

ADVANCED LEARNING LABS

Collaboration between NC Department of Public Instruction and AIG Teachers across the state

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES

K-1

Energy



ENGLISH LANGUAGE ARTS

The Sun and wind are both sources of energy. Listen to this version of Aesop's fable "The North Wind and The Sun:" <https://www.youtube.com/watch?v=TrFUyAJXWLU>

Make paper puppets of the Sun, the North Wind, and the man. Retell the story to a family member using the puppets.

Discuss with your family:

- Which is stronger in this fable, the sun or the wind? Use details from the story to support your opinion.
- Which do you think gives more energy in real life? Give reasons for your opinion.
- What is the moral (lesson) that is told at the end of the story? How does this story teach that lesson to people?



SOCIAL STUDIES

How do people change the environment? Watch this video to see how humans changed the island of Manhattan: <https://thekidshouldseethis.com/post/how-do-living-things-change-their-environments>

Think about your community. Draw a picture or make a list comparing your community today to what you imagine it may have been like 400 years ago.

- What plants and animals live there?
- What natural resources do people use in your community? (water, wind, sunlight, plants, wildlife, etc.)
- How have people changed the environment where you live? (planting, building, roads, water use)
- Which resources used and changes made are related to our need for energy?



SCIENCE

Plants need energy to live. Watch this video to learn about how plants use a process called photosynthesis to make their own food: <https://www.youtube.com/watch?v=lln136eMl4g>

Summarize the needs of plants for energy and growth.

As humans, we get some of our energy from eating plants. Plants are also food for other animals.

Make a list of plants that you eat.

- Is there a plant you'd like to try?
- Is there a plant that is your favorite? Why?



MINDFULNESS

Do you ever have trouble feeling energetic in the morning? You can connect your breath with movement to help you wake up and gain energy.

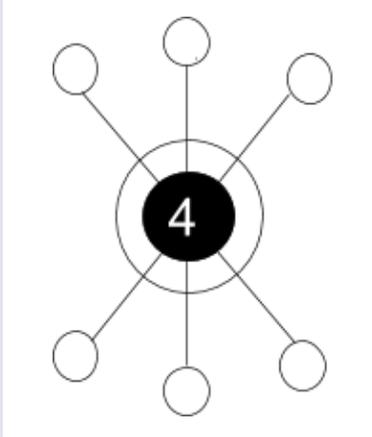
Practice the strategy in this video: <https://www.youtube.com/watch?v=O29e4rRMrV4>

- How did you feel before practicing?
- How did you feel after practicing?
- Do you think this might be a good way to help yourself wake up in the morning?
- How could you use this strategy at other times in your day?



LOGIC PUZZLE

Fill in the circles at the end of the sun's rays using 1, 2, 3, 5, 6, 7 so that all three numbers in a line must equal 12. Use each number only one time.



FIELD STUDIES

Did you know some living things can create their own light? This is called bioluminescence. Watch this video to learn more: <https://www.youtube.com/watch?v=oKjFVBVGad0>

- Can you think of any potential uses for bioluminescence?
- If you could create your own light, from where on your body would you want it to be emitted?
- When and why would you use the ability to create your own light?

Draw a picture of yourself with bioluminescence and share it with a family member or friend.



RESEARCH EXPLORATIONS

Let's explore kinetic energy!

Kinetic energy is the energy of motion. Create a chain reaction that will demonstrate kinetic energy.

1. Gather some dominos or similar objects.
2. Create a path where each domino stands on its end close enough to the next domino so that it will hit it if it falls.
3. Look at the dominos after they are set up. They are still, so they have potential energy.
4. Tap the lead domino and watch the chain reaction. Motion is kinetic energy!
5. Create more complex chain reaction paths.
 - What does your research through repeated trials teach you about kinetic energy?
 - List some other times you see kinetic energy.



MATH

Daily habits contribute to your energy level. Collect and analyze data to determine which habits make you feel healthy and energetic.

Track your habits for one week. Include what you eat, how many times you exercise, and how much rest you get.

Create a chart to display the data you collected.

- How does your data differ from day to day?
- What day did you get the most rest? The least exercise?
- Which day did you feel the best? What does your data tell you about this day?
- What questions can you create about your data? Ask a family member to answer.

What does your data tell you about which habits make you feel healthy and energetic?



North Carolina Department of
PUBLIC INSTRUCTION



Energy

Reference Guide

6-7 Logic Puzzle:

Solution: Light both ends of rope A and one end of rope B. After 30 minutes, rope A will be completely burned up and there will be 30 minutes of rope B left. Light the other end of rope B; it will burn up in 15 minutes. Total time elapsed since starting the ropes on fire: 45 minutes.

8-9 Logic Puzzle:

Solution: Number the switches 1, 2 and 3. Switch on number 1 for 1 minute, then switch it off. Switch on number 2. Go upstairs and examine the lights. The light that is on is connected to switch 2. The light that is off and warm is connected to switch 1. The light that is off and cold is connected to switch 3!!

8-9 Field Studies:

If you are interested in learning more about how nuclear energy works, visit:

<https://www.nationalgeographic.org/video/what-nuclear-energ>

10-12 Logic Puzzle:

Solution: 28

Each day he makes it up another meter, and then on the twenty-seventh day he can leap three meters and climb out.

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K-12

Energy NC Standards Alignment

| Grade Span | English/ Language Arts | Social Studies | Science | Math |
|--------------|---------------------------|--------------------------------------|------------------------|---------------|
| K-1 | RL.1.2 | 1.G.2.1 1.G.2.2 K.H.1 1.G.2 | 1.L.2 | NC.1.MD.4 |
| 2-3 | W.3.1 | 3.C&G.2.2 3.I.1.11 3.G.1.2 | 3.P.3.1 | NC.3.OA.8 |
| 4-5 | W.5.1 | 5.C&G.2.4 5.C&G.2.1 | 4.P.3.1 | NC.5.NBT.7 |
| 6-7 | W.7.3 | 6.H.1.1 6.G.1.4 6.G.1.4 | 7.P.2 | NC.7.G.4 |
| 8-9 | W.9-10.1 | 8.G.1.3 8.G.1 | EEn.1.1.3 EEn.1.1.4 | NC.MI.A-CED.4 |
| 10-12 | W.11-12.5 | AH2.H.2 | EEn.2.2 | NC.M1.A-CED.1 |