

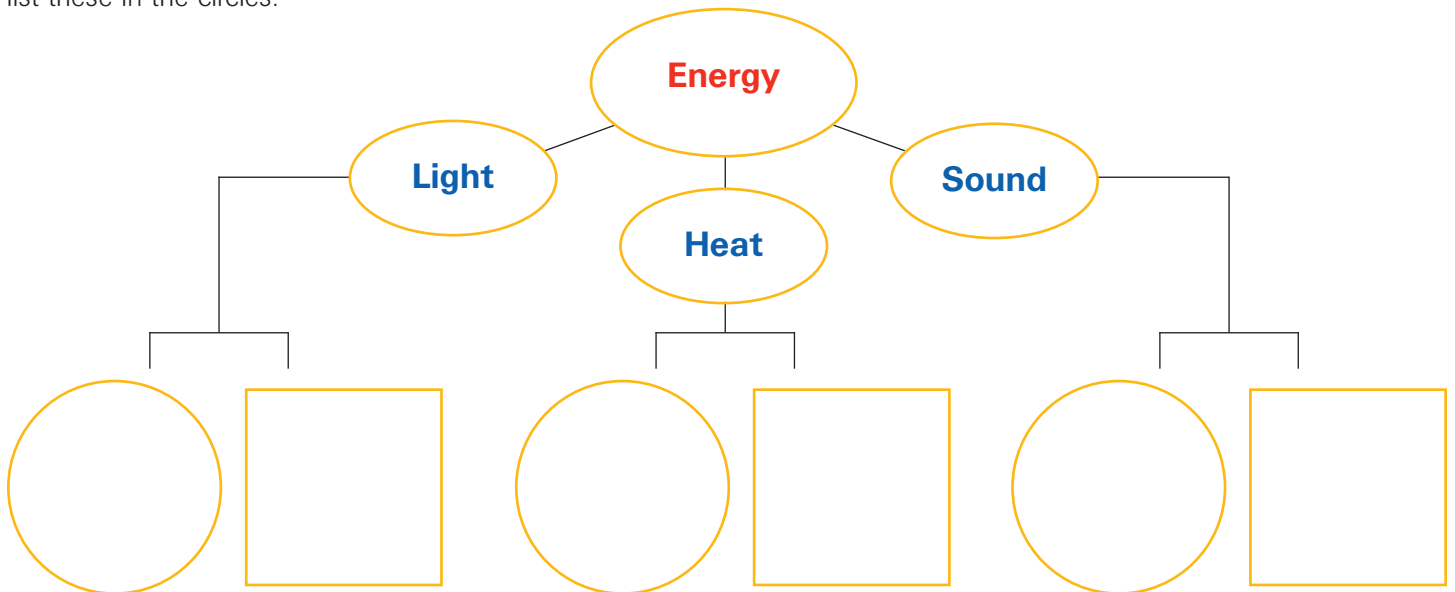
# SmART Science

Search and See... Make a New Discovery!



John Biggers, *Jubilee: Ghana Harvest Festival*, 1959–63, tempera and acrylic on canvas, the MFAH, gift of Duke Energy.

1. Imagine you have jumped into this painting in Ghana, Africa. Where would you see examples of different forms of energy? List those in the squares. Now return to your classroom and observe the forms of energy you see in the room; list these in the circles.



Name: \_\_\_\_\_

For more information about Learning Through Art at the MFAH, and for additional resources for teachers, visit the Kinder Foundation Education Center or go to [www.mfah.org/KFEC](http://www.mfah.org/KFEC).

**2.** How would you describe the temperature in this painting? Would the highest temperature be near the water, on the footpath, or somewhere else? Explain, using heat and light energy clues.

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**3. Drum up some sound energy with this simple experiment!**

You will need: 1 rubber band • 1 large piece of plastic wrap • 1 large can • 1 ruler • 1 small can • salt

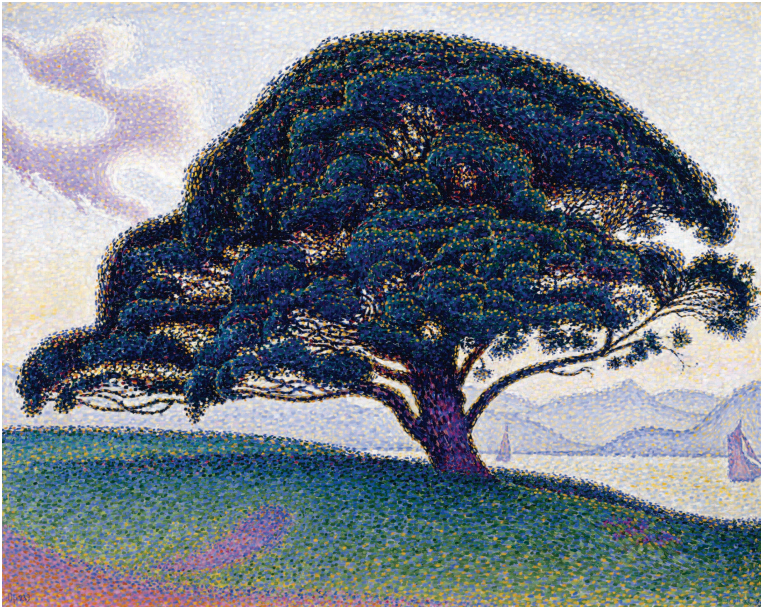
Pull the plastic over the open end of the large can while your partner puts the rubber band over it. Sprinkle salt on top of the plastic. Hold the small can close to the salt and beat it like a drum to create a sound. Notice what happens to the salt. What does this tell you about sound waves? Try tapping the small can louder and softer; how does the salt react? Now look at the painting, and guess how far the vibrations of the drumbeat travel. Who might hear the drums?

**Riddle to Solve**

*What has waves but doesn't require water?*

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Paul Signac, *The Bonaventure Pine*, 1893, oil on canvas, the MFAH, gift of Audrey Jones Beck.

**1.** Paul Signac painted this tree one day while riding around Mr. Bonaventure's land, so he called it *The Bonaventure Pine*. What part of the water cycle do the clouds in his sky show: evaporation, condensation, or precipitation? Draw and label arrows on the painting to show evaporation, condensation, and transpiration.

**2.** How would the painting change if you added precipitation?

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**3.** Imagine you are a raindrop that has just landed on one of Bonaventure Pine's leaves. The leaf is wondering how you landed on him. To make this leaf happy, you need to explain how you are part of the earth's water cycle. Explain your part in the water cycle, using the voice of the raindrop.

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**4.** How does the raindrop help the leaf survive, using photosynthesis?

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## Riddle to Solve

*What kind of cycle has no wheels?*

Name: \_\_\_\_\_

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Louis Comfort Tiffany, *A Wooded Landscape in Three Panels*, c. 1905, glass, copper-foil, and lead, the MFAH, museum purchase with funds provided by the Brown Foundation Accessions Endowment Fund.

1. An ecosystem is represented in this stained glass window. An ecosystem consists of all organisms living in an area and the nonliving features of the environment. Use clues from this scene to infer what living organisms would be found here.

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2. List the nonliving parts of this ecosystem.

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3. Create a possible food chain that could survive here:



## Riddle to Solve

*In the artwork, what can run, but never walk?*

Name: \_\_\_\_\_

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# SmART Science

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Edward Hicks, *Peaceable Kingdom*, c. 1826–28, oil on canvas, the Bayou Bend Collection, gift of Miss Ima Hogg.

1. This painting depicts a scene of William Penn meeting Native Americans (on the left), paired with a young child surrounded by animals. Observe the animals in this painting and categorize them according to differing types of consumers.

**Herbivores**

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**Omnivores**

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**Carnivores**

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Name: \_\_\_\_\_

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2. Using the chart on the front, which animals would be considered predators and which would be prey?

**Predators**

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**Prey**

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3. Imagine you are in this painting. Which animal would you choose to stand next to? Which one would you NOT want to stand beside? List the adaptations of each. Did those adaptations influence your decision?

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**Riddle to Solve**

*There are two kids in this painting—can you find them?*