




# FUR, FEATHERS, AND FERNS



## RATIONALE FOR ADVENTURE

In this adventure, Bears will explore the outdoor world of mammals, birds, plants, and more! They will understand that every living thing has a home—often very close by. Scouts will also discover that almost every living thing's neighborhood is a home to at least one type of another living thing. Protecting those homes, called habitats, is up to everyone, and Bears can help!

## TAKEAWAYS FOR CUB SCOUTS

- Learning about the world of creatures and how we affect our environment
- Practicing ways to conserve in the world around us
- A Scout is thrifty. 

## ADVENTURE REQUIREMENTS

*Bear Handbook, page 86*

Complete requirement 1 plus three others.

1. While hiking or walking for one mile, identify six signs that any mammals, birds, insects, reptiles, or plants are living near the place where you choose to hike or walk.
2. Visit one of the following: zoo, wildlife refuge, nature center, aviary, game preserve, local conservation area, wildlife rescue group, or fish hatchery. Describe what you learned during your visit.
3. Name one animal that has become extinct in the last 100 years and one animal that is currently endangered. Explain what caused their declines.
4. Observe wildlife from a distance. Describe what you saw.
5. Use a magnifying glass to examine plants more closely. Describe what you saw through the magnifying glass that you could not see without it.
6. Learn about composting and how vegetable waste can be turned into fertilizer for plants.
7. Plant a vegetable or herb garden.

## NOTES TO DEN LEADER

This adventure has several choices based on which activities you choose to do with your den. These den meeting plans, when followed as written, meet the requirements to earn this adventure. If you choose to make adjustments, be sure you complete at least the minimum requirements.

Make arrangements to visit a local, state, or federal wildlife refuge, zoo, nature center, aviary, game preserve, local conservation area, wildlife rescue group, fish hatchery, or other animal preservation area for Meeting 3. Identify a location for the outing to help Cub Scouts fulfill requirements for this adventure in a field setting. Where you decide to visit may change the order of activities you do in den meetings 1 and 2.

In advance of the outing, the leader will need to make arrangements with the outing location 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

## PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- Pictures of local animals, birds, and plants
- At least one pair of binoculars for the den
- Magnifying glass for each Scout or each pair of Scouts
- Paper and pencil for each Scout
- Materials and equipment to build bird feeders, if desired (See Meeting 1 Resources.)
- Review the Trail Tips for Cub Scout Leaders in the front matter.
- Cub Scout Six Essentials for each Scout

## GATHERING

Make sure each Bear has in their possession (or has access to) the six Cub Scout outdoor essentials. As Scouts arrive, lead them in stretching and warming up exercises for the hike. (See the *Bear Handbook*.)

## OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law.
- Recite the Outdoor Code (see the *Bear Handbook*). Note that Bears will focus on being considerate in the outdoors.
- Recite the principles of Leave No Trace (see the *Bear Handbook*). Tell Bears that they will look for ways to demonstrate leaving what they find and being kind to other visitors.

## TALK TIME

- Introduce the Fur, Feathers, and Ferns adventure. Build interest by describing the goals of the adventure and some of the activities that are planned.
- Carry out business items for the den.
- Explain that stretches prepare Scouts physically for hikes and other physical activities. Remind everyone in the den of the rules of safe hiking and check that they have the Cub Scout Six Essentials.
- Explain that this week's portion of their adventure will require everyone to stay alert to signs of creatures. Ask Bears what they can do to help others see the wildlife. (Ideas might be to remain quiet and listen, and to share with others in the den through hand signals when someone sees something.)
- Discuss what the Bears will do on the hike to demonstrate the specified principles of the Outdoor Code and Leave No Trace.

## ACTIVITIES

### ◆ Activity 1: Neighborhood Hike (Requirements 1, 4, and 5)

- Go on a 1-mile hike through your neighborhood, a park, or another suitable location. While hiking, focus on observing and identifying six signs of birds, animals, insects, reptiles, and plants. (Hiking tips can be found in the front matter.)
- During the hike, be on the lookout for animals such as squirrels or birds that can be observed in most settings. Encourage each Cub Scout to observe what the animal is doing and to share the binoculars for a better view. Challenge them to explain how watching animals from a distance might be preferable to getting closer. Possible responses: the animals are less likely to flee; you see them engaged in natural behavior. (Requirement 4)

- Stop several times along the hike to examine interesting objects with a magnifying glass. Remind Bears to beware of inadvertently burning insects with a magnifying glass. Ask Bears to describe what they can see with the lens that would not otherwise be visible. Possible responses: small hairs on plants such as mints; distribution of color/pigments; bark texture; details in leaves such as pores, other small openings, or veins. (Requirement 5)

### ◆ **Activity 2: Make a Bird Feeder (Optional)**

If there is time after the hike, Scouts may make a bird feeder to take home to continue observing nature in their own backyards. (See Meeting 1 Resources.)

## **CLOSING**

Ask Bears to reflect on the Outdoor Code. How were they considerate in the outdoors? Did they leave what they found? Did they help other visitors enjoy the outdoors? Why are those principles important?



### **Do-at-Home Project Reminder:**

Before the next meeting, Bears will need to research an animal that has become extinct in the last 100 years and learn why the animal became extinct. Bears should also learn about one animal that is on the endangered species list. Finally, with a parent's or guardian's permission, Bears can look on a government website to learn more about endangered species in their area. Members of the den will share what they learned at Meeting 2. (Requirement 3)

## **AFTER THE MEETING**

- Serve refreshments, if desired.
- Record completion of requirements 1, 4, and 5.
- Work together to clean up the meeting place.
- Prepare thank-you notes for the Bears to sign at the next meeting.

# **MEETING 1 RESOURCES**

## **USING BINOCULARS**

Teaching youth to use binoculars isn't difficult; they just need a few instructions to make it easy for them. To start, be sure you get binoculars that are the right size and weight for those of Bear Scout age.

### ◆ **Comfort and Fit**

- Choose youth-sized, lightweight binoculars for smaller faces and hands. Adjustable models also work very well for this purpose.
- Make sure the binoculars have an easy-to-reach knob for focusing the lens.
- Teach them how to adjust the two halves to match the distance between their eyes.
- If a Scout wears glasses, they should be kept on when using binoculars.

### ◆ **Safety**

- Teach Bears that they should never walk while looking through the binoculars. This is to avoid walking into holes, bumping into trees, or falling into streams.
- Tell the Bears to wear the binocular strap around their necks—they should not carry the binoculars or set them down. This will help prevent dropping the binoculars into a pond, for example, or accidentally leaving them behind.



## ◆ Practice

- Bears should first look at the object they want to view without using the binoculars.
- Then, they should raise the binoculars slowly up to their eyes.
- Once they've found the object again, they can focus the lens.
- While in the outdoors, see if the Bears can hear an animal or bird first and then try to find it with their binoculars.

## BIRD FEEDERS

There are several examples below of bird feeders that Bears can make. Remind them to place the feeders or birdhouses high enough to keep animals from eating the seeds or catching the birds. Avoid areas with power lines. Be sure to check for allergies before creating bird feeders.



## ◆ Bird Cake

### Materials:

- Wild birdseed
  - Piece of mesh bag (e.g., from a potato or onion sack)
  - 12-ounce juice can
  - ½ pound of suet
  - Double boiler
  - Long piece of wire
1. Cut the mesh sack to fit inside the can, with the extra sticking out from the top.
  2. Cut the suet into small pieces and heat in the double boiler (to keep it from burning). Let it cool and harden. Remove any pieces of meat.
  3. Reheat the suet and mix in 1 cup of birdseed. Pour the mixture into the can and set it in a refrigerator to harden.
  4. Set the can in warm water and carefully run a knife around the inside to loosen the sack. Pull out the sack.
  5. Tie the ends of the sack with wire, leaving enough to hang it from a tree limb. This same mixture can be molded in a cut-down cardboard milk carton, small foil dishes, or half a grapefruit shell. The cakes can then be set on a fence post or in a feeder.

### ◆ Bird's Delight

#### Ingredients:

- 1 cup melted suet
- 3 teaspoons cornmeal
- 1¼ cup peanut butter
- 3 teaspoons butter
- ¼ cup cracked corn
- ¼ cup raisins

Melt the suet as described for the bird cake, adding the peanut butter during the second heating. After the suet has cooled the second time, add the other ingredients. Pour into containers and set in the refrigerator to harden.

### ◆ Bird Treat Tower

#### Materials:

- Two mesh bags
- Maize
- Plastic lid
- Shelled peanuts
- Scissors
- Sunflower seeds
- Plastic wire or string

Place one mesh bag inside the other to reduce the size of the holes. Fill about one third of this combined bag with sunflower seeds and tie off that section—like a sausage link. Next, add a layer of maize in the middle third of the bag and tie again. Add the final layer of peanuts and tie the bag closed. Punch a hole in the center of the plastic lid and pull the end of the bag through it. The lid will protect the food from the weather. Make a hanger from the wire or string, attach it to the end of the mesh bag, and hang it in a suitable place.

### ◆ Pinecone Treats

#### Materials:

- Peanut butter
- Cornmeal
- Pinecone
- Wire

Mix together equal amounts of peanut butter and cornmeal, about 2 teaspoons of each. The cornmeal reduces the stickiness of the peanut butter, making the mixture safe for birds to eat. Tie a piece of wire around a large pinecone for hanging from a tree. Spoon the mixture in between the pinecone petals. The birds will love it.

### ◆ Suet Log Bird Feeder

#### Materials:

- One log, about 16 inches long and 4 inches in diameter
  - Suet
  - Knife drill or ax
  - Heavy screw eye
1. Drill 1-inch-wide holes, six to 10 of them, halfway through the log.
  2. Have an adult taper the top of the log with an ax or knife and apply varnish to prevent the wood from cracking.
  3. Insert the screw eye in the tapered point and attach a wire for hanging the log from a low branch.
  4. Force suet into the holes and hang the feeder from a tree in the yard where it can be observed from the house. Hang it low enough for easy refilling but out of reach of dogs and cats. Woodpeckers, chickadees, titmice, and other suet-feeding birds will enjoy your creation.

### ◆ Milk Carton Bird Feeder

#### Materials:

- Half-gallon cardboard milk carton
  - Paper clip
  - Two brass paper fasteners
  - Wire coat hanger
  - Marker
  - Scissors
1. Use the marker to make cutting lines on the carton. The bottom of the feeder should be 1¼ inch deep. Cut out the opening, leaving the top to be folded back for a roof.
  2. Straighten the paper clip and push it through the carton about 1¼ inch from the gable. Bend the clip inside the carton to secure it. Insert the other end of the clip through the feeder roof and bend back to hold.
  3. Push the paper fasteners through the peak to seal the top of the feeder. Punch a hole in the peak to hold the coat hanger hook.
  4. Punch a few small holes in the bottom of the feeder to let out moisture. Hang your feeder from a branch.



# MEETING 2 PLAN

## PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- Small containers
- Seeds or small plants
- Soil
- Gardening tools
- List of possible compost materials
- Cardboard periscope materials and tools or magnifying glass (See Note to Den Leader in Activity 1 below and the *Bear Handbook*.)
- A pre-assembled periscope for Activity 1 introduction
- Materials for composting in a cup (See Meeting 2 Resources.)

## GATHERING (REQUIREMENT 7)

As Bears arrive, help them plant vegetable seeds or herb seeds in their own containers to take home after the meeting. Small vegetable or herb plants can also be used. This activity is a good opportunity for your den chief to assist.

## OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law.
- Have each member of the den tell everyone what vegetable is their favorite.

## TALK TIME (REQUIREMENT 3)

- Carry out business items for the den.
- Ask any Bear who has researched an extinct animal for Requirement 3 to share their findings with the den.
- Briefly describe next week's field trip and service project, and review items each Bear should bring and wear.
- Review the gathering activity and ask, "What can be done with these vegetables and plants other than eat what they produce?"
  - Talk about what compost means and why a Scout and their family might consider having compost. Emphasize how it helps our environment by repurposing food that would otherwise become waste. Tell Bears that compost must be carefully tended. Then explain what the compost material becomes over time and how the material can be used.
  - Distribute instructions and a list of possible compost ingredients and the benefits they give to the soil. Ask Bears for suggestions of things to add to compost. Remind them that a Scout is thrifty and can reduce waste by composting.

## ACTIVITIES

Two activities are optional and have been provided for this meeting. You may choose one or the other or do both depending on the needs and size of your den.

### ◆ Activity 1: Make a Periscope

Here's a science scoop to pass along to your Bears: When you look directly at something like a ball, you see it because light from the sun or a lamp bounces off the ball and goes into your eye. When you hold the ball around a corner, you don't see it anymore because the light bouncing off doesn't reach your eye. But you CAN see the ball if you hold a periscope past the corner and look through it. That's because the periscope uses mirrors to bounce the light from the ball around the corner and into your eye.

- Explain that scientists show respect for nature by often observing wildlife and plants from a distance. Remind Bears of the binoculars they used in Den Meeting 1 for the same purpose.
- Explain that a periscope can also help us look at things from afar and make them seem closer. Show an example of a periscope that is already constructed.
- Have the Scouts make their own periscopes. Follow the steps in the *Bear Handbook* or another resource of your choosing.
- If there is time after the periscopes are assembled, let the Scouts practice using them in your meeting location or outdoors. Have each Bear pair up with a buddy for this brief exploring time, and then resume the meeting. Ask the Bears: Can you think of a way to improve this periscope design? What happens if you use a longer box? Can you make a periscope using just one mirror?

### ◆ Activity 2: Composting in a Cup (Requirement 6)

This is a good experiment to help Bears understand how compost is created. They will make compost on a very small and manageable scale by using cups and precollected organic items such as leaves, grass clippings, etc. (See Meeting 2 Resources for detailed instructions and background information about the science behind composting.)

## CLOSING

- Remind Scouts to bring proper clothing and equipment to the den outing, as well as signed activity consent forms (if needed). Confirm transportation plans and the meeting location and time.
- Sing "The Ants Go Marching" to tie into the theme of composting. (See Meeting 2 Resources.)

## AFTER THE MEETING

- Serve refreshments, if desired.
- Record completion of requirements 3, 6, and 7.
- Work together to clean up the meeting place.
- Have the Bears sign thank-you notes to present at the outing.



## MEETING 2 RESOURCES

### INDOOR GARDEN IN A TRAY (GATHERING)

**Materials:** Plastic tray, potting soil, vegetable seeds (e.g., radish, cress, lettuce) or herb seeds. Small vegetable or herb plants may be used instead of seeds.

**Instructions:** Have Bears fill the tray halfway with potting soil and dampen the soil with water. Demonstrate how to make lines across the soil for seed rows. Then cover the seeds with a thin layer of soil. Give Bears these instructions for growing gardens at home with the help of their parents or guardians:

- Leave the tray where it is warm and light.
- Keep the soil damp.
- Cut off the cress with scissors, and use this and other herbs in cooking or salads.
- You may need to thin the young lettuce and radish plants. Pull a few out and place them in a separate tray to finish growing. The same, if needed, can be done with the herbs.

## How to Make Compost

Composting starts by putting a mixture of organic materials in a pile or container, along with water. There are three important ingredients for making compost:

**1 Green material** is high in nitrogen. It can be kitchen scraps like coffee grounds, peelings, fruit cores, and eggshells. Any non-greasy kitchen waste, except meat, can be composted. Manure (NOT dog and cat waste, only from barnyard animals), grass clippings, leaves, and weeds you have pulled are also green materials.

**2 Brown material** is high in carbon. Paper, sawdust, small branches and twigs, dry cornstalks or husks, and straw all fall into this category.

**3 Water** is needed to provide moisture inside the pile. This moisture warms up and helps the material to break down. A compost pile has enough water and other ingredients if it becomes hot in the middle.

Tiny insects chew the material, and probiotics (good bacteria) thrive in it. Turn the pile from the outside once a week so that fresh compost is exposed. This way, all the beneficial organisms will have a chance to grow in the ingredients. As the pile heats up, gains moisture, and is regularly turned, it becomes compost. In about one to two months, you will have a dark, rich, soil-like product. The finished compost has a fresh, earthy odor and can be used to enrich the soil in your garden. Happy growing!



## ◆ Activity 2: Composting in a Cup

### Materials:

- 16-ounce cup with holes in the bottom
- Pair of gloves
- Large bowl
- Organic compostable items (leaves, grass clippings, vegetable scraps, fruit scraps, coffee grounds, etc.)
- $\frac{1}{4}$  cup soil or dirt
- 1–2 teaspoons of water
- Piece of plastic wrap
- Rubber band
- Large plastic spoon

**Instructions:** Before beginning this activity, you will need to collect the organic items to compost. There are many different materials you can use. As a general rule, anything that comes from a plant or tree is good to include. Some things you DO NOT want are meats, dairy products, and seafood—those can attract pests, and nobody likes the smell of month-old salmon! Once your items are together, place them in the large bowl, add the 1–2 teaspoons of water and the  $\frac{1}{4}$  cup of soil, and mix.

Next, wearing the gloves and using the plastic spoon, place two scoops from the bowl into the 16-ounce cup. Now lay the piece of plastic wrap over the top of the cup and fasten it to the rim with the rubber band. Make sure the wrap is tight and the rubber band is secure.

Compost piles need sun, shade, water, and movement. So put your cup in a window that gets a good amount of sunlight or outside in an area that is exposed to the sun during the day. Every so often, add 1 teaspoon of water to your cup and give the contents a little shake. The water and movement helps with the composting process.

The sun warms the cup of organic material, which promotes increased microbial activity. (This is just a fancy way to say that the bacteria and fungi LOVE to live in a warm environment!) The shade keeps the compost from becoming too warm, which could lead to a loss of essential moisture.

Your compost cup is now complete, and the composting process is underway. It's time to let nature do its thing!

You can also experiment using composting containers of different shapes, sizes, and colors. For example, a black or dark-colored container will absorb more heat from the sun than one that is clear or light-colored.

### The Science Behind It

Compost forms naturally nearly everywhere! Leaves drop from trees. Grass clippings are left after you mow the lawn. Plants and animals die. Over time, these organic materials break down or decompose. The rich, dark brown, crumbly, soil-like material that results is called compost.

Tiny living things do much of the work of breaking down organic materials to make compost. These little workers are called microorganisms and include such things as bacteria and fungi. Worms, pill bugs, and other creatures living in the soil help the microorganisms transform the materials into compost.

The organic materials provide many of the nutrients that plants need for growth and activity. Eventually, these nutrients are returned to the soil, to be used again by trees, grass, and other plants. This is nature's way of composting and recycling!

The compost that you make at your home or school can be used as mulch or mixed into the soil. Compost is one of nature's best mulches and soil amendments. It helps you to save money by reducing your fertilizer, landscaping, and water bills, and by cutting down on trash pickups or disposal.

### **“The Ants Go Marching” (Closing Song)**

The ants go marching one by one.  
Hurrah! Hurrah!  
The ants go marching one by one.  
Hurrah! Hurrah!  
The ants go marching one by one;  
The little one stops to suck its thumb.

#### **Chorus:**

And they all go marching,  
Down into the ground to get out of the rain.  
Boom, boom, boom, boom, boom, boom, boom.

Additional verses:

The ants go marching ... two by two; the little one stops to tie its shoe.  
... three by three; the little one stops to climb a tree.  
... four by four; the little one stops to open a door.  
... five by five; the little one stops to do a jive.  
... six by six; the little one stops to pick up sticks.  
... seven by seven; the little one stops to look at heaven.  
... eight by eight; the little one stops to open a gate.  
... nine by nine; the little one stops to pick up a dime.  
... ten by ten; the little one stops to say, “The end”—or “the little one stops to start again.”

## **MEETING 3 PLAN (Den Outing)**

### **PREPARATION AND MATERIALS NEEDED**

- Confirm that transportation to and from the event is in place. Secure signed activity consent forms.
- The unit den leader should bring a copy of the *Guide to Safe Scouting*.
- Make sure everyone has packed the Cub Scout Six Essentials and has the proper clothing for the trip.
- Consider having Bears bring the periscopes they made in the last den meeting to observe wildlife during the outing.
- Check to see if a guide at the location can direct Scouts to local plants and wildlife.
- Ask the manager at the location if there is something the Scouts can do to improve the area. Make Bears and their families aware of those needs.

### **GATHERING**

- Ask Bears what they hope to learn during the outing. Tell them to remember to ask the guide any questions they have when they have a chance.
- Remind them of the buddy system, staying with the group, and observing the facility’s rules. Remember, a Scout is courteous and abides by all of the rules and customs at an outing venue.

### **OPENING**

- Recite the Pledge of Allegiance and the Outdoor Code.



## TALK TIME

- Carry out business items for the den.
- Discuss how Bears can be considerate in the outdoors during the outing.

## ACTIVITIES

### ◆ Activity 1: Nature-Themed Outing (Requirements 2 and 4)

- Visit a zoo, wildlife refuge, nature center, aviary, game preserve, local conservation area, wildlife rescue group, or fish hatchery.
- If possible, have the Bears provide some service to improve the location they visit.
- If the Scouts have their periscopes, they should use them to observe wildlife from a distance.

## CLOSING

- Ask Bears to reflect on their visit and share something new they learned or observed during the outing.
- Have them give their thank-you note(s) to anyone who helped with the trip.

## AFTER THE MEETING

- Serve refreshments, if desired.
- Record completion of requirements 2 and 4.
- Ensure cleanup takes place.



Upon completion of the Fur, Feathers, and Ferns adventure, your Bears will have earned the adventure loop shown here. Make sure they are recognized for their completion by presenting the adventure loops, to be worn on their belts, as soon as possible according to your pack's tradition.



# NOTES