

STEAM STORY TIME

AT HOME: CAVES!

Suggested Reading

- *Caving* by Maeve T Sisk
- *Caves* by Marcia Zappa
- *Dave's Cave* by Frann Preson-Gannon
- *A Dark, Dark Cave* by Erick Hoffman
- *Bear Snores On* by Karma Wilson
- *Home in the Cave* by Janet Halfmann
- *Sleep, Big Bear, Sleep* by Maureen Wright
- *The Very Cranky Bear* by Nick Bland

Activity 1: Make speleothems

Supplies:

- Two cups or jars
- Cotton thread
- 2 Paper clips
- Warm or hot water
- Baking soda
- Food coloring (optional)

Prompt:

Speleothems are formations inside caves created when water leaves behind minerals. Stalactites (t for top) and stalagmites (g for ground) are both types of speleothems. Cave popcorn and cave pearls are also speleothems.

Directions:

1. Fill both cups with warm/hot water.
2. Stir baking soda into each glass until the water is fully saturated, meaning no more baking soda will dissolve in the water (for the cups provided, about 2 Tablespoons each). Add food coloring to each cup if you choose to do so.
3. Decide where to grow your speleothems: a place you can observe them but they will not be disturbed. First put down a tray or something else to protect the surface from your experiment and then place your cups there. Place the cups about 6 inches from each other.
4. Fold the string so that is long enough to span the cups with each end inside a cup going about half way down the cup.
5. Tie a paperclip to each side of the string so that it weighs down the string.
6. Place the weighted string, so that it spans the cups with each side inside a cup.
7. Now, the hard part: waiting.
8. Check your experiment after a few hours. What do you observe?
9. Check your experiment the next day. What do you observe now? How is it different or similar to yesterday? Repeat this step over the next several days. Eventually mineral deposits should form on the string.

Extended Activity

Experiment with other materials, such as table salt, Epsom salts, and sugar to see what kind of formations you can create.

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Activity 2: Create a cave animal

Supplies:

- Black paper
- White chalk

Prompt:

Different parts of the cave attract different animals. Near the entrance where light can get in, you may find animals such as bears and birds. Plants can also grow here. This area is called the light zone. A bit further in, light does not reach very much and it is cooler. This area is called the twilight zone and attracts animals like bats and cave salamanders. Further in from there is the dark zone. No light reaches here and the temperature is very cool. Animals (and fish) that live in the dark zone will spend their whole lives here and are often blind (the olm does not even have eyes!). Animals that live here may have good hearing or have feelers to know what is around them. These animals also don't usually have any color.

Directions:

Using your white chalk and black paper, draw a cave scene and create a cave-dwelling animal. What does it look like? Does it make any noise? What does it eat? What else is special about your new animal? Also, remember to give your new animal a name!

Activity 3: Create eggshell crystals

Supplies:

- Eggs
- Hot water
- Baking soda
- Something to hold up eggshells (egg carton, mini muffin tin, small bowls)
- Food coloring (optional)
- Saucepan

Directions:

1. Crack open and empty the eggs. You can try to have two halves, or one piece with the top most taken off of it.
2. Gently clean the inside of the shelves, being sure to remove the membrane. Using hot water can be helpful. If you do not remove the membrane then it is possible the egg will become moldy.
3. Place eggshells into a container to hold them up.
4. Adult task: In the saucepan, bring $\frac{1}{2}$ cup water to a boil.
5. Remove from heat. Add $\frac{1}{4}$ cup baking soda and stir.
6. Mixture should be saturated. If you want to, add food coloring and stir.
7. Pour mixture into eggshells, filling as full as possible without coming out.
8. Set your eggshells and mixture in a safe spot. It's time to wait again.
9. As the water evaporates, it leaves behind the baking soda, which will become solid and form crystals.

Extended Activity

Try forming crystals with other materials, such as table salt, Epsom salts, and sugar.