



Bear

Requirements:

1. Complete each of the six required adventures:
 - a. Baloo the Builder
 - b. Bear Claws
 - c. Bear Necessities
 - d. Fellowship and Duty to God
 - e. Paws for Action (Duty to Country)
2. In addition to the six required adventures, complete at least one elective adventure of your den's or family's choosing.
 - a. Bear elective adventure
3. With your parent, guardian, or other caring adult, complete the exercises in the pamphlet entitled How to Protect Your Children From Child Abuse: A Parent's Guide
4. Earn the Cyber Chip award for your age. (The Cyber Chip portion of this requirement may be waived by your parent or guardian if you do not have access to the internet.) OR Earn the Protect Yourself Rules Preview Adventure for Bear.
 - a. Cyber Chip Award
 - b. Protect Yourself Rules Preview Adventure for Bear

Leaders Guide: <https://pigeonpost.scouting.org/wp-content/uploads/2019/07/Bear-LeaderGuide.pdf>

Intro Video: <https://www.scouting.org/programs/cub-scouts/den-meeting-resources/den-leadertips-tricks-video-series/#video-gallery-d5791a3-12>

*signifies preferred Scouting from Home option



Super Science

BEAR SUPER SCIENCE REQUIREMENTS:

1. Make static electricity by rubbing a balloon or a plastic or rubber comb against another material, such as a fleece blanket or wool sweater. Explain what you learned.
2. Conduct one other static electricity investigation. Explain what you learned.
3. Do a sink-or-float investigation. Explain what you learned.
4. Do a color-morphing investigation. Explain what you learned.
5. Do a color-layering investigation. Explain what you learned.

March Week 1

PREPARATION AND MATERIALS NEEDED

- “Lab coats” (Use old shirts throughout this adventure, due to the risk of staining.)
- Items for Static Cling and Follow the Balloon activities (requirement 1)
 - Balloon (If there are latex allergies in the den, substitute with a rubber or plastic comb and a piece of PVC pipe.)
 - Polar fleece blanket or 1 wool sweater
 - Section of cloth
 - Tissue paper
 - Ribbon
 - Aluminum foil
 - Two aluminum cans, one empty and one full
 - Paper scraps
 - Cardboard scraps
 - Yarn or string
 - chenille stem
 - Coin
 - Pingpong ball
 - Running water
- Items for Flying Bottle Beads activity (requirement 2)
 - Empty, dry 1-liter bottle
 - 1/4 cup of small Styrofoam beads (like the ones in beanbag chairs)
- One pair of goggles for each member of the den (These are optional but they add to the fun, and experiments in this adventure can get messy. However, if there are latex allergies, be sure to use nonlatex goggles.)

◆ Activity: Static Cling and Follow the Balloon (Requirement 1)

Option 1: Create static electricity by rubbing the balloon on the fleece blanket or wool sweater. Ask Scouts to predict which of these objects will stick to the balloon: human hair, tissue paper, aluminum foil, cardboard scrap, paper scrap, yarn/string, chenille stem, ribbon, cloth, and a coin. Discuss your findings with the den or family. Some objects will be more affected by static electricity than others.

Then charge the balloon again with static by rubbing it on the blanket or sweater. Predict which of these objects will follow the balloon and which ones will move away from it: pingpong ball, full aluminum can, empty aluminum can, gentle stream of tap water. Discuss the results with your den or family. This is another way we can prove that static electricity affects objects.

Now rub the balloon on someone's head. Watch what happens to their hair as negative electrons build up on the balloon. After doing this for a few seconds, place the balloon near a steady, gentle stream of tap water, about 1/8-inch thick. Does the water move toward or away from the balloon?

Option 2: Vigorously rub the PVC pipe or rubber comb against the blanket or sweater. Then conduct the same investigations as in Option 1 to see which objects stick to the pipe or comb. Conduct the same object and water investigations, substituting the comb for the balloon. For the water experiment, charge the comb by vigorously rubbing it against the blanket or sweater or running it several times through long, dry hair. Then place the comb near the stream from the tap and see how the water bends. In both options, the neutral water should be attracted to the electron-charged comb or balloon and move toward it.

◆ Activity: Flying Bottle Beads (Requirement 2)

Make sure the 1-liter bottle is empty and dry, then fill it with the 1/4 cup of Styrofoam beads. Now rub the bottle on someone's head and watch the beads fly around inside.

Next, see what happens when you put the bottle down and touch it with your hands. Do the beads move toward or away from your hands? Run the same investigations with more objects to check the reaction of the beads.

March Week 2

• "Lab coats" (see Meeting 1)

(Requirement 3)

- Three eggs
- Three drinking glasses (same size)
- Salt (2 tablespoons, more or less, depending on size of glasses)
- Sugar
- Water
- Tablespoon

• Items for Color Morphing investigation (Requirement 4)

- One large jar or vase (must be clear)
- Water
- Cooking oil
- Liquid food coloring (blue, red, and yellow)
- Tablespoon
- Measuring cup

- Items for Color Layering investigation
 - Sugar (15 tablespoons)
 - Water (15 tablespoons)
 - Food coloring (blue, green, red, and yellow)
 - Six clear plastic cups (same size)
 - Tablespoon

◆ Activity: Sink or Float (Requirement 3)

Ask Bears: Can you guess—or use your Super Science to “hypothesize”—whether an egg will sink or float in water that is salty? What if the water is filled with sugar? And what if the water has nothing added? Well, we can use our Super Science to find out.

Now conduct the investigation. Fill all three glasses with water. Have the Scouts leave plain water in the first glass, stir salt into the second one, and stir the same amount of sugar into the third glass. Can the Scouts predict what will happen when they add an egg to each glass? Let them try it and see if the eggs sink or float.

Then continue: In this adventure, we experimented with what scientists call “variables.” We left plain water in the first glass, but we stirred salt into the second glass and sugar into the third one. Salt makes water denser so the egg floats at the top. Using the same amount of sugar, the egg still floats, but not as well. In plain water, it doesn’t float at all. Did your findings support your hypothesis or should you have made a different prediction?

◆ Activity: Color Morphing (Requirement 4)

Ask: Have you ever heard the saying “Oil and water don’t mix”?

Let’s use our Super Science to find out if that is true. Then we’ll experiment more by adding colors to the liquid. What do you predict will happen?

Have the Scouts fill the jar or vase with water. Then add exactly 3 drops each of red, blue, and yellow food coloring to the oil (no more or it will turn black). Stir the color and oil together—you will see it break up into little droplets. Slowly pour the mix into the water and watch the show begin!

Now ask: What is happening? Did you guess right? Oil and water do not mix. When stirred together in the same container, they will actually push away from each other once the motion stops. When you added the food coloring to the oil, you stirred it, mixing the two together. Once this is added to the water and allowed to be still, the water and oil start to separate. Liquid food coloring is water-based. This causes the colors to push away from the oil. As the colors move through the water, it causes a beautiful color morphing effect. If you have more time for this activity, try it with different color combinations.

◆ Activity: Color Layering (Requirement 5)

Set out the materials for this investigation, and say: We found out how to create unique designs with colors in liquid. Now, can we put those colors together in layers to create a rainbow effect? Let’s use Super Science to see.

Place five of the cups in a row. Keeping the cups in order, add 1 tablespoon of sugar to the first cup, 2 tablespoons to the second, 3 tablespoons to the third, 4 tablespoons to the fourth, and 5 tablespoons to the fifth cup. Keep the sixth cup empty.

Pour 3 tablespoons of lukewarm water on top of the sugar in the first five cups, and stir until the mix dissolves. Now add a different food color to the first four cups and combine two of the colors in the fifth cup. Stir the five cups again.

Now, pour half the contents of the fifth cup into the sixth cup. Take the spoon and place it against the inside of the cup, bowl side up. (Note: Using a spoon diffuses the force of the liquid pouring into the cup. This will let the colors layer on top of one another instead of mixing.) Be sure to pour gently, creating the first layer, and continue doing this with the remaining three cups. Enjoy the rainbow in your sixth cup!

Explain: Adding sugar to the water causes it to become thicker as the sugar molecules take over the space. The more sugar you add, the denser the water becomes. This lets you stack the colored water as long as you pour it gently.