



Georgia Department of Education

Students will realize time patterns in the day and night sky. Students will also compare and contrast groups of organisms. Students will apply knowledge to identify similarities and differences in diurnal and nocturnal animals.

Student Science Performance

Grade or course: Kindergarten

Topic: Day and Night, Plants and Animals

Title:

Time Patterns and Organisms

Performance Expectation for GSE:

SKE1 Obtain, evaluate, and communicate information about time patterns (day to night, and night to day) and objects (sun, moon, and stars) in the day and night sky.

- a. Ask questions about classify objects according to those seen in the day sky, the night sky, and both.
- b. Develop a model to communicate the changes that occur in the sky during the day, as day turns into night, during the night, and as night turns into day using pictures and words.

(Clarification statement: Students are not expected to understand tilt of the Earth, rotation, and revolution.)

SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.

- a. Construct an argument supported by evidence for how animals can be grouped according their features.
- b. Construct an argument supported by evidence for how plants can be grouped according to their features.
- c. Ask questions and make observations to identify the similarities and differences of offspring to their parents and to other members of the same species.

Performance Expectations for Instruction:

- Students will inquire about items seen in the sky at different times.
- Students will classify objects based on whether they are seen during the day, during the night or both.
- Students will use pictures and words to make a model to represent changes in the sky.
- Students will group animals and plants according to their features.
- Students will compare and contrast parents to their offspring as well as organisms in the same species.

Additional notes on student supports

Materials

Media about day and night: books, variety of pictures of local/common places during the day and/or night, day/night model (picture of the Sun and picture of the stars), Venn diagrams (hula hoops, yarn, etc.), day/night picture cards (ex. Sun, moon, flowers, butterflies, stars, owls, rainbows, constellations, etc.), blank index cards, drawing paper, drawing utensils, organism picture cards ((including parents and offspring pairs; seeds, seedlings, young and adult plants), books about diurnal and/or nocturnal animals, animal pictures attached to yellow yarn (animals out during the day) or black yarn (animals out during the night), classroom display sectioned as Day (Sun) and Night (Stars)

Students will continuously obtain, evaluate, and communicate information. This is not a linear process. Students will communicate through writing and discussions to allow for formative assessment. This benefits the teacher, student, and whole group to guide instruction to clarify misconceptions or extend content.

Engaging Learners

Phenomenon

Some things happen on earth in cycles such as the time pattern of day and night. Objects in the sky are observed and classified as those seen during the day, during the night, and during both. Changes occur in the sky

	<p>during the day, as day turns to night, during the night, and as night turns to day.</p> <p>Students will watch a time-lapse video of day and night, (or other time-lapse photos/videos). This clip is of an animation video showing the sky as it changes from day to night.</p>
	<p><i>Obtaining</i> Students will obtain information about Time Patterns from the video clip.</p>
	<p><i>Evaluating</i> Teacher will show students a variety of pictures of local/common places. Students will work in pairs to decide whether each picture shows an area during the day or night. Each student pair will hold up a day/night model. (Use a picture of the Sun on one side of a card and a picture of the stars on the other with both attached to a popsicle stick.) to indicate what the picture shows. Picture of Sun and Stars</p>
	<p><i>Communicating</i> Teacher and students will discuss observations that help them to know when it is day or when it is night. The discussion should include objects that students observe in the day sky, night sky, and both.</p>
Exploring	<p><i>Obtaining</i> Students will refer to the pictures from the <i>Engage</i> activity above, to obtain information about the similarities and differences of the day and night sky.</p>
	<p><i>Communicating</i> Students will explain placement of their picture cards in the Venn diagram. Students will share how they knew where to put each picture based on background knowledge, personal experiences, as well as information from the phenomena, picture books read, and/or day/night pictures shown.</p>
	<p><i>Evaluating</i> Students will complete a picture card Venn diagram sort activity. Hula hoops or yarn is used to make the Venn diagram to do this activity as a whole group. Some students can draw their own pictures on blank index cards to include in the sort activity and/or use pre-printed pictures.</p>
<i>Formative Assessment of Student Learning</i>	
<i>Explaining</i> Finalizing Model	<p><i>Obtaining</i> Students will refer to the completed Venn diagram to ensure understanding of and get more ideas about the similarities and differences of the day and night sky.</p>
	<p><i>Evaluating</i> Students will draw two pictures of the same scene of their choice (Some suggestions include their home, school, an area in their community, etc.). One picture should show what the area looks like during the day and the other should show what the same area looks like at night.</p>
	<p><i>Communicating</i></p>

	<p>Students will share their pictures with the class. Classmates will share what they notice about the two pictures including similarities and differences of objects seen in the sky.</p>
<p>Elaborating Applying Model to Solve a Problems</p>	<p>Phenomenon Pictures of Elephants during Day and Twilight</p> <p>Teacher will ask students about each picture:</p> <ul style="list-style-type: none"> ● Is this a picture taken during the day or during the night? ● How can you tell? ● What else can you tell me about this photo? <p>When a student responds that it is a photo of a mother and baby elephant, teacher will ask:</p> <ul style="list-style-type: none"> ● How do you know that it is a mother and baby? <p>Make a chart list of other questions students have about the picture concerning time of day clues or animal clues.</p> <p>Teacher will facilitate a discussion on how the animals have the same characteristics and what some of them are.</p> <p>Obtaining</p> <p>Teacher will play sound clips (without showing a video) of a sound that a diurnal animal makes (ex. robin chirping) and of the sound a nocturnal animal makes (ex. owl howling). Clips can be found online. Teacher should choose pairs of similar animals and/or animals in the same species, such as birds, insects, etc. Teacher will ask students to name the animals that make each sound and to ask when they would see those animals; during the day or at night.</p> <p>Once correctly identified, teacher will show students pictures of the animals and ask what they have in common. (number of legs, body covering, how they move, etc.)</p> <p>Teacher will also show students a pair of plants and facilitate a discussion on how they are similar as well as how they may be different. (flowers, leaves, size, etc.)</p> <p>Teacher will emphasize that plants and animals are grouped according to their characteristics.</p> <p>Communicating</p> <p>Teacher will provide each student with an organism (plant or animal) picture card. Teacher will tell students to get into two groups; one for plants and another for animals. Within each group, students will classify their picture cards based on physical features. Students may group animals based on body parts (ex. wings, tails, number of legs, etc.), body coverings (ex. feathers, hair, fur, etc.), color, how they eat and get food, etc. Students may group plants based on color, leaf shape, type, whether or not it has flowers/fruit, etc.</p> <p>Student groups will swap picture cards and repeat activity.</p> <p>*An extension would include method of movement for animals (ex.</p>

	swim, fly, slither, etc.) and/or habitat for plants and/or animals (ex. ocean, desert, forest, etc.).
	<p><i>Evaluating</i> Teacher will read a book about diurnal and/or nocturnal animals. Students will participate in an animal sort activity. Each student will have a picture of an animal on a necklace of either yellow (day) or black (night) yarn. Teacher will call out: Cockadoodle-doo and students with pictures of diurnal animals will begin to move around the classroom and mimic what those animals would do during the day. After some time has passed, teacher will turn out the lights to simulate night and students with pictures of nocturnal animals will be move around and mimic the activity of their animals.</p>
Evaluation	<p style="text-align: center;">Assessment of Student Learning</p> <p>In their Science journals/notebooks, students will use pictures and/or words to complete the following statements:</p> <p><i>Changes that occur in the day sky are:</i> <i>Changes that occur as day turns to night are:</i> <i>Changes that occur in the night sky are:</i> <i>Changes that occur as night turns to day are:</i></p> <p>Students will also draw a picture of a diurnal and nocturnal animal to be included on a classroom display that is divided into sections: day and night. Drawings must include objects found in the sky for the time of day the chosen animals are active. Students will present their completed drawings to the class.</p>
SEP, CCC, DCI	Science Essentials
Science and Engineering Practices	<ul style="list-style-type: none"> ● Asking questions ● Developing and using models ● Engaging in argument from evidence ● Obtaining, evaluating, and communicating information
Crosscutting Concepts	<ul style="list-style-type: none"> ● Patterns ● Cause and Effect ● System and System Models ● Structure and Function
Disciplinary Core Ideas	<p>From <u><i>A Framework for K-12 Science Education:</i></u></p> <p>ESS1.A Universe and Its Stars</p> <ul style="list-style-type: none"> ● Patterns of the motion of the Sun, moon, and stars in the sky, can be observed, described, and predicted. <p>ESS1.C History of the Planet Earth</p> <ul style="list-style-type: none"> ● Some events on Earth occur in cycles, like day and night... <p>LS1.A Structure and Function</p> <ul style="list-style-type: none"> ● All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems,

leaves, flowers, fruits) that help them survive, grow, and produce more plants.

LS1.B Growth and Development

- Plants and animals have predictable characteristics at different stages of development. Plants and animals grow and change. Adult plants and animals can have young.

Additional Supports for struggling learners:

The following supports are suggestions for this lesson and are not the only options to support students in the classroom. These supports target students that struggle with science material, this lesson or a previous lesson. These are generalized supports and do not take the place of IEP accommodations as required by each student’s Individualized Education Program.

General supports for the following categories:

<u>Reading:</u>	<u>Writing:</u>	<u>Math:</u>
<ol style="list-style-type: none"> 1. The teacher can have students match letters prior to reading to remind them of the alphabet. 2. The teacher can have students identify words that they know in the text as the class reads. 3. The teacher should remind students to use strategies when they are reading. 	<ol style="list-style-type: none"> 1. The teacher can provide practice for students in the area of writing both in context and practicing just letters. 2. The teacher can provide a sentence starter for the students. 3. The teacher should continually give encouragement to the students. 4. The teacher can provide constructive positive feedback during the writing process to help students understand the expectations. 	<ol style="list-style-type: none"> 1. Provide students with opportunities to interact with numbers. 2. The teacher can provide manipulatives to allow the students to count and interact with materials.

Supports for this specific lesson if needed:

Performance expectations for instruction:

1. The teacher should provide information to students in various formats to reach as many students as possible.
2. The students should be given adequate time to complete each part of the lesson.
3. The students should be allowed to express their knowledge in various formats.
4. The teacher should be sure to provide multiple ways for the students to communicate their knowledge of the material.

Engage:

1. The teacher should ask students to think about sunsets and sunrises (the students may have seen either of these at some point that they remember).
2. Then have students discuss what they have seen during the day and what they have noticed if they have been out at night.
3. The teacher may need to show the video more than once for students to observe the most important

pieces.

4. The teacher should lead a discussion about what the students noticed in the video.
5. The teacher may need to remind students of instructions during the assignment.
6. The teacher should have students give reasoning for their labels of day and night. The teacher can consider giving a card sort to let students sort different skies into day or night and then provide reasoning.

Exploring:

1. The teacher may need to use guiding questions to help students recognize patterns that they see in the sky during the day and during the night.
2. The students should be ready to justify their placement.
3. The teacher should use pre-printed cards for the Venn diagram sort activity. This will be less confusing for students than trying to also determine what other students are conveying in their drawings.

Explaining:

1. The teacher should consider giving students an organizer to record their answers from the Venn diagram.
2. The teacher should give students a location to draw the pictures of day vs night. Some students may need the teacher to provide an image of an area for the students to draw. If the teacher provides the day image, then have the student draw the night image.
3. The teacher should have clear and consistent guidelines for student discussions. This should make students feel more comfortable participating in the discussion.

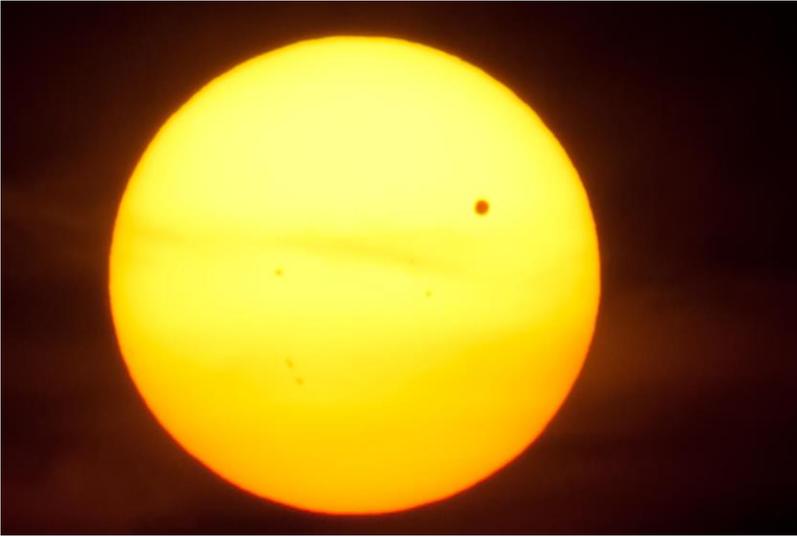
Elaborating:

1. The teacher should consider giving question stems to students to help with question generation.
2. The teacher should have clear and consistent guidelines for class discussions. This should make students feel more comfortable participating in the discussion.
3. The teacher may need to play the sound clips more than once for students to be able to guess what animal made the sound.
4. This sound activity may be difficult for students that have hearing deficits. These students may need to see the pictures and not have to guess at the animal but rather try to determine if that animal would reasonably be out at night or during the day.
5. The teacher may need to use guiding questions to help students group plants and animals.
6. The teacher should check for understanding as the students are grouping animals.
7. The teacher should have groups discuss why they grouped things the way they did. The groups may have done it very differently and having them discuss it can lead to more flexible thinking and help with future assignments.
8. The teacher may need to remind students of directions as they move through the assignment.

Evaluating:

1. The teacher should consider giving students multiple formats to communicate their knowledge. This could include drawing, writing or verbally explaining.
2. Students may need additional time to complete their assignment.

Pictures of Sun and Moon



Sun



Stars

[Return to Instructional Segment](#)

Pictures of Elephants



Mother and Baby Elephant during the Day



Elephant family at Twilight

[Return to Instructional Segment](#)