

Lesson Plan

Grade(s)	Kindergarten
Content Area(s)	Science
Topic of Lesson	Shadows
Three Objectives	<p>1) Students will be able to orally list to the teacher the two major components required for the formation of shadows: a light source and an object to block the light.</p> <p>2) Working with a partner, students will be able to demonstrate to the teacher how shadows change in size and shape. Students will need to briefly orally explain how shadows change in shape and size depending on the location of the light source while using puppets to demonstrate this concept.</p> <p>3) Students will be able to orally describe to the class one unique example of a shadow found in nature. They will need to describe the object that the shadow represents as well as where they see it in their world.</p>
Technology standard	<p>Standard 1. Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity.</p> <p>Exploratory Skills and Expectations: Internet and Multimedia</p> <p><i>K-2: 1.9 Explain that the Internet links computers around the world, allowing people to access information and communicate.</i></p>
Curriculum Framework	<ul style="list-style-type: none"> ➤ Massachusetts Science and Technology/Engineering Curriculum Framework ➤ Earth and Space Science, Grades Pre-K-2 ➤ The Sun as a Source of Light and Heat <p><i>4. Recognize that the sun supplies heat and light to the earth and is necessary for life.</i></p>
Materials needed	<p>Students will be guided through the website by the teacher. The teacher will need a computer and an LCD projector. Internet access must be available to access the website. For the shadow puppets, students will need popsicle sticks, glue, cutouts made from construction paper, and crayons. Students will also need flashlights and access to a projector screen or window shade to display the shadows.</p>
Lesson Procedure, Web Site Use, and Technology Standard Instruction	<p>After gathering students into two rows in front of the projector, I will begin my lesson by first providing background knowledge. I will discuss shade and what its purpose is on a hot day. Then, I will explain that shade is created by shadows and that shadows are all around us.</p> <p>Once I have provided sufficient background knowledge and established why understanding shadows is important, I will use the website to teach the basics of shadows. I will begin by covering the technology component of the lesson. I will explain how a website allows us to use the Internet to access information to help us learn and to connect with others. I will also</p>

	<p>explain that the information is not directly stored on computers but rather on servers and that the Internet allows us to access the information stored on these servers. After explaining the purpose of the Internet and how it works, I will log onto the website. I will have the students listen to the audio on each page and then follow the instructions to the activities and links. For the interactive components, I will have students take turns using the computer with my guidance. Before moving on to the next page, I will ask the students follow up questions, such as “What is a shadow?” or “Can you see a shadow at night in the dark?” After viewing the content pages, I will guide the students through the quiz. I will ask each quiz question and then ask students to raise their hand to answer the question. If the student answers incorrectly, I will return to that content page to review the topic before moving to the next question. After finishing the quiz, I will tie the lesson back to the importance of technology by asking students to tell me how the Internet can be used for learning. This will conclude the use of the website in my lesson.</p> <p>After turning off the computer, I will explain to the students that they will be making shadow puppets to demonstrate their knowledge of shadows. I will first give directions. Then, I will assign each child to one of two tables set up with popsicle sticks, construction paper cutouts, glue, and crayons. Each table will have a different cutout shape. I will tell the students that they will have ten minutes to color their cutouts and then glue them to a popsicle stick. Once they are finished, I will assign each student a partner from the other table. I will give each pair a flashlight. Then I will give each pair five to ten minutes, depending on need, to come up with a story to perform for the class. Each skit will need to include a brief explanation of how shadows change in shape and size depending on the location of the light source, while demonstrating this concept using their puppets. After planning, students will come together in a semi-circle. Each pair will take turns performing for the class, using the flashlight and their two different puppet shapes to demonstrate their understanding of shadows.</p> <p>After each group performs, I will wrap-up the lesson with a review of shadows. I will ask the students to explain what a shadow is. I will then go around the circle and have each child describe one new example of a shadow found in nature, including the object that the shadow represents and where they see it in their world. I will write the examples on the board as each student takes a turn so that the class will be able to refer back to the examples throughout the day. After the discussion, students will break off into centers. While students are at centers, I will pull each child aside and have him/her list the two components needed for shadows to form: a source of light and an object to block the light. This will conclude my lesson and assessment on shadows.</p>
<p>How will students be assessed to make sure they</p>	<p><u>Objective 1</u>: Students will be able to orally list to the teacher the two major components required for the formation of shadows: a light source and an object to block the light.</p> <p><u>Assessment 1</u>: After the lesson, during centers, the teacher will individually</p>

<p>are able to perform the objectives?</p>	<p>evaluate each student. The teacher will ask each student to list the two major components required to form a shadow. Students will need to state that both a source of light and an object to block the light are needed to form a shadow.</p> <p><u>Objective 2:</u> Working with a partner, students will be able to demonstrate to the teacher how shadows change in size and shape. Students will need to briefly orally explain how shadows change in shape and size depending on the location of the light source while using puppets to demonstrate this concept.</p> <p><u>Assessment 2:</u> Given popsicle sticks and construction paper cutouts, students will create a skit demonstrating their knowledge of shadows. Students will need to incorporate into their skit a brief explanation about how the distance and direction of the light source creates changes in a shadow's shape and size. Students will also need to demonstrate this concept using their shadow puppets and a flashlight.</p> <p><u>Objective 3:</u> Students will be able to orally describe to the class one unique example of a shadow found in nature. They will need to describe the object that the shadow represents as well as where they see it in their world.</p> <p><u>Assessment 3:</u> While students are in the closing circle, each student will take a turn listing one unique example of a shadow in nature. Each example will need to include a description of the object that shadow represents and where they see it in their world. The teacher will record each answer on the chalkboard.</p>
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