

**3**

SCIENCE PARENT GUIDE – UNIT 6

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| ***IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME*** | |
| **Heat** | |
| **DESCRIPTION** | |
| Third grade Georgia Standards of Excellence for Science will engage students in obtaining, evaluating, and communicating information about heat energy. Students will generate questions about how heat is produced and used. They will identify the sun as the primary source of heat and light for the Earth. Students will plan and carry out investigations to gather data using thermometers to produce tables and charts that illustrate the effects of the sun on different objects. Finally, they will use everyday tools to design and construct a device that will increase and decrease the warming effects of the sun on various materials. | |
| **KEY WORDS TO KNOW** | |
| **Heat-** the movement of thermal energy from hotter to cooler objects.  **Energy:** what is needed to do work or cause change  **Friction:** a force that releases heat when objects rub together  **Sunlight:** energy from the Sun  **Burning:** when there is a flame and a great amount of heat  **Thermometer:** a tool used to measure heat  **Sun:** the star at the center of the solar system that provides light and heat to Earth | **Tools:** objects that make a job easier  **Thermal Energy-** A form of energy that moves particles of matter  **Temperature -**the measure of how hot or cold something is  **Fahrenheit-** a standard temperature scale that defines the freezing point of water as 32° degrees and the boiling point of water a 212°  **Celsius-**the metric scale for measuring temperature that defines the freezing point of water as 0° degrees and the boiling point of water as 100° degrees  **AT HOME VOCABULRY STRATEGIES**  1. Read aloud with your child.  2. Use vocabulary words in daily conversations.  3. Build a word wall or window.  4. Play simple vocabulary games.  5. Relate words to real life experiences.  http://1.bp.blogspot.com/-QOn2S_p5PU8/Vg5eWgC54BI/AAAAAAAAPuU/lQnA-gp1UkM/s640/vocabulary.png |

SCIENCE PARENT GUIDE – UNIT 6

SCIENCE PARENT GUIDE – UNIT 1

**3**



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| **Heat** | | | |
| **Important Concepts**  **Addressed in this Unit** | **Sample Questions** | | **How You Can Help Your Child** |
| S3P1. Obtain, evaluate, and communicate information about the ways heat energy is transferred and measured.  a. Ask questions to identify sources of heat energy. (*Clarification Statement:* Examples could include, sunlight, friction, and burning).  b. Plan and carry out an investigation to gather data using thermometers  to produce tables and charts that illustrate the effect of sunlight on various objects. (*Clarification Statement:* The use of both Fahrenheit and Celsius temperature scales is expected)  c. Use tools and every day materials to design and construct a device/ structure that will increase/decrease the warming effects of sunlight on various materials.  (*Clarification Statement:* Conduction, convection, and radiation are taught in upper grades and should not be taught at this grade level). | 1. When you rub your hands together you produce heat. This is called…     1. Heat energy 2. Burning 3. Temperature 4. Friction   2. Which choice below is ***NOT*** a natural source of heat energy?  a. Lightning  b. Sunlight  c. Volcanoes  d. A stove  3. By looking at the thermometer, you can tell that the temperature is...    a. Above freezing  b. Blow freezing  c. At the freezing point of water  d. Above the boiling point of water  4. Which color absorbs the most heat from sunlight?  a. Red  b. White  c. Black  d. yellow  5. Which object below would hold in the most heat (an insulator)?  a. A soda pop can  b. A thick blanket  c. A metal pan  d. Aluminium foil | | **Digital Resources**  Science Curriculum STEMscopes or HMH via My Backpack Study JamsHeat<http://studyjams.scholastic.com/studyjams/jams/science/energy-light-sound/heat.htm>A variety of resources for the definition of heat, how to measure heat, how it is transferred, and thermometers.  * <https://billnye.com/the-science-guy/heat> * <http://www.scilinks.org/Harcourt_Hsp/HspStudentRetrieve.aspx?Code=HSP306>   **Brain Pop/Brain Pop Jr.**   * <https://jr.brainpop.com/science/energy/heat/> <https://www.brainpop.com/science/energy/heat/> |
| **CHANGES TO SCIENCE STANDARDS: Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.** | | | |
| **Science and Engineering Practices**  Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.  **Crosscutting Concepts**  Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas.  **Core Ideas**  Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology. | |  | |