



EARTH ROCKS!



RATIONALE FOR ADVENTURE

Through this adventure, Webelos Scouts will see the relevancy of earth science and how it impacts their daily lives. They will begin to understand the use of rocks and minerals in everyday items. Their investigations will give them an understanding of geological events and they will have the opportunity to learn about geological features in their own state.

TAKEAWAYS FOR CUB SCOUTS

- Learning about the science of geology
- Identifying and testing rocks and minerals
- Becoming aware of geological materials and landmarks in their area
- Geology/earth scientist career awareness
- Performing geological investigations while upholding the values of Leave No Trace



ADVENTURE REQUIREMENTS

Complete the following requirements.

Webelos Handbook, page 312

1. Do the following:
 - A. Explain the meaning of the word "geology."
 - B. Explain why this kind of science is an important part of your world.
2. Look for different kinds of rocks or minerals while on a rock hunt with your family or your den.
3. Do the following:
 - A. Identify the rocks you see on your rock hunt. Use the information in your handbook to determine which types of rocks you have collected.
 - B. With a magnifying glass, take a closer look at your collection. Determine any differences between your specimens.
 - C. Share what you see with your family or den.
4. Do the following:
 - A. With your family or den, make a mineral test kit, and test minerals according to the Mohs scale of mineral hardness.
 - B. Record the results in your handbook.
5. Identify on a map of your state some geological features in your area.
6. Do the following:
 - A. Identify some of the geological building materials used in building your home.
 - B. Identify some of the geological materials used around your community.

NOTES TO DEN LEADER

The first meeting of this adventure is the suggested den outing—a rock hunt around your den meeting site or other conveniently accessible location. Have the Webelos Scouts complete requirement 1 and bring the information with them to discuss at the meeting.

In advance of the outing, the leader will need to make arrangements with the outing location or land-owner and confirm the outing plan with families, including transportation and any additional items they need to bring. Make sure activity consent forms are distributed, signed, and collected.

See the appendix for optional den meeting activities, including openings, gatherings, and closings.

MEETING 1 PLAN (Rock Hunt)

PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- Read the Earth Rocks! adventure and plan a rock hunt around your meeting place or other conveniently accessible location. Confirm that transportation to and from the rock hunt site is in place. Secure signed activity consent forms.
- The den leader should bring a copy of the *Guide to Safe Scouting*.
- If your rock hunt involves a site where the Scouts can dig, make sure you have received permission to do so from the landowner. Verify if permission is also given for the Scouts to collect and keep the rocks they find, and review Leave No Trace guidelines regarding rock collecting. If permission is not given, encourage the Scouts to bring cameras or smartphones to capture their rock collections virtually for display at a den or pack meeting.
- Each Scout will need the appropriate tools (see “Geologist’s Equipment” in the *Webelos Handbook*). Scouts should also bring their handbooks to help with identification of specimens.
- Notify Scouts of any personal items and special clothing they will need (water bottles, sunscreen, hats, closed-toe shoes).
- Consider bringing other rock collecting field guides from local libraries or geology clubs.
- Invite a geologist or rock collector to attend the outing and help in the identification of rocks.
- Prepare thank-you notes that Scouts can sign for those who help with the outing.

GATHERING: ROCK HOUND

- Scouts can play this game like rock-paper-scissors but substituting hammer, magnifying glass, and glove. Hand signals in this version are as follows:
Hammer = Close your fist (hammer beats magnifying glass).
Magnifying glass = Make a circle with your fingers and hold up to your eye (magnifying glass beats glove).
Glove = Lay one hand over the other (glove beats hammer).

OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law.

TALK TIME (REQUIREMENT 1)

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.
- Review the Leave No Trace Principles for Kids and how they relate to rock hunting.
- Have Scouts share what they learned before the meeting about the meaning of the word “geology” and why this field of science is important.

ACTIVITIES

◆ Activity 1: Rock Hunt (Requirements 2, 3, and 6)

- If the Scouts are permitted to dig, remind them to leave the location as it was before digging, putting dirt back where it belongs. If Scouts cannot dig, they can take photos to create a visual display.
- Have the Scouts look for different kinds of rocks and identify what types they find according to their handbooks, which show the three main rock groups and provide an explanation of minerals.
- Scouts should also try to identify any rocks that are typically used as building materials. Do they recognize any that were used in building their homes? In their communities?

CLOSING

- **Den Leader's Minute:** Compare experiences during the outing to points of the Scout Law. For example, *courteous*: Thank the Webelos Scouts for being courteous “rock hounds” while on their hunt. Or *helpful*: The Scouts assisted one another in finding rocks or while walking on rough terrain. Perhaps rocks could remind one of being *brave*—facing the elements of rain, heat, or ice—or *reverent* in the construction of houses of worship.

AFTER THE MEETING

- Serve refreshments, if desired and appropriate.
- Work together to leave the outdoor location cleaner than you found it.
- Record completion of requirements 1, 2, 3, and 6.
- Have Scouts sign their thank-you notes for those who helped.

MEETING 1 RESOURCES

ACTIVITIES

Activity 1: Rock Hunt

A den meeting in the field where Scouts can look for rock and mineral specimens will be very exciting for them as they become real rock hounds! Make sure the Scouts have their handbooks to help them identify the three kinds of rocks, review the explanation of minerals, and record what they find. If you don't have an expert along, you could also take one of the excellent handbooks on rocks and minerals that can be found in the public library or possibly find an app if you have a smartphone that could help identify what you find.

An excavation, a riverbank with steep sides, or a highway cut would be a good place to find mineral samples. Rocks can be found along roadsides, in streambeds, on riverbanks, or on hillside ledges. Take along pencils, magnifying glasses, heavy gloves, a rock hound's pick and chisel, and safety glasses or goggles.

Check local laws before digging for rocks or minerals. In some states, laws prohibit digging rocks and other things from the ground. If permission is given for the Scouts to dig, permission might also be given for them to start their very own rock collections.

Encourage Scouts to look for golf ball-size specimens or smaller. You don't want to pick up every rock you see; for example, attempting to pick up a 50-pound rock should be discouraged! If permission was not given for the Scouts to keep the rocks, practice the Leave No Trace guidelines—leave it where you find it—and encourage everyone to replace the rocks and dirt they may have dug up after they have identified them.

If you search carefully, you may also find some fossils—the remains of ancient plants and animals. Fossils can be found almost anywhere, even in your own driveway. But much more likely sites are old quarries, river bluffs and banks, gravel pits, excavations, and highway cuts—the very places you'll be looking for rocks and minerals. When you find a fossil embedded in another rock, be patient in taking it out.

MEETING 2 PLAN

PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- *Webelos Handbooks*
- Items for making pet rocks (Gathering):
 - Medium-sized river rocks from craft stores
 - Other craft items (wiggly eyes, felt, yarn, glue, construction paper, etc.)
- Collection of rocks from your den outing (if allowed), a geological society, or a local school or university's science department
- Field guide to rocks (found at library or through local rock clubs)
- State road map for locating geological landmarks (Activity 1)
- Materials for a mineral testing kit (Activity 2). Besides the minerals, you will need a penny, a small piece of glass, a piece of unglazed tile, a file or pocket knife, a small bottle of vinegar, and an eye-dropper. Each Scout could be assigned to bring one or more of those items.

GATHERING: PET ROCKS

- As Scouts arrive, have them create pet rocks using the supplies you collected.
- Each Scout may give their rock a name, make a “costume” for it, and “teach” it a joke or trick. At home they can take their rock for a walk, write a journal about what it does each day, or photograph the rock and create a blog—all strictly for fun!

OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law. Emphasize that the Scout Law is a guidepost for all we do in life, not just in Scouting.

TALK TIME

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.

ACTIVITIES

◆ Activity 1: Finding Geological Sites (Requirement 5)

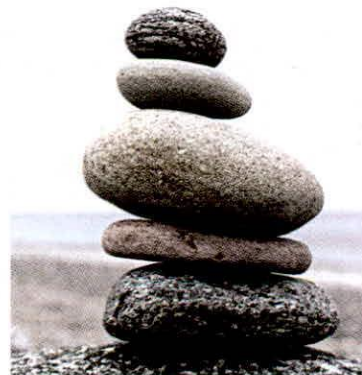
- Set the state road map on a table and help the Scouts locate sites near rivers, lakes, or mountains where they might find good geological specimens. Scouts who have visited the locations with their families may offer suggestions.

◆ Activity 2: Mineral Testing (Requirement 4)

- Set out the items for a mineral testing kit and explain what the kit is used for.
- Show the Scouts how to do streak, scratch, and fizz (acid) tests on the minerals, following the directions in the *Webelos Handbook*. Have them test different types of minerals and record the findings in their handbooks.

CLOSING

- **Den Leader’s Minute:** If there are hiking trails nearby, the Scouts may have noticed piles of rocks left at different spots on the trail. If not, simply note that trails are often marked with *cairns*—piles of rocks left to mark something significant like a summit, a turn, or anything of particular interest.
- Likewise, every Webelos Scout who follows the 12 points of the Scout Law becomes a marker—a *cairn*—for those who look to them as a model, especially the Lion, Tiger, Wolf, and Bear Scouts in the pack.



AFTER THE MEETING

- Serve refreshments, if desired.
- Work together to clean up the meeting place.
- Record completion of requirements 4 and 5.

MEETING 3 PLAN (OPTIONAL DEN OUTING)

PREPARATION AND MATERIALS NEEDED

- Confirm that transportation to and from the location is in place. Secure signed activity consent forms.
- The den leader should bring a copy of the *Guide to Safe Scouting*.
- If traveling to a landmark, remind Scouts of any items needed for that outing: handbooks, appropriate clothing, sunscreen, hat, water bottles, etc.
- If visiting a geologist or earth scientist, contact the location at least a month in advance and give this professional a copy of the adventure requirements so he or she will know what has been done before the outing. Bring index cards for Scouts to write down any questions they would like to ask during the visit.
- Bring the signed thank-you notes for those who help.
- Another option would be for a geologist or earth scientist to visit the den at your usual meeting site. Likewise, someone from the U.S. Natural Resources Conservation Service might be invited to come.

GATHERING

- If the meeting is outside, take the opportunity for a theme-related game of tag. Standard rules apply except that a Scout is “safe” and cannot be tagged if they are touching a particular rock (rock tag) or something made of minerals (mineral tag).
- If indoors, each Scout could move a number of small rocks from one spot (a small, shallow bowl, a saucer, or a circle drawn on a piece of paper) to another spot using two toothpicks. This could be a relay, a time contest, or just a game of skill.

OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law. A relatively quiet opening might be best, particularly if meeting in someone’s office.

TALK TIME

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.
- Review questions to make sure all are appropriate. Provide index cards so Scouts can write down the questions for reference.

ACTIVITIES

◆ Activity 1: Geology Outing or Visit With Science Professional

- If meeting at a geological landmark, divide Scouts into buddy pairs and explore the area.
- If visiting an office or hosting professionals at your den meeting, let them know the Scouts have questions they would like to ask during or after the tour or presentation. When the visit ends, be sure the Scouts show appreciation and give their thank-you notes to everyone who helped.

CLOSING

- Reflect on what the den has learned in this adventure about our earth and the types of rocks and minerals it holds.
- Moving around the circle, have the Scouts share ways they can help to protect our earth and keep it clean (11th point of the Scout Law).

AFTER THE MEETING

- Serve refreshments, if appropriate and desired.
- Work together to clean up the meeting place or to leave the outdoor location cleaner than you found it.

Upon completion of the Earth Rocks! adventure, your Webelos Scouts will have earned the adventure pin shown here. Make sure they are recognized for their completion by presenting the adventure pins, to be worn on their uniforms, as soon as possible according to your pack's tradition.



NOTES