plan

### Objective:

Students will learn about the history and purpose of trail mix, apply math skills in measuring and creating their own trail mix recipes, and gain an understanding of ratios and proportions.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Various trail mix ingredients (e.g., nuts, dried fruit, chocolate chips, pretzels, cereal)
- Measuring cups and spoons
- Bowls or containers for ingredients
- Small resealable bags or containers for each student
- Paper and pencils

### Duration:

60 minutes

### Lesson Outline:

#### Introduction (5 minutes)

- 
- Welcome the students and introduce the topic by writing the word “trail mix” on the board.
- Explain that they will be learning about trail mix, its history, and how to create their own trail mix recipes using math skills.

#### Trail Mix Background (10 minutes)

- Discuss the history of trail mix and its purpose as a portable, high-energy snack for hikers, travelers, and outdoor enthusiasts.
- Talk about the nutritional benefits of different trail mix ingredients, such as nuts, dried fruit, and whole grains.
- Emphasize the importance of balancing taste and nutrition when creating a trail mix recipe.

#### Math Skills: Ratios and Proportions (15 minutes)

- Introduce the concepts of ratios and proportions, explaining that they are used to compare quantities and express relationships between numbers.
- Write examples on the board, demonstrating how to create and simplify ratios, as well as how to set up and solve proportion problems.
- Encourage students to take notes and ask questions.



### Creating Trail Mix Recipes (20 minutes)

- Divide the students into small groups and provide each group with a variety of trail mix ingredients, measuring cups and spoons, bowls or containers, and paper and pencils.
- Instruct students to create their own trail mix recipes by choosing ingredients and determining the ratios and proportions for each ingredient.
- Have students write down their recipes, including the measurements and ratios for each ingredient.
- Encourage students to consider the nutritional benefits of their chosen ingredients and to create a well-balanced mix.

### Mixing and Tasting (5 minutes)

- Allow students to measure and mix their trail mix recipes using the provided ingredients, bowls, and measuring tools.
- Once the mixes are complete, have students transfer their trail mix into individual resealable bags or containers.

### Reflection and Conclusion (5 minutes)

- Gather the students and discuss their experiences during the lesson, including any challenges they faced when creating their recipes and using ratios and proportions.
- Ask students to share their trail mix recipes with the class and discuss any unique or interesting ingredient combinations.
- Reinforce the importance of math skills in everyday life and encourage students to continue exploring the world of ratios and proportions through creative activities like trail mix making.

NCSCOS:

5.G.1, NC.3.MD.2, NC.4.MD.1, NC.5MD.1, NC.5.MD.5





## Exploring Cherokee Crafts: A Cultural Lesson Plan

### Foothills Kids Magazine Page 33

#### Objective:

Students will learn about the history and significance of Cherokee crafts, engage in hands-on activities to create their own crafts, and gain a deeper appreciation for Cherokee culture and traditions.

#### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Info Sheet About Cherokee Culture (Included)
- Craft materials (clay, beads, yarn, fabric, wooden sticks, feathers, etc.)
- Scissors, glue, paint, and brushes
- Paper for sketching designs

#### Lesson Outline:

#### Session 1: Introduction to Cherokee Crafts

##### Introduction (5 minutes)

- Welcome the students and introduce the topic of Cherokee crafts.
- Explain that they will be learning about the history and significance of various crafts within the Cherokee culture and creating their own crafts inspired by Cherokee traditions.

##### Cherokee Crafts Background (15 minutes)

- Share information about the Cherokee people, their history, and their culture.
- Discuss the significance of various Cherokee crafts, such as pottery, basket weaving, beadwork, and wood carving.
- Show images or videos of Cherokee crafts and artisans at work, if available.

##### Exploring Different Crafts (20 minutes)

- Divide the students into small groups and assign each group a specific Cherokee craft to research (e.g., pottery, basket weaving, beadwork, or wood carving).
- Provide reference materials for each group to explore and learn about their assigned craft.
- Instruct students to take notes and sketch designs inspired by their research.

##### Group Presentations (15 minutes)

- Have each group present their findings on their assigned craft, including its history, significance, techniques, and materials.
- Encourage the students to share their sketches and discuss the inspiration behind their designs.





## Session 2: Cherokee Pottery Making

### Objective:

Students will learn about traditional Cherokee pottery making techniques and create their own small piece of pottery using quick-setting clay.

### Materials:

- Quick-setting clay
- Water
- Small bowls for water
- Newspaper or plastic tablecloth to protect work surfaces
- Tools for shaping and carving clay (popsicle sticks, toothpicks, plastic knives)
- Videos: <https://www.youtube.com/watch?v=frdVcGOCW3A>  
[https://www.youtube.com/watch?v=eEBiZ\\_F8mGc](https://www.youtube.com/watch?v=eEBiZ_F8mGc)  
<https://www.youtube.com/watch?v=-dGGIze80AA>  
<https://www.youtube.com/watch?v=YYsziLCrHnY>

### Introduction (5 minutes):

- Briefly introduce traditional Cherokee pottery making, including the materials used and the significance of pottery in Cherokee culture.
- Explain that students will be using quick-setting clay to create a small piece of pottery inspired by Cherokee techniques.

### Instructions (30 minutes):

- Distribute quick-setting clay, water, and tools to each student. Instruct students to take a small amount of clay and begin kneading it in their hands, adding a few drops of water as needed to make the clay pliable.
- Encourage students to form the clay into a simple shape, such as a small bowl, cup, or plate. Remind them to keep their pottery designs simple and manageable, as they only have a limited amount of time to work with the clay.
- Once students have shaped their pottery, they can use the tools provided to carve or etch simple designs and patterns inspired by traditional Cherokee pottery. They can also add handles, spouts, or other decorative elements to their creations.
- As students work, walk around the classroom to provide guidance and support. Encourage them to focus on the process of working with clay and connecting with the cultural significance of pottery making.

### Closure (10 minutes):

- Have students carefully place their finished pottery pieces on a designated table or area to dry.
- Invite students to share their pottery with the class, discussing the challenges they encountered, the designs they created, and how they felt while working on the project.
- Reinforce the cultural significance of Cherokee pottery making and how the technique has been passed down through generations.
- Encourage students to continue practicing their pottery-making skills at home and explore other traditional Cherokee crafts.

NCSCOS

3.B.1, 3.CX.1, 4.V.3, 4.CX.1, 5.V.3, 5.CX.1

## CHEROKEE CULTURE

The Cherokee people are a Native American tribe that originally lived in the southeastern part of the United States, in areas that are now parts of North Carolina, Georgia, Tennessee, and Alabama. They are one of the largest tribes in the United States today and have a rich history and culture that dates back thousands of years.

The Cherokee people have always had a strong connection to nature and the land around them. They believed in living in harmony with the natural world and respected the plants, animals, and resources that they relied on for their survival. The Cherokee people had their own language, which they developed into a written form called the Cherokee syllabary in the early 1800s. This made it easier for them to communicate and record their history and culture.

Cherokee crafts are an important part of their culture and showcase their creativity, skill, and respect for nature. Some of the most famous Cherokee crafts include pottery, basket weaving, beadwork, and wood carving. These crafts were not only beautiful but also served practical purposes in their everyday lives.

**Pottery:** Cherokee people made pottery using clay from the earth, which they shaped into bowls, jars, and other vessels. They decorated their pottery with designs that represented their beliefs and the natural world around them. Pottery was used for cooking, storing food, and as a canvas for their art.

**Basket Weaving:** The Cherokee people were skilled at weaving baskets from materials like river cane, white oak, and hickory bark. These baskets were used for carrying and storing food, as well as for ceremonial purposes. The intricate patterns and designs on the baskets often had special meanings and stories behind them.

**Beadwork:** Cherokee people used beads made from shells, glass, and stones to create beautiful jewelry, clothing, and decorations. Beadwork was often used to show status and wealth, and it was also a way for Cherokee people to express their artistic talents. They created intricate patterns and designs that represented their beliefs, the natural world, and important events.

**Wood Carving:** The Cherokee people were skilled wood carvers who used



wood from trees like walnut, cherry, and sycamore to create statues, masks, and other decorative items. They carved figures of animals, people, and spirits that were important in their culture and beliefs. Wood carving was also used to create practical items like bowls, spoons, and toys for children.

The Trail of Tears is a tragic part of Cherokee history that occurred in the 1830s. During this time, the United States government forced thousands of Cherokee people to leave their ancestral lands in the southeastern part of the country and relocate to what is now Oklahoma. This forced relocation was due to the government's desire to acquire Cherokee lands for white settlers and to exploit the area's natural resources.

The journey along the Trail of Tears was incredibly difficult and dangerous for the Cherokee people. They had to travel over 1,000 miles through harsh weather conditions and rough terrain, often with little food or supplies. It is estimated that around 4,000 Cherokee people died during the journey, either from illness, exposure, or other hardships they faced along the way. The Trail of Tears is a somber reminder of the injustices and struggles that the Cherokee people have faced throughout their history, but it is also a testament to their resilience and determination to persevere in the face of adversity.

The Cherokee people have a rich and diverse culture that is reflected in their beautiful and practical crafts. By learning about their history and traditions, we can appreciate and respect the Cherokee people and their contributions to American culture.



## CRAFT A SMALL CHEROKEE-INSPIRED CLAY BOWL

### Materials:

- Air-dry clay
- Water
- A small bowl or container (to use as a mold)
- Natural objects like leaves, sticks, or shells for adding texture, picked up on a hike
- A plastic knife or clay tools

### Instructions:

- Take a small piece of air-dry clay and knead it with your hands to make it soft and pliable. If it feels too dry, you can add a little water to make it easier to work with.
- Choose your preferred method for shaping the clay: slumping it over an upside-down bowl or coil building.







- Build

- Method A: Slumping Over a Bowl

- a. Roll out the clay into a circular shape about  $\frac{1}{4}$ -inch thick.
    - b. Turn the bowl upside down and place the clay circle on top of it, gently pressing it down so it takes the shape of the bowl. Smooth out any bumps or creases with your fingers.

- Method B: Coil Building

- a. Roll the clay into long, thin ropes, called coils. The coils should be about as thick as a pencil.
    - b. Starting at the bottom of the bowl, place the first coil on the outside of the upside-down bowl, wrapping it around to create the base of your clay bowl. Press the coils gently to make them stick to the bowl.
    - c. Continue coiling the clay ropes and stacking them on top of one another, building the walls of the bowl. Remember to press the coils together gently to ensure they stick together.
- Once you have formed the bowl shape using either method, smooth out the surface with your fingers, being careful not to press too hard.
- Now, it's time to add some texture! Use natural objects like leaves, sticks, or shells to press into the clay, creating interesting patterns and designs. You can also use a plastic knife or clay tools to carve your own unique designs.
- Allow your clay bowl to dry according to the instructions on the air-dry clay package. This may take 24-48 hours or longer, depending on the thickness of your bowl.
- Once your bowl is completely dry, you can paint it or leave it natural. Enjoy your beautiful, Cherokee-inspired clay bowl!



**Creating Community Murals: A Lesson Plan**  
**Foothills Kids Magazine Pages 34-39**

Objective:

Students will learn the basic concept of murals, their importance in society, and the process of creating murals as a group activity to foster teamwork, creativity, and social awareness.

Materials:

- Whiteboard or blackboard
- Markers or chalk
- Paper (large rolls for mural creation)
- Pencils, erasers, and rulers
- Acrylic paints or washable paint
- Paintbrushes in various sizes
- Paint palettes
- Cups of water
- Drop cloth or newspaper for protecting the floor
- Pictures or slides of famous murals from around the world
- The Article on pages 34-39

3 sessions of 60 minutes each

Lesson Outline:

Session 1: Introduction to Murals

Introduction (10 minutes)

- 
- Welcome the students and briefly explain the purpose of the lesson.
- Show pictures or slides of famous murals from around the world and discuss their significance.

Group Discussion (15 minutes)

- Ask students if they have ever seen a mural and if so, where.
- Discuss the purpose and impact of murals in communities.
- Explain how murals can convey messages, celebrate culture, and promote social awareness.

Mural Planning and Design (35 minutes)

- Pass out the handout on mural planning and design.
- Divide students into groups of 3-5.
- Assign each group a theme for their mural (e.g., community, environment, diversity, etc.).
- Have students brainstorm and sketch ideas for their mural based on their assigned theme.
- Encourage students to think about how they can convey their theme through images, colors, and patterns.
- Circulate around the room, providing guidance and feedback as needed.



## Session 2: Mural Creation

### Review (5 minutes)

- Recap the previous session and remind students of their themes.

### Mural Preparation (15 minutes)

- Have students gather their materials (paint, brushes, palettes, etc.).
- Roll out the paper and secure it to the floor with tape or weights.
- Place a drop cloth or newspaper under the paper to protect the floor.

### Mural Painting (40 minutes)

- Have students work in their groups to paint their murals, using their sketches as a guide.
- Encourage students to collaborate, share ideas, and support each other throughout the process.
- Circulate around the room, providing guidance and encouragement as needed.

## Session 3: Mural Presentation and Reflection

### Mural Presentation (30 minutes)

- Have each group present their mural to the class.
- Encourage students to explain their theme, their artistic choices, and the message they wanted to convey.

### Reflection and Discussion (20 minutes)

- Ask students to reflect on the mural creation process and share their thoughts.
- Discuss the importance of teamwork, creativity, and communication in creating a successful mural.
- Ask students how they think their murals could impact their community.

### Conclusion (10 minutes)

- Summarize the key takeaways from the lesson.
- Encourage students to continue exploring the world of murals and consider creating one in their community or school. Congratulate students on their hard work and creativity.

NCSCOS:

xxxx



## Writing a Professional Letter: A Lesson Plan Foothills Kids Magazine Pages 34-39

### Objective:

Students will learn the important components of writing a professional letter and apply this knowledge to compose a letter to the city council or school principal, requesting permission to paint a mural.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Lined paper
- Pens or pencils
- Sample letter (Included)
- Optional: computer and projector for displaying digital examples

### Lesson Outline:

#### Introduction (5 minutes)

- 
- Welcome the students and introduce the topic of writing professional letters.
- Explain that they will be learning the important components of a professional letter and applying this knowledge to write a letter requesting permission to paint a mural.

#### Components of a Professional Letter (15 minutes)

- Discuss the key components of a professional letter, including:
- Heading: the sender's address and the date
- Inside address: the recipient's name, title, and address
- Salutation: a formal greeting (e.g., "Dear [Recipient's Name],")
- Body: the main content of the letter, organized into clear paragraphs
- Closing: a polite closing phrase (e.g., "Sincerely," or "Yours truly,")
- Signature: the sender's handwritten or typed name
- Show students sample professional letters (printed or digital) and point out each of the components.
- Optional: Use a computer and projector to display digital examples.

#### Preparing to Write a Letter (10 minutes)

- 
- Explain that students will be writing a letter to the city council or school principal requesting permission to paint a mural.
- Brainstorm ideas as a class for the content of the letter, including:
- The purpose of the mural (e.g., to beautify the community or school, promote environmental awareness, or celebrate diversity)
- The proposed location for the mural
- Who will be involved in creating the mural (e.g., students, teachers, local artists)
- The materials and funding needed for the project
- Encourage students to take notes on these ideas to help them write their letters.



### Writing the Letter (25 minutes)

- Provide each student with lined paper and a pen or pencil.
- Instruct students to write a professional letter to the city council or school principal, using the components and ideas discussed earlier.
- Encourage students to organize their thoughts clearly and use a polite, formal tone in their writing.
- Circulate around the classroom, offering guidance and support as needed.

### Sharing and Reflection (5 minutes)

- Invite a few volunteers to share their letters with the class.
- Discuss the effectiveness of the letters in communicating the students' requests and the professionalism of their writing.
- Encourage students to reflect on the importance of clear, effective communication and the ability to write professional letters in various situations throughout their lives.
- By the end of the lesson, students will have learned the important components of writing a professional letter and applied this knowledge to compose a letter requesting permission to paint a mural. They will have practiced organizing their thoughts and communicating effectively through their writing.

### Optional Activity

We have also included a sample letter that students could write to local leaders to express how much they enjoy Foothills Kids Magazine, and requesting help in funding a larger distribution. It would certainly be helpful for the growth of the magazine if students did write those and send them to local leaders.

NCSCOS:  
English Language Development Standard 5



Carmen Eckard  
1070 26th Ave NE  
Hickory, NC 28601  
Email: editor@foothillsdigest.com  
Phone: 828.475.1323  
April 7, 2023

City Council Member  
76 N Center St  
Hickory, NC 28601

Subject: Request for Permission to Paint a Mural in Downtown Hickory

Dear City Council Member,

I hope this letter finds you in good health and high spirits. My name is Carmen Eckard, and I am a community member in Hickory, North Carolina, and the Editor-in-Chief of Foothills Kids Magazine. I am writing to formally request permission to create a mural on a suitable building in the downtown area of our beloved city. The primary purpose of this mural is to beautify our community and celebrate the rich history of the Catawba Valley from the perspective of the children who live here.


In collaboration with students from local schools who read Foothills Kids Magazine, we would like to create a mural that showcases the essence of Hickory. We believe that involving students in the creation of the mural will not only encourage their artistic development but also foster a sense of pride and ownership in our community. Please see the attached ideas from students which show they have the required creativity and dedication to make this a spectacular project.

Our proposed location for the mural is any blank wall in the downtown area that the city deems appropriate. We kindly ask for your guidance and assistance in identifying a suitable location for the mural, as well as securing any necessary permits and approvals.

Regarding the materials and funding needed for the project, we will provide our own materials and initiate a Kick-starter campaign to raise the necessary funds. This approach ensures that the project will have minimal financial impact on the city while maximizing community involvement.

Before proceeding with the project, we are open to presenting our concept to the City Council or other relevant committees if required. We believe that this mural will not only enhance the visual appeal of our downtown area but also contribute to the ongoing revitalization efforts and the celebration of Hickory's unique heritage.

Thank you for considering this request and for your continued support of the arts in our community. I look forward to the possibility of working together on this project and would be grateful for your response at your earliest convenience. Please feel free to contact me by phone at 828.475.1323 or by email at editor@foothillsdigest.com if you have any questions or require further information.

Sincerely,  
  
Carmen Eckard

[Your Name]  
[Your Address]  
[City, State, ZIP Code]  
[Email Address]  
[Phone Number]  
[Date]

[Recipient's Name]  
[Recipient's Position or Title]  
[Recipient's Address]  
[City, State, ZIP Code]

Subject: Request for Support for Foothills Kids Magazine

Dear [Recipient's Name],

I hope this letter finds you in good health and high spirits. My name is [Your Name], and I am a [Grade] student at [School Name]. I am writing to express my gratitude for the Foothills Kids Magazine, which has enriched my life and learning in meaningful ways.

The Foothills Kids Magazine makes me feel like I am part of something important when I read it, and it helps me feel connected to my community and my own history. The magazine's engaging content and diverse topics have been instrumental in sparking my curiosity and broadening my horizons.

I believe that more students in our state could benefit from the Foothills Kids Magazine if they had access to it. As an important community leader, I kindly request your assistance in securing funding to support the distribution of the magazine. I propose that we aim to allocate \$5 per 3rd, 4th, or 5th grader in your district each year to ensure that every child has the opportunity to experience the magazine's positive impact.

By helping Foothills Kids Magazine reach a larger audience, we can foster a sense of connection and pride in our community's youth, as well as provide them with valuable educational resources that complement their school curriculum.

Thank you for considering my request, and for your ongoing commitment to our community. I believe that together, we can make a lasting difference in the lives of our young people. If you have any questions or would like to discuss my proposal further, please feel free to contact me at [Phone Number] or [Email Address].

Sincerely,

[Your Name]



## The Hermann Grid Illusion: A Visual Perception Lesson Plan

### Objective:

Students will learn about the Hermann grid illusion, explore the principles of visual perception, and understand the role of retinal ganglion cells in the phenomenon.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Printed or digital examples of the Hermann grid illusion (Included)
- Blank paper
- Colored pencils or markers
- Diagram of the Eye

### Lesson Outline:

#### Introduction (5 minutes)

- Welcome the students and introduce the topic of visual illusions.
- Explain that they will be learning about a specific illusion called the Hermann grid illusion and understanding the science behind it.

#### Exploring the Hermann Grid Illusion (10 minutes)

- Show students examples of the Hermann grid illusion (printed or digital) and ask them to describe what they see.
- Encourage them to share their observations of the illusory dots and their experience of the dots disappearing when they try to focus on them directly.
- Explain that this is a common visual illusion that occurs due to the way our eyes and brain process visual information.

#### The Role of Retinal Ganglion Cells (15 minutes)

- Provide a brief introduction to the structure of the eye, focusing on the retina and its role in processing visual information.
- Introduce retinal ganglion cells and explain their function in transmitting visual information from the retina to the brain.
- Discuss the center-surround structure of retinal ganglion cells' receptive fields and how this leads to the perception of illusory dots in the Hermann grid illusion.
- Optional: Show a video or images illustrating the structure and function of retinal ganglion cells to help students visualize the concept.



### Activity: Create Your Own Grid Illusion (20 minutes)

- Provide students with blank paper and colored pencils or markers.
- Instruct students to create their own grid illusion by drawing a pattern of intersecting lines on their paper. Encourage them to experiment with different line thicknesses, colors, and backgrounds.
- Have students observe their classmates' grid illusions and discuss whether they experience the same illusory dots as in the Hermann grid illusion.

### Discussion and Reflection (10 minutes)

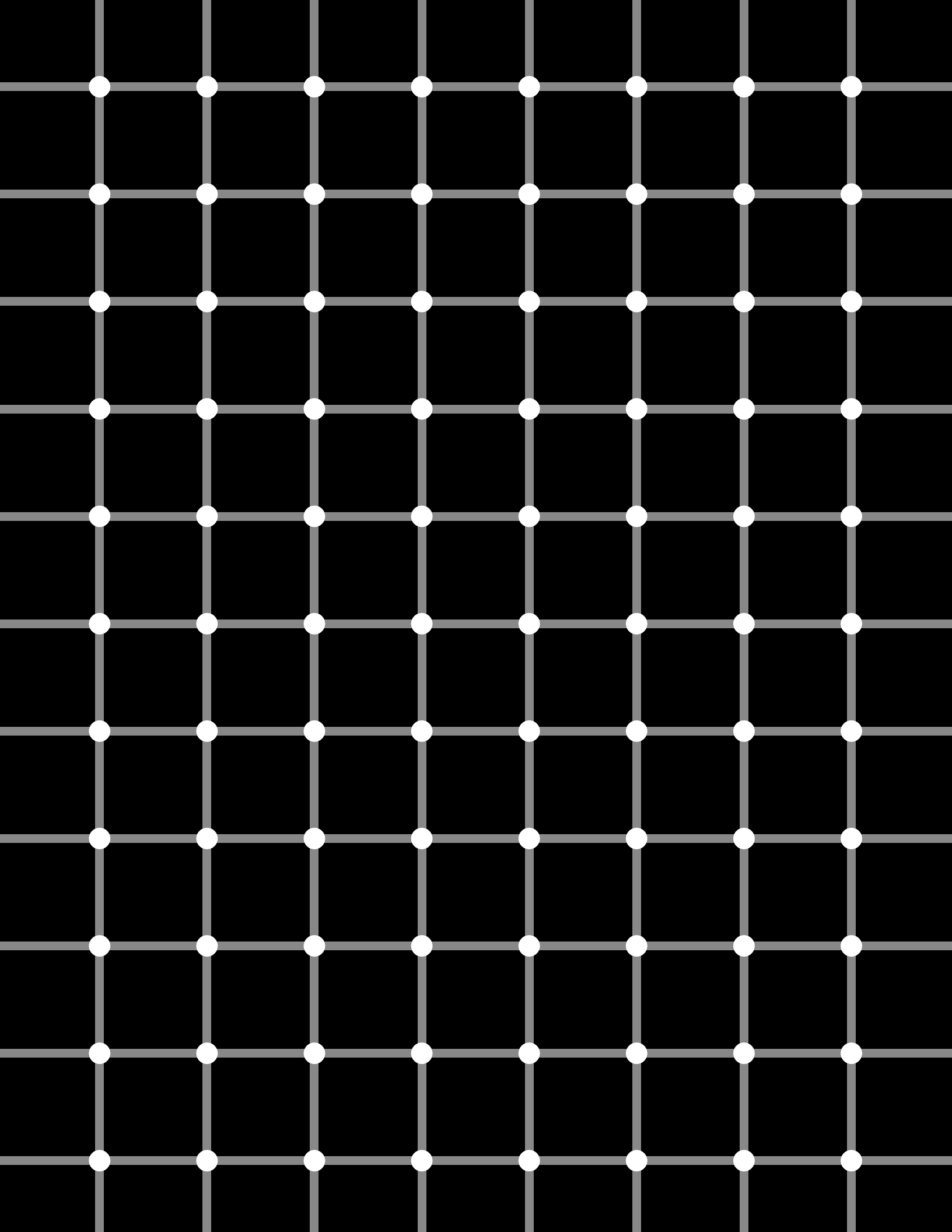
- Ask students to share their observations from the activity and discuss any differences they noticed in the perception of illusory dots based on the variations in their grid designs.
- Talk about other visual illusions and how they relate to the way our visual system processes information.
- Reflect on the importance of understanding how our eyes and brain work together to interpret the world around us.

### Conclusion:

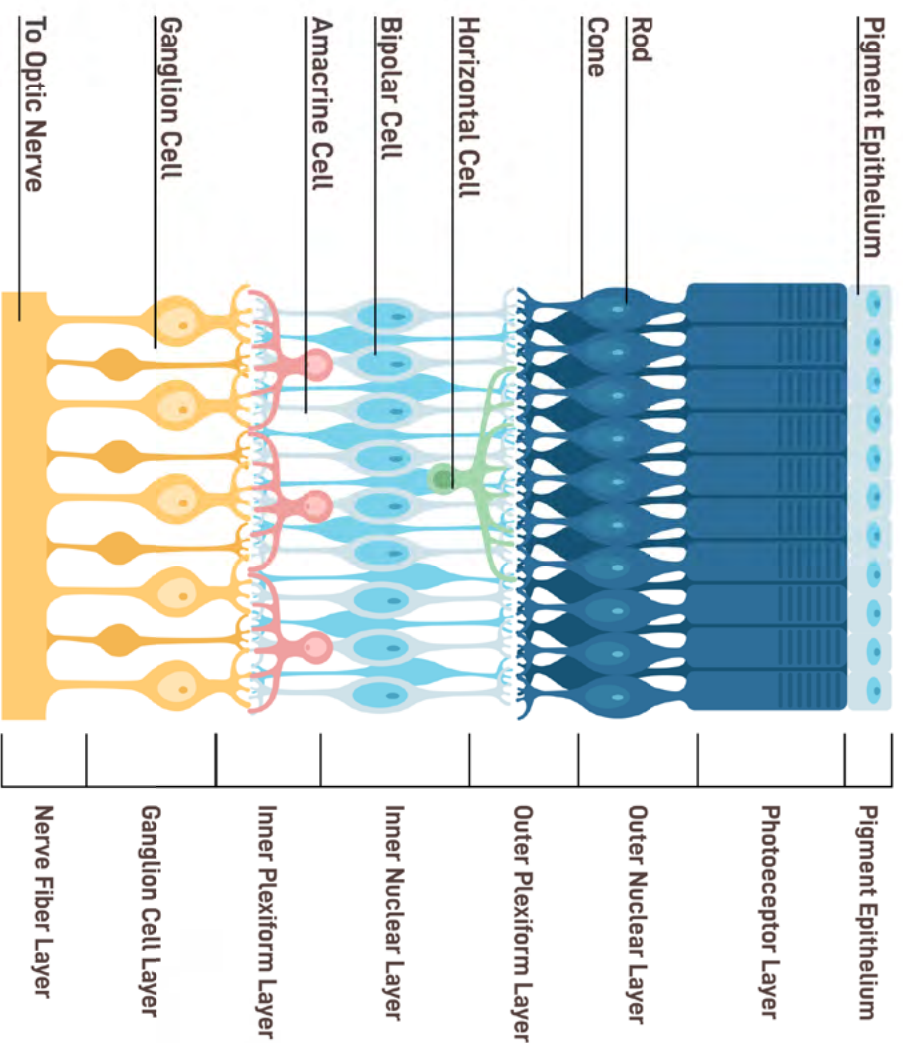
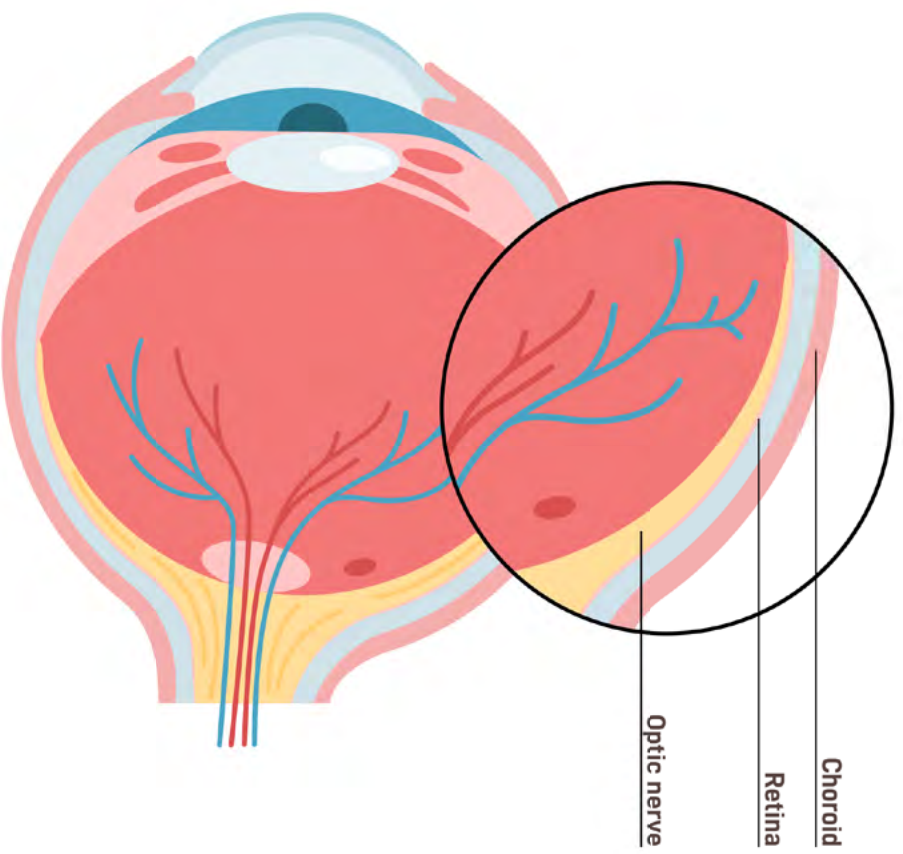
- By the end of the lesson, students will have explored the Hermann grid illusion and gained an understanding of the role of retinal ganglion cells in the phenomenon. They will have engaged in a hands-on activity to create their own grid illusions and discussed the principles of visual perception. This lesson will provide students with a deeper appreciation of the complexity and wonder of human vision.

### NCSCOS:

EX.3.L.1, 5.L.1



# Retina Structure





# The Amazing Eye: Understanding Retinal Ganglion Cells

Did you know that your eyes are one of the most complex and fascinating parts of your body? They work like a camera, capturing images of the world around you and sending them to your brain. One essential part of your eye is the retinal ganglion cells. Let's learn more about the structure of the eye and the function of these special cells.

The eye is made up of many different parts, each with its own unique job. The main parts of the eye are the cornea, the iris, the lens, and the retina. The cornea is the clear outer layer of the eye that helps focus light. The iris is the colorful ring that controls how much light enters the eye through the pupil. The lens is a flexible structure that changes shape to focus light onto the retina, which is the light-sensitive layer at the back of the eye.

Now, let's talk about the retina. The retina is made up of millions of tiny cells called photoreceptors, which convert light into electrical signals. There are two types of photoreceptors: rods and cones. Rods help us see in low light, while cones help us see color and details in brighter light.

Retinal ganglion cells are another important part of the retina. These cells receive signals from the photoreceptors and process them into a language the brain can understand. They act like messengers, sending information from the eye to the brain through the optic nerve, which is a bundle of nerve fibers at the back of the eye.

So, how do retinal ganglion cells work? When light enters your eye, it passes through the cornea, the lens, and the other structures before reaching the retina. Once it reaches the photoreceptors, they convert the light into electrical signals. These signals travel to the retinal ganglion cells, which then process the information and send it along the optic nerve to your brain. Your brain uses this information to create the images you see.

In conclusion, retinal ganglion cells play a vital role in helping us see the world around us. They work together with other parts of the eye to process light and send important information to our brains. Next time you look around, take a moment to appreciate the amazing work your eyes do every day!



## Exploring Ciphers: Caesar, Reverse, and Atbash

Duration: 60 minutes

### Objective:

- Students will learn about different types of ciphers, with a focus on Caesar, Reverse, and Atbash Ciphers.
- Students will practice encoding and decoding messages using these ciphers.
- Students will engage in a fun activity to reinforce their understanding of ciphers.

### Materials:

- Whiteboard or blackboard
- Markers or chalk
- Handout with cipher examples (Included)
- Paper and pencils for each student
- Pre-made encoded messages for the activity (Included)

### Introduction (10 minutes):

- Begin the lesson by explaining to students what ciphers are: secret ways of writing messages so that only someone who knows the cipher can read them.
- Share examples of when ciphers have been used in history, such as during wars for secret communication.
- Introduce the concept of encoding (writing a secret message) and decoding (figuring out the secret message).

### Teaching (20 minutes):

- Explain the Caesar Cipher: a simple substitution cipher that shifts the letters of the alphabet by a certain number of positions. For example, with a shift of 3, A would become D, B would become E, and so on.
- Introduce the Reverse Cipher: a simple cipher that reverses the order of the letters in the original message.
- Introduce the Atbash Cipher: a substitution cipher that replaces each letter with its reverse in the alphabet (A becomes Z, B becomes Y, and so on).
- Demonstrate how to encode and decode messages using each cipher. Write simple messages on the board (e.g., "HELLO") and show students how to encode them using Caesar, Reverse, and Atbash Ciphers. Then, demonstrate decoding the messages by reversing the process.
- Distribute handouts with examples of the ciphers for students to reference during the activity.

### Activity (25 minutes):

- Divide students into groups of three or four.
- Provide each group with a set of pre-made encoded messages using the Caesar, Reverse, and Atbash Ciphers.
- Instruct each group to work together to decode the messages. Encourage students to use the handouts and collaborate with their teammates.



- As students work on decoding the messages, circulate around the room to offer assistance and answer questions.
- Once all groups have finished decoding the messages, have each group share their findings with the class.

Conclusion (5 minutes):

- Review the three ciphers covered in the lesson and ask students to explain the differences between them.
- Discuss how the use of ciphers can be applied in real-life situations, such as creating secure passwords or sending private messages.
- Encourage students to create their own secret messages using the ciphers they learned and share them with friends or family members.

Pre-made encoded messages:

Caesar Cipher (shift of 3):

KHOOR ZRUOG  
WKLVE LV D VHFUHW PHVVDJH  
FDHVDU FLSKHU LV IXQ

HELLO WORLD  
THIS IS A SECRET MESSAGE  
CAESAR CIPHER IS FUN

Reverse Cipher:

DLROW OLLEH  
EGASSEM TERCES A SI SIHT  
NRUF SI REHPIC ESREVER

HELLO WORLD  
THIS IS A SECRET MESSAGE  
REVERSE CIPHER IS FUN

Atbash Cipher:

SVOOL DLIOW  
GSZG XRKSVI GIZMWRMT  
ZFGS OLLP LU GSV XRKSVI

HAPPY TRAILS  
THAT EXPLAINS EVERYTHING  
ARTS CRAFTS OF THE BRAVE

NCSCOS:

ENGLISH LANGUAGE DEVELOPMENT STANDARDS 1-3

## CAESAR CIPHER:

The Caesar Cipher is a simple substitution cipher that shifts the letters of the alphabet by a certain number of positions. For example, with a shift of 3, A would become D, B would become E, and so on.

Example:

Original Message: HELLO

Shift of 3: KHOOR

To decode the message, reverse the process by shifting the letters back by the same number of positions (in this case, 3).

## REVERSE CIPHER:

The Reverse Cipher is a simple cipher that reverses the order of the letters in the original message.

Example:

Original Message: HELLO

Reversed Message: OLLEH

To decode the message, reverse the order of the letters again.

## ATBASH CIPHER:

The Atbash Cipher is a substitution cipher that replaces each letter with its reverse in the alphabet. A becomes Z, B becomes Y, and so on.

Example:

Original Message: HELLO

Atbash Message: SVOOL

To decode the message, replace each letter with its reverse in the alphabet again.

Now that you have this handout, you can reference the examples when encoding and decoding messages using the Caesar, Reverse, and Atbash Ciphers during the lesson's activity. Practice using these ciphers and work together with your group members to decode the pre-made messages provided by your teacher. Have fun exploring the world of ciphers!



## Nature Walk Poetry - Inspiring Young Poets-A Lesson Plan

### Objective:

- Introduce students to the basics of poetry writing.
- Encourage students to observe and appreciate the beauty of nature.
- Guide students in expressing their experiences through poetry.

### Materials:

- Notebook or paper for each student
- Writing utensils (pencils, pens, or colored pencils)
- Clipboard (optional, for easier writing)
- Poems about hiking in the woods (Included)
- Handout on poetry basics and common techniques (rhyme, rhythm, metaphor, simile, etc., Included)

### Introduction (10 minutes):

- Share the first poem about hiking in the woods with the class. Ask students what they think about the poem and what images or emotions it evokes.
- Introduce the concept of poetry and briefly discuss some common techniques used in writing poems, such as rhyme, rhythm, metaphor, and simile. Provide each student with a handout on poetry basics.

### Activity 1: Nature Walk (20 minutes):

- Take students on a walk around the school grounds, a nearby park, or another natural setting. Encourage them to use all their senses and to observe their surroundings carefully.
- As they walk, ask students to jot down words, phrases, or ideas that come to mind, focusing on sensory details and emotions.

### Activity 2: Writing Poetry (20 minutes):

- After the nature walk, return to the classroom and have students review the notes they took during the walk.
- Guide them in creating a poem based on their observations, using the handout on poetry basics as a reference. Encourage them to be creative and to use poetic techniques to express their experiences.
- Allow students time to write and revise their poems. They can choose to write in a structured form (such as a haiku or sonnet) or use free verse.

### Activity 3: Poetry Sharing (10 minutes):

- Once the students have completed their poems, invite them to share their work with the class. This can be done in small groups, pairs, or as a whole-class activity.
- Encourage students to listen actively and respectfully to their peers' poems and to offer constructive feedback.

### Conclusion (5 minutes):

- Review the poetry techniques discussed in the lesson and ask students what they enjoyed most about writing poetry based on their nature walk.
- Encourage students to continue exploring their creativity and writing poetry outside of the classroom, using their experiences and emotions as inspiration.

## Poetry Writing for Young Poets

Do you love reading poems and want to learn how to write your own? You're in the right place! Writing poetry can be fun and exciting, and it's a great way to express your thoughts, feelings, and experiences. In this article, we'll explore some basic poetry techniques to help you become a fantastic young poet.

### Rhyme

Rhyme is when words have the same ending sound, like "cat" and "hat" or "moon" and "spoon." Rhyming can make your poems sound musical and catchy. There are different types of rhyme, such as end rhyme (when the last word of each line rhymes) or internal rhyme (when words within the same line rhyme).

### Rhythm

Rhythm is the beat or pattern of your poem. It's created by the arrangement of syllables and the way you stress certain words. You can make your poem have a steady rhythm, or you can vary it to create different effects. Try clapping or tapping your foot as you read your poem aloud to feel the rhythm.

### Metaphor

A metaphor is when you compare two different things by saying one thing IS the other. For example, "The world is a stage" compares the world to a stage. Metaphors can help you express your ideas in a creative and imaginative way.

### Simile

A simile is like a metaphor, but it uses the words "like" or "as" to make the comparison. For example, "Her smile was as bright as the sun" compares a smile to the brightness of the sun. Similes can add vivid imagery to your poems.

### Alliteration

Alliteration is when several words in a line or stanza start with the same sound. For example, "Peter Piper picked a peck of pickled peppers" has lots of words starting with the letter "P." Alliteration can make your poems sound playful and interesting.

### Personification

Personification is when you give human qualities or actions to non-human things. For example, "The wind whispered through the trees" gives the wind the human action of whispering. Personification can help bring your poems to life and make them more relatable.

Now that you know some basic poetry techniques, it's time to start writing! Here are a few tips to help you get started:

- Read lots of different poems to find inspiration and learn different styles.
- Write about your feelings, experiences, or things you find interesting.
- Don't worry about making your poem perfect the first time. You can always revise and edit later.
- Have fun and let your creativity flow!
- Remember, there's no one "right" way to write poetry. The most important thing is to enjoy the process and express yourself. So grab a pen and paper, and start writing your own amazing poems!



## Verdant Woods

By Carmen Eckard

Through verdant Woods I Wander now,  
In Appalachian Clime –  
Where Mountains brush the Azure Sky,  
And Streams – their Voices chime.

The Ferns do bow in gentle Breeze,  
While Maples quiver high –  
The Rhododendron whispers still,  
A secret to the Sky.

The silent Trillium, Scarlet-Red,  
Unfurl their fleeting Bloom –  
And 'neath the canopy of Trees,  
I watch the Shadows loom.

Each Step upon the wooded Path,  
My Thoughts – a newfound Grace –  
In Nature's quiet Sanctuary,  
I find my Soul's Embrace.

The whispered Hush of Forest deep,  
To Me, a hallowed Hymn –  
A sacred Language, only heard  
By those who venture in.

For here within these ancient Woods,  
Where Nature paints Her art,  
The Appalachian Trail unfolds,  
And stirs the Wandering Heart.

## HAIKU

A haiku is a traditional Japanese poem that consists of three lines. The first line has 5 syllables, the second line has 7 syllables, and the third line has 5 syllables. Haikus often focus on nature and the changing seasons.

Example:

**Silent woods whisper,  
Rays of light through the green leaves,  
Nature breathes with ease.**

## ACROSTIC

An acrostic poem is a type of poem where the first letter of each line spells out a word or message, usually related to the topic of the poem.

Example:

**Wandering the trails  
In the western woods I find  
Luscious landscapes bloom  
Delighting senses and heart**

## SONNET

A sonnet is a 14-line poem with a specific rhyme scheme and meter (usually iambic pentameter). There are two main types of sonnets: the Shakespearean (or English) sonnet and the Petrarchan (or Italian) sonnet.

Example :

**In forests deep where western light doth play,  
I walk the path and listen to the breeze,  
A symphony of life in sweet display,  
And all around, the trees with grace do tease.**

**The sunlight dances on the forest floor,  
Creating shadows, patterns to behold,  
The rustling leaves, the birds in chorus soar,  
And in this place, a thousand tales are told.**

**But soon the sun shall set, and night will rise,  
And cast its cloak of darkness on the land,  
Yet even then, the woods will sing their sighs,  
A lullaby to still the heart so grand.**

## LIMERICK

A limerick is a humorous, often silly, five-line poem with a specific rhyme scheme (AABBA). The first, second, and fifth lines have 7-10 syllables, while the third and fourth lines have 5-7 syllables.

Example:

**There once was a hiker from Boone,  
Who ventured out late in June,  
With a skip and a hop,  
He reached the mountaintop,  
And danced by the light of the moon.**

## CINQUAIN

A cinquain is a five-line poem with a specific syllable count for each line: 2 syllables in the first line, 4 syllables in the second line, 6 syllables in the third line, 8 syllables in the fourth line, and 2 syllables in the fifth line.

Example:

**Woods call,  
Whispers of nature,  
Secrets hidden in green,  
A world where peace and beauty reign,  
Silent.**



## Creating Hiking Rhythms and Melodies: A Lesson Plan

### Objective:

Students will learn about rhythms and melodies by creating their own hiking-inspired songs.

### Materials:

- Musical instruments (optional)
- Paper and pencils
- Audio recorder or smartphone (optional)

### Introduction (10 minutes):

- Begin the lesson by discussing the different sounds they might hear while hiking in nature, such as birds singing, leaves rustling, and water flowing.
- Explain the concept of rhythm and melody in music. Play examples of songs that have a clear rhythm and melody for students to listen to and identify the elements.

### Activity (30 minutes):

- Divide the class into small groups of 3-4 students.
- Ask each group to create a hiking-inspired rhythm using their hands, feet, or objects around them. Encourage them to incorporate the sounds they might hear in nature.
- Once they have established their rhythm, instruct the students to create a simple melody that complements their rhythm.
- Provide musical instruments (optional) for students to use in creating their melodies, or encourage them to use their voices to hum or sing.
- Allow the groups to practice their hiking-inspired songs.

### Sharing and Reflection (15 minutes):

- Have each group perform their hiking-inspired song in front of the class.
- After each performance, ask the audience to share what they liked about the song and how it reminded them of hiking in nature.
- Allow time for the performers to discuss their creative process and what inspired their rhythm and melody.
- Conclude the lesson by discussing the importance of music and sounds in capturing the feeling of an experience, such as hiking, and how music can help us connect with nature.

### Optional Extension:

Record the students' performances, and have them create album covers or posters to promote their hiking-inspired songs. They can also write lyrics to go along with their melodies, creating a full hiking-themed song.

### NCSCOS:

3.ML.1 A, 4.ML.1, 5.ML.1



## Perspectives of Clingman and Mitchell: Journal Entries and Conversations

### Objective:

Students will gain an understanding of the historical debate between Clingman and Mitchell by writing a journal entry from the perspective of one of the men or engaging in a conversation between the two men.

### Materials:

- Article about Clingman and Mitchell (Included)
- Paper and pencils
- Optional: props or costumes to represent Clingman and Mitchell

### Introduction (10 minutes):

- Read the article about the Clingman and Mitchell debate to the class.
- Discuss the main points of the article, highlighting the men's backgrounds, their claims, and the outcomes of their debate.

### Activity (30 minutes):

- Divide the students into two groups: those who want to write a journal entry and those who want to engage in a conversation.
- Instruct the journal entry group to choose either Clingman or Mitchell and write a journal entry from their chosen person's perspective. Encourage them to imagine their thoughts and feelings during the debate and include details about their peak, measurements, and arguments.
- For the conversation group, have students pair up, with one student taking the role of Clingman and the other taking the role of Mitchell. They should improvise a conversation between the two men based on the information in the article. Encourage them to use respectful language and stay true to the historical context.
- Allow students time to prepare their journal entries or conversations. If desired, provide props or costumes for the conversation group to help them get into character.

### Sharing and Reflection (15 minutes):

- Have several volunteers from the journal entry group share their writing with the class. Encourage the audience to provide feedback on how well the writer captured the perspective of Clingman or Mitchell.
- Invite some pairs from the conversation group to perform their improvised conversations in front of the class. After each performance, ask the audience to share their thoughts on the accuracy and effectiveness of the dialogue.
- Conclude the lesson by discussing the importance of understanding historical events from multiple perspectives and how this activity helped students gain insight into the Clingman and Mitchell debate.

### NCSCOS:

## ENGLISH LANGUAGE DEVELOPMENT STANDARDS 5

## CLINGMAN AND MITCHELL: THE GREAT DEBATE OVER THE HIGHEST PEAK IN WESTERN NORTH CAROLINA

A long time ago, two passionate scientists, Thomas Lanier Clingman and Elisha Mitchell, engaged in a heated debate over the highest peak in Western North Carolina. This dispute, which took place in the mid-19th century, revolved around two magnificent peaks now known as Mount Mitchell and Clingmans Dome.

Thomas Lanier Clingman was an accomplished politician and explorer who served as both a Congressman and a Senator. He was a dedicated explorer of the Southern Appalachian Mountains and had a keen interest in the region's geography. Elisha Mitchell, on the other hand, was a respected professor of geology, chemistry, and mineralogy at the University of North Carolina. Both Clingman and Mitchell shared a love for the mountains, and each wanted to claim the title of discovering the tallest peak.

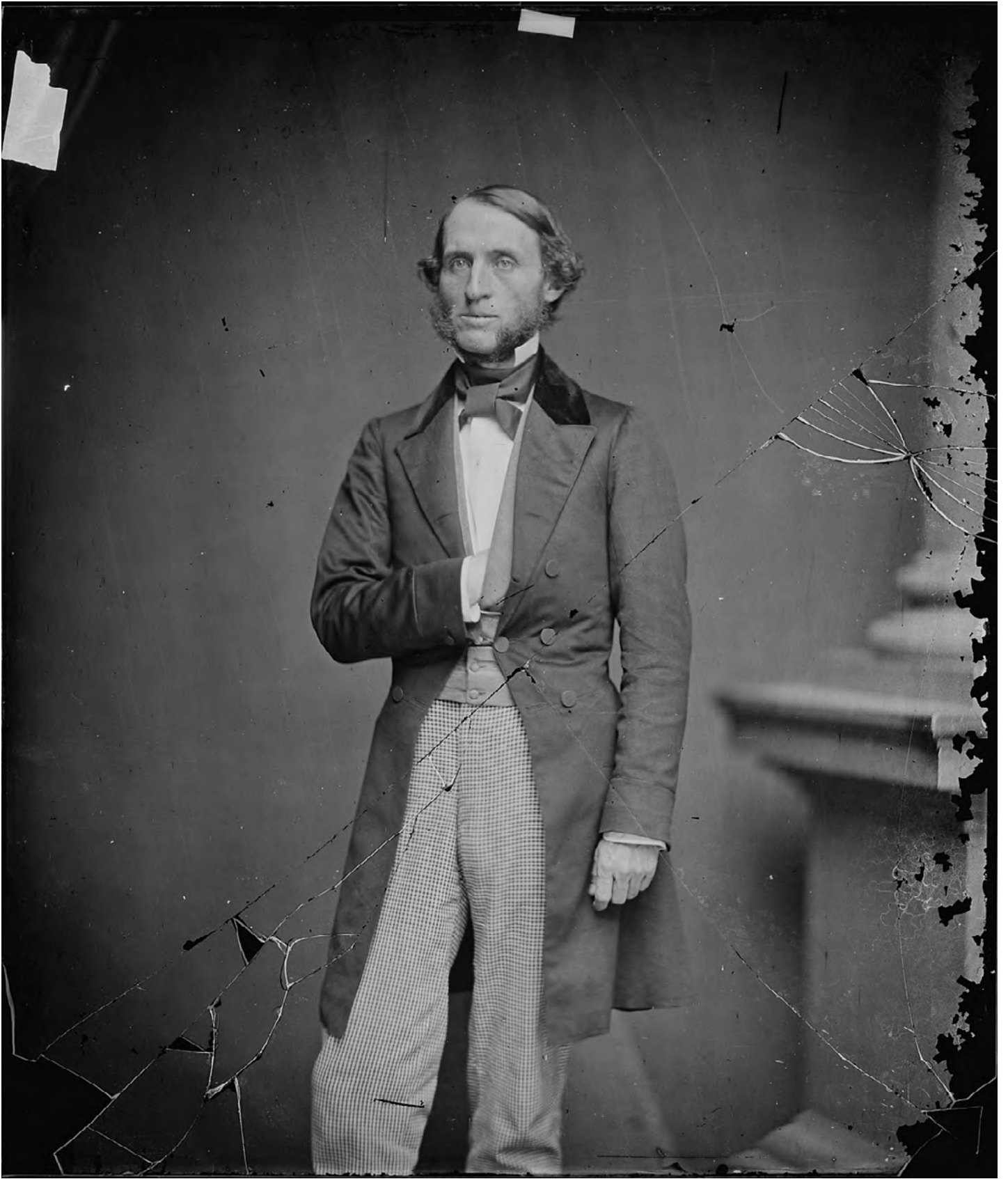
The debate began when Professor Mitchell claimed that a peak in the Black Mountains, which he called "Black Dome," was the highest peak east of the Mississippi River. He had conducted barometric pressure measurements and calculated the peak's height to be 6,672 feet (2,034 meters). Mitchell's claim was met with skepticism from Clingman, who believed that a peak in the Smoky Mountains, now known as Clingmans Dome, was taller. Clingman had conducted his own measurements and determined the height of his peak to be 6,660 feet (2,030 meters).

The rivalry between the two men intensified, as each tried to prove their peak was the highest. Clingman and Mitchell engaged in a series of public debates, published articles, and conducted additional surveys. Despite the ongoing disagreement, both men contributed to a better understanding of the region's geography and inspired others to explore and appreciate the natural beauty of the Southern Appalachian Mountains.

Tragically, in 1857, Professor Elisha Mitchell lost his life while attempting to verify the height of his peak. He slipped and fell into a waterfall, now known as Mitchell Falls. In his honor, the North Carolina General Assembly named the peak "Mount Mitchell," and it remains the highest peak east of the Mississippi River with an elevation of 6,684 feet (2,037 meters).

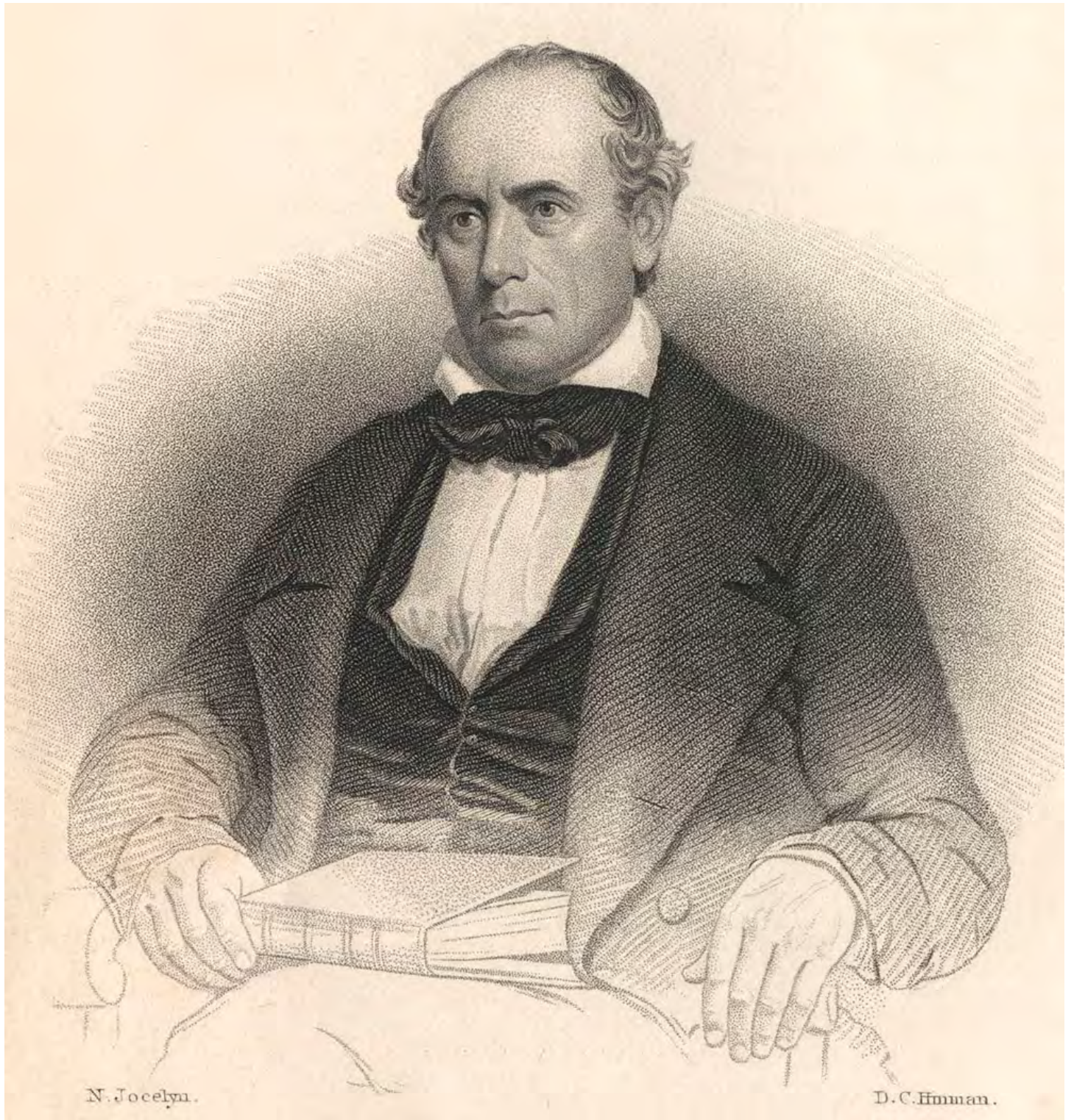
Clingmans Dome, with an elevation of 6,643 feet (2,025 meters), is the highest point in the Great Smoky Mountains National Park and the third highest peak east of the Mississippi River. Although Clingman's peak wasn't the tallest, it still bears his name as a testament to his dedication and passion for the Appalachian Mountains.

Today, visitors to Western North Carolina can hike to the summits of both Mount Mitchell and Clingmans Dome, marveling at the breathtaking views and reflecting on the historic debate between Clingman and Mitchell that brought attention to the majesty of these ancient mountains.



**THOMAS LANIER CLINGMAN**





**ELISHA MITCHELL**

Visiting and hiking at places named after Clingman and Mitchell is a great way to explore the beauty of Western North Carolina while also appreciating the historical significance of the area. Here is a simple explanation of how to visit and hike at Clingman's Dome and Mount Mitchell.

### CLINGMAN'S DOME:

Clingman's Dome is located in the Great Smoky Mountains National Park, which straddles the border between North Carolina and Tennessee. To reach Clingman's Dome, you'll want to enter the park through Cherokee, North Carolina, or Gatlinburg, Tennessee.

Follow the signs to Clingman's Dome Road, a scenic 7-mile drive that takes you to the parking area near the summit.

From the parking lot, take the paved, half-mile Clingman's Dome Trail to the observation tower at the summit. The trail is steep, but it's short and accessible to most visitors.

Enjoy the stunning 360-degree views from the observation tower, and be sure to take some photos to remember your visit.

### MOUNT MITCHELL:

Mount Mitchell is located in Mount Mitchell State Park, about 35 miles northeast of Asheville, North Carolina. To get there, take the Blue Ridge Parkway to Milepost 355, and then follow the signs to the park entrance.

After entering the park, drive to the summit parking area. From there, you can take the short, paved Summit Trail to the highest point in the eastern United States.

At the summit, you'll find an observation deck with panoramic views of the surrounding mountains. There's also a museum and a memorial to Dr. Elisha Mitchell, who died while trying to prove the mountain's height.

For a longer hike, consider exploring some of the park's other trails, like the Old Mitchell Trail or the Balsam Nature Trail.

Remember to check the weather conditions before you go, as both Clingman's Dome and Mount Mitchell can experience rapidly changing weather. Dress in layers, bring plenty of water and snacks, and wear comfortable hiking shoes. Happy hiking!



## Exploring Altitude on Campus: A Lesson Plan

### Objective:

Students will learn about altitude and how it is measured, develop hypotheses about the highest and lowest points on their campus, and use a smartphone app to test their predictions as a group.

### Materials:

- Article on altitude and its measurement (Included)
- Smartphone or tablet with an altitude app installed (preferably an ad-free app)
- Campus map (optional)
- Notebook or clipboard with paper for recording observations
- Pencils or pens

### Introduction (15 minutes):

- Begin by discussing the concept of altitude and its importance in various aspects of life, such as hiking, aviation, and weather.
- Read the article on altitude and how it is measured, both in the past and with modern technology. Encourage students to ask questions and clarify any concepts they find confusing.

### Hypothesis Formation (10 minutes):

- Ask students to think about the school campus and its varying elevations. Have them form a hypothesis about which locations they think will be the highest and lowest points on campus.
- Encourage students to share their hypotheses with the class and explain their reasoning.

### Campus Exploration (20 minutes):

- Keep the class together and designate a student or teacher to use a smartphone or tablet with an altitude app installed.
- Provide the class with a campus map, if available, or have them sketch a simple map of the campus.
- Walk around the campus as a group and use the altitude app to measure the elevation at different points, focusing on the locations students predicted to be the highest and lowest.
- Ask students to record the altitude measurements and their observations on their notebooks or clipboards.

### Conclusion and Discussion (15 minutes):

- Reconvene as a class and discuss the findings. Talk about the accuracy of their predictions and any surprises they encountered during the exploration.



- Compare the students' hypotheses with the actual measurements and ask them to reflect on the factors that influenced the elevations on their campus.
- Summarize the activity by emphasizing the importance of understanding altitude and its practical applications in various fields.

#### Assessment:

Assess students based on their engagement, participation, and understanding of the concepts discussed. Consider their ability to form a hypothesis, work cooperatively in a group, and use the altitude app to collect data.

#### NCSCOS:

EX.3.G.1, 5.G.1, EX.5.G.1



# Measuring Altitude: How High Are We?

Have you ever wondered how we measure the height of mountains or how high up we are when we're in an airplane? That's called measuring altitude! In this article, we'll learn about altitude and how it's measured throughout history and today.

## What is Altitude?

Altitude is the height of an object or point in relation to sea level. Sea level is the average height of the ocean's surface, and it's used as a reference point for measuring altitude. When we talk about the height of mountains, buildings, or even airplanes, we're talking about their altitude.

## Measuring Altitude in the Olden Days

Before modern technology, people still needed to measure altitude. In ancient times, they used simple tools and methods. For example, they might measure the height of a mountain by comparing it to the height of a nearby, smaller hill that they could climb and measure more easily. They also used a method called "triangulation," which involved measuring angles and distances between points on the ground to calculate the height of an object.

## Tools for Measuring Altitude

Nowadays, there are a few different tools and methods used to measure altitude. Here are some of the most common:

**Barometer:** A barometer is a tool that measures air pressure. As you go higher in altitude, the air pressure decreases. By measuring the air pressure at a specific location, we can estimate its altitude. This method is not as accurate as others, but it's helpful when other tools aren't available.

**GPS (Global Positioning System):** GPS devices use signals from satellites to determine your location on Earth. These devices can also measure your altitude. GPS devices are commonly used in cars, smartphones, and other electronic gadgets.

**Altimeter:** An altimeter is a more specialized tool that measures altitude by using air pressure, like a barometer, but it's designed specifically for this purpose. Altimeters are often used by pilots, hikers, and mountain climbers.

**Surveying:** Surveyors use specialized tools and techniques to measure the altitude of specific points on Earth. This can include using a combination of GPS, leveling instruments, and other tools to get an accurate measurement.

### How is Altitude Measured at Any Location?

To measure the altitude at any location, you can use any of the tools mentioned above. For example, if you're hiking in the mountains, you might use a GPS device or an altimeter to find out how high up you are. If you're flying in an airplane, the pilot uses a combination of altimeters and GPS systems to determine the plane's altitude.

For measuring the height of mountains or other large landforms, surveyors will often work together with other experts, using a combination of tools and techniques to get the most accurate measurement possible. They'll take into account factors like the Earth's curvature and the local terrain to ensure their measurements are precise.

Now you know how altitude has been measured throughout history and how it's measured today! Next time you're on a hike or flying in an airplane, remember the different tools and methods that help us understand how high up we are.

### Now, You Try It!

If you have a smart phone at your house, there are apps you can download (with permission) that will determine the altitude for you. Then, when you go on hikes, be sure to check your altitude! Our favorite is called "My Altitude" and you can find it in the your app store.



## Hiking for Mental Health - A Creative Lesson Plan for Fifth Graders

### Objective:

To teach students about the mental health benefits of hiking and encourage them to reflect on their own experiences during a nature walk.

### Materials:

- "Hiking Your Way to Better Mental Health" article
- Journals or notebooks for each student
- Pencils or pens
- A nature trail or park near the school

### Introduction (15 minutes):

- Begin by discussing the mental health benefits of hiking using the "Hiking Your Way to Better Mental Health" article. Explain how hiking can reduce stress, boost mood, improve focus and creativity, build confidence and self-esteem, and foster social connections.
- Ask students to share their personal experiences with hiking or spending time in nature, and how it makes them feel.

### Nature Walk (30 minutes):

- Organize a nature walk for the class, either on a nearby trail or at a local park. Ensure students have appropriate clothing and footwear for the activity.
- As the students walk, encourage them to take note of their surroundings, focus on their breathing, and be mindful of their thoughts and feelings.
- Stop at a few points during the walk and ask students to share their observations and emotions at each location.

### Reflection Activity (20 minutes):

1. After returning to the classroom, have students take out their journals or notebooks.
2. Ask them to write a reflection about their experience during the nature walk, focusing on their emotions and thoughts before, during, and after the activity.
3. Encourage students to consider the mental health benefits they experienced during the walk and to identify which aspects of hiking had the most significant impact on their well-being.





### Group Discussion (15 minutes):

- Invite students to share their reflections with the class, focusing on the mental health benefits they experienced during the nature walk.
- Encourage a group discussion about the importance of incorporating hiking and other outdoor activities into their lives to promote mental health and well-being.

### Conclusion (5 minutes):

- Summarize the key points of the lesson, emphasizing the mental health benefits of hiking and the importance of connecting with nature.
- Encourage students to continue exploring hiking and other outdoor activities as a way to improve their mental health and overall well-being.

### Homework:

- Assign students to go for a hike or nature walk with their families or friends over the weekend. Ask them to write a journal entry about their experience, focusing on the mental health benefits they observed. Students can submit their journal entries during the following class session.

### NCSCOS

EX.3.G.1, 5.G.1, EX.5.G.1,

# Hiking Your Way to Better Mental Health

## Introduction:

Hiking is not only a fun and exciting way to explore nature, but it also offers significant benefits for our mental well-being. Research has shown that spending time outdoors, particularly in natural settings like forests or mountains, can improve mood, reduce stress, and increase overall mental health. Let's take a closer look at how hiking can positively impact our minds and how you can observe these benefits in your own hiking experiences.

## Reducing Stress:

In today's fast-paced world, stress is a common issue for many people. Hiking provides an opportunity to escape the hustle and bustle of everyday life, allowing us to connect with nature and experience a sense of calm. Studies have shown that spending time in nature can lower cortisol levels, a hormone released in response to stress. Moreover, the physical activity involved in hiking releases endorphins, the "feel-good" hormones, which can help counteract stress and promote relaxation.

## Boosting Mood and Reducing Anxiety:

Hiking has been shown to have a positive effect on mood and anxiety levels. The combination of physical activity and exposure to natural environments can help combat feelings of depression and anxiety. Furthermore, being in nature has been shown to increase levels of serotonin, a neurotransmitter that regulates mood, sleep, and appetite. This increase in serotonin can lead to improved mood and overall emotional well-being.

## Improving Focus and Creativity:

Nature has a unique ability to help us focus and think more clearly. Hiking in natural settings can give our brains a break from the constant stream of information and distractions we face daily, allowing us to recharge and improve our ability to concentrate. Additionally, spending time in nature has been linked to increased creativity, as it allows our minds to wander and explore new ideas more freely.

## Building Confidence and Self-Esteem:

Completing a hike, especially one that is challenging, can lead to a great sense of accomplishment and increased self-esteem. Hiking allows us to set goals and work towards achieving them, which can build confidence and foster a sense of personal growth. Moreover, overcoming obstacles on the trail can teach us valuable problem-solving skills that translate to other areas of our lives.

## Social Connections:

Hiking can also serve as a social activity, providing opportunities to meet new people or spend quality time with friends and family. Sharing the experience of hiking with others can help foster stronger relationships and improve our sense of connection to others.

## Monitoring Your Feelings:

The next time you go for a hike, pay attention to how you feel before, during, and after the activity. Make a mental note or even jot down your emotions and thoughts in a journal. This can help you become more aware of the positive impact hiking has on your mental health and encourage you to make it a regular part of your life.

## Conclusion:

Hiking offers numerous mental health benefits, from reducing stress and anxiety to improving focus and creativity. By incorporating hiking into our lives and being mindful of its effects on our well-being, we can enjoy not only the beauty of nature but also its powerful ability to enhance our overall mental health. So, lace up your hiking boots, hit the trails, and take note of the improvements in your mood and mindset. Your mind will thank you for it!