



STEM

adventure trail

ACTIVITY GUIDE



NATURALIST



ARE YOU “NATURALLY” CURIOUS?

BECOME A BCCM STEM ADVENTURE TRAIL NATURALIST

A naturalist spends time in nature, studying plants, animals, bugs, and everything else they find. Using special tools like magnifying glasses and notebooks, naturalists learn about the creatures and plants they see. They help protect nature by understanding it deeply.

EXPLORE NATURE LIKE A DETECTIVE

- Learn about plants, animals, and bugs by watching them closely.
- Use tools like magnifying glasses to see tiny details.
- Keep notebooks to write down all your exciting discoveries.
- Enjoy a never-ending adventure in the great outdoors!

DON'T STOP HERE.
EXPLORE MORE IDEAS ON THE NEXT PAGE...





THERE ARE HABITATS ALL AROUND YOU

USE YOUR MAGNIFYING GLASS AND BUG OBSERVATION CONTAINER

Science is a big adventure where we learn about the world. Like detectives, we discover how things work—why the sky is blue, how plants grow, and why some things float. We ask questions and find answers through experiments and observations.

Ecology is like a puzzle showing how animals, plants, and people fit together in nature. Learn how animals find homes, how plants make food, and how everything in nature is connected.

Activity: Use a Magnifying Glass and Bug Observation Container

- A magnifying glass makes small things look bigger.
- The bug observation container lets you watch bugs up close.
- Draw what you observe and note where you found it.





EXPLORE MORE WITH TECHNOLOGY

ASK YOUR PARENTS FOR PERMISSION TO
DOWNLOAD AND CREATE ACCOUNTS ON THESE APPS



Seek by iNaturalist (for kids under 13)

Earn badges and observe organisms with on-screen identification.



iNaturalist

Capture photos of observations and record details like what, where, and when.



Merlin Bird ID

Identify birds using Bird ID Wizard, Photo ID, and Sound ID.



LET'S MAKE SOME INSTRUMENTS!



SUN DIAL TELL TIME WITH SHADOWS

Materials Needed:

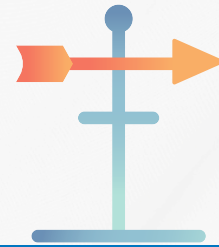
- Cardboard
- Craft paper
- Pencil
- Ruler
- Clay/Dough
- Glue

Steps:

1. Draw and cut a big circle from craft paper.
2. Paste it on cardboard.
3. Poke a pencil in the center and secure it with clay.
4. Place it in a sunny spot.
5. Mark the pencil's shadow each hour.

Alternative: Use Yourself as the Dial

1. Mark a starting spot to stand.
2. Have someone mark the top of your shadow and note the time.
3. Repeat every hour.



WIND VANE MEASURE WIND DIRECTION

Materials Needed:

- Plastic straw
- Paper plates
- Marker
- Pencil with new eraser
- Scissors
- Tape
- Poster board
- Straight pin (adult use)
- Ruler
- Modeling clay
- Table fan

Steps:

1. Write N, E, S, W on a paper plate.
2. Cut an arrow point and tail from the poster board.
3. Cut 1-inch slits on both ends of the straw and insert the arrow parts.
4. Place a ball of clay between two plates.
5. Push the pencil through the marked plate so it stands upright.
6. Push a pin through the straw into the pencil eraser.
7. Test with a fan.



HOW TALL IS THIS TREE?



HOW TO MEASURE TREE HEIGHT

Materials Needed:

- A partner
- Pencil
- Measuring tool (meter stick or tape measure)
- Tree

Steps:

1. Choose a tree to measure. One person stands near the tree, the other walks away.
2. Hold a pencil vertically in front of you and align it with the tree.
3. Turn the pencil horizontally and have your partner move to the tip of the pencil.
4. Measure the distance from the tree to your partner to estimate the tree height.

Alternative: Use Ratios and Shadow Length

5. Measure your height and shadow length.
6. Measure the tree's shadow length.
7. Use the formula: (Your height / Your shadow length) = (Tree height / Tree shadow length)

Example Calculation:

- Your height: 46 inches
- Your shadow length: 56 inches
- Tree shadow length: 245 inches
- Tree height = $(46 / 56) \times 245 = 201$ inches (approximately 16 feet and 9 inches)

