Science Kindergarten Unit 06 Exemplar Lesson 01: Identifying Day and Night

This lesson is one approach to teaching the State Standards associated with this unit. Districts are encouraged to customize this lesson by supplementing with district-approved resources, materials, and activities to best meet the needs of learners. The duration for this lesson is only a recommendation, and districts may modify the time frame to meet students’ needs. To better understand how your district may be implementing CSCOPE lessons, please contact your child's teacher. (For your convenience, please find linked the TEA Commissioner’s List of State Board of Education Approved Instructional Resources and Midcycle State Adopted Instructional Materials.)

Lesson Synopsis

Students will identify patterns associated with the changes between day and night and make illustrations as a way to record these observations.

TEKS

The Texas Essential Knowledge and Skills (TEKS) listed below are the standards adopted by the State Board of Education, which are required by Texas law. Any standard that has a strike-through (e.g., sample phrase) indicates that portion of the standard is taught in a previous or subsequent unit. The TEKS are available on the Texas Education Agency website at http://www.tea.state.tx.us/index2.aspx?id=6148.

K.8 Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

K.8B Identify events that have repeating patterns, including seasons of the year and day and night.

Scientific Process TEKS

K.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:

K.2D Record and organize data and observations using pictures, numbers, and words.

K.3 Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:

K.3B Make predictions based on observable patterns in nature such as the shapes of leaves.

K.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

K.4B Use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.

GETTING READY FOR INSTRUCTION

Performance Indicators

<table>
<thead>
<tr>
<th>Kindergarten Science Unit 06 PI 01</th>
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</thead>
<tbody>
<tr>
<td>Sort a selection of picture cards to identify the pattern of day and night. Communicate to others the event that is repeating.</td>
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<tr>
<td>Standard(s): K.3B, K.8B</td>
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<tr>
<td>ELPS: ELPS.c.1E, ELPS.c.3B, ELPS.c.3E</td>
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</tbody>
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Key Understandings

- Day and night is the result of the rotation of the Earth.
— How is day and night a repeating pattern?

- The Earth takes approximately twenty-four hours to complete one rotation.
- What is it called when the Earth is facing the Sun?
- What is it called when the Earth is not facing the Sun?
- It is day on the side of Earth that faces the Sun.
- How many times does the day-and-night pattern repeat in a 24 hour period?

Vocabulary of Instruction

- pattern
- Moon
- Sun
- Earth
- day
- night
- sunrise
- noon
- sunset
- repeat(ing)

Materials

- beach ball (or other large ball, 1 per class)
- book (about day and night, 1 per class)
- book (bedtime story, 1 per class)
- chart paper (per class)
- construction paper circle (black, 1 per student)
- construction paper circle (light blue, 1 per student)
- craft stick (1 per student)
- crayons (including white, per group)
- crayons or colored pencils (per group)
- glue (sticks, 1 per group)
- hula-hoops (for sorting day and night objects, 2 per class)
- index cards (3”x5”, labeled “day” and “night”, 1 of each per class)
- objects (used or seen at night and during the day, 1 per every 2 students)
- paddles (for demonstration, see Advance Preparation, per class)
- paper (plain, 1 sheet per student)
- robe (for teacher to wear, per class)
- slippers (for teacher to wear, per class)
- sticker (yellow dot, 1 per student)
- stickers (stars, number per student depends on the star size)
- stuffed animal (for teacher to hold, per class)
- tape (clear, per group)

Attachments

All attachments associated with this lesson are referenced in the body of the lesson. Due to considerations for grading or student assessment, attachments that are connected with Performance Indicators or serve as answer keys are available in the district site and are not accessible on the public website.

- Teacher Resource: Is It Day or Night? (see Advance Preparation, per class)
- Teacher Resource: Directions to Make Day and Night Paddles
- Handout: Day and Night Story (1 per student)
- Teacher Resource: Day and Night Pattern Pictures PI (1 set per student)
- Teacher Resource: Performance Indicator Instructions KEY

Resources

None Identified

Advance Preparation
1. Prior to Day, 1 copy and cut out pictures on the Teacher Resource: Is It Day or Night? For greater durability, it might be helpful to copy on cardstock and laminate. 

2. Prior to Day 2, gather objects for students to decide which hoop it belongs in – the hoop labeled “day” or the hoop labeled “night”. Some objects (pillow, toothbrush) could go with either day or night so might be placed in the intersection of the two circles. 

3. Prior to Day 2, gather materials to make day and night paddles and be prepared to construct each paddle for a demonstration to students. The blue and black circles could be pre-cut for students.

4. Copy in color, and cut out pictures on the Teacher Resource: Day and Night Pattern Pictures. For greater durability, it might be helpful to copy on cardstock and laminate.

5. Prepare attachment(s) as necessary.

**Background Information**

In this lesson, students learn to identify events with repeating patterns, such as day and night. Prior to this lesson, students may have already noticed patterns in the sky or changes to the sky. During this lesson, kindergartners will make observations on a more formal level. They will identify patterns associated with the changes between night and day and then make illustrations as a way to record their observations.

**INSTRUCTIONAL PROCEDURES**

<table>
<thead>
<tr>
<th>Instructional Procedures</th>
<th>Notes for Teacher</th>
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<tbody>
<tr>
<td>ENGAGE – Time for Bed!</td>
<td>NOTE: 1 Day = 30 minutes</td>
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<tr>
<td></td>
<td>Suggested Day 1</td>
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</tbody>
</table>

1. Put on a robe and slippers, and settle in a chair with a pillow or stuffed animal and a bedtime storybook. Explain to students that it’s time for a bedtime story and then everyone will need to go to sleep. Students might respond that it isn’t time for bed or it isn’t nighttime yet. 

2. Facilitate a discussion about why it isn’t time for a bedtime story. 
   Ask: 
   - Is it day or night when you are sleeping? Some young students may have to go to bed when it isn’t quite dark yet, but it is usually dark when they are sleeping through the night.

3. Instruct students to sit around the edge of the carpet. Put two hula-hoops in the middle of the carpet.

4. Take off the slippers and robe, and put them in one of the hoops. Put the stuffed animal and bedtime story in the same hoop.

5. Inform the students that these are things that some people use at night. Label the hoop with a card that says “night.” 
   Ask: 
   - What do we call the time that is not night? (Day)

6. Label the other hoop with a card that says “day”. 

7. Inform students that they will be looking at some pictures of objects (from Teacher Resource: Is It Day or Night?) and deciding if the pictures belong in the hoop labeled “day” or the hoop labeled “night”.

**Materials:**
- robe (for teacher to wear, per class) 
- slippers (for teacher to wear, per class)  
- stuffed animal (for teacher to hold, per class) 
- book (bedtime story, 1 per class) 
- hula-hoops (for sorting day and night objects, 2 per class) 
- index cards (3”x5”, labeled “day” and “night”, 1 of each per class)

**Attachments:**
- Teacher Resource: Is It Day or Night? (see Advance Preparation, per class)

**Instructional Notes:**
Some of the objects (or pictures of objects) could be day or night. These objects are included so students can learn about claims/justification and also about Venn diagrams.

Check out some books about night or the Moon and activities like children going to bed, children at a sleepover, or someone dreaming or imagining things in the dark.

Encourage children to paint or draw day or night pictures in the art center. Let students draw a picture...
EXPLORE – Is it Day or Night?

1. Students are still sitting on the carpet, so using “shoulder partners” will work for the next activity.

2. Pair students up, and give each pair a picture or object from your bag of day or night objects. Partners discuss what they have and when it is used or seen. They decide if the object or picture goes in the hoop labeled “day” or “night”. Some objects (pillow, toothbrush) could go with either day or night and so might be placed in the intersection of the two circles.

3. Give the students a few minutes to discuss. Walk around and listen to conversations, clarifying, guiding, or redirecting as needed.

4. After a few minutes, each pair shares with the class. Students tell what they have and what it is used for or when it is seen. They should decide which hoop to put it in and justify their choice.

5. Briefly discuss each picture and choice of placement, as needed.

6. When every group has shared, review the items in each hoop, and discuss any that may need to be changed and why.

7. Instruct students that you will put some of the objects and pictures in a place where they can use them during center time.

EXPLAIN

1. Demonstrate how to make a night and day response paddle by putting one together in front of the students (see Advance Preparation).

2. Put the yellow dot in the middle of the blue circle, and make it look like the Sun in the sky. Write the word “day” near the bottom of the circle. Put the sticker stars on the black circle, and write the word “night” near the bottom of the circle with a white crayon. Tape one end of the craft stick near the middle of the back of one of the circles. Glue the two circles together. The craft stick should stick out like a handle, and the paddle will look like a big lollipop with night on one side and day on the other.

3. Prepare and display a chart page showing the steps for students’ reference. Model using the chart as you follow the directions to make your sample.

4. Give students their materials, and assist them as needed. (Early finishers who do it correctly can become your “experts” and help those who need extra assistance.) Make sure students also write their names on one side.

5. Discuss the day/night pattern. Explain to the students that it is daytime when the part of the Earth where we live is facing the Sun. It is nighttime when the part of the Earth where we live is facing away from the Sun. The Earth is always turning so we experience this pattern: day, night, day, night and so on. It takes approximately 24 hours for

Materials:
- objects (used or seen at night and during the day, 1 per every 2 students)
- hula-hoops – from previous activity (for sorting day and night objects, 2 per class)
- index cards – from previous activity (3”x5”, labeled “day” and “night”, 1 of each per class)

Attachments:
- Teacher Resource: Is It Day or Night? (from previous activity)

Instructional Note:
Put the objects in a center for students to sort again.

Suggested Days 2 and 3

Materials:
- paddles (for demonstration, see Advance Preparation, per class)
- sticker (yellow dot, 1 per student)
- stickers (stars, number per student depends on the star size)
- construction paper circle (light blue, 1 per student)
- construction paper circle (black, 1 per student)
- craft stick (1 per student)
- tape (clear, per group)
- glue (sticks, 1 per group)
- crayons (including white, per group)
- chart paper (per class)

Attachments:
- Teacher Resource: Directions to Make Day and Night Paddles
the Earth to complete one day/night rotation.

6. Students can turn the craft stick to show day, night, day, night, day, night. Facilitate a discussion.
   
   - Can you show me how many days and nights are in one week? After some students share their ideas, refer to the calendar and "act it out" with the paddles.
   
   - How is day and night a repeating pattern? We know because of the Earth’s rotation; we will have daytime when our place (city, town or house) on Earth faces the Sun and nighttime when we are not facing the Sun.

7. Collect the student paddles, and save them for the Elaborate section.

Check For Understanding

EXPLAIN – Acting Out The Day and Night Pattern

Suggested Day 4

1. Use a space that is large enough for students to make a large circle.
2. Place a beach ball in the center of the circle. Label it “Sun”.
3. Inform students they will stand so their left hand is toward the lamp. (One way to do this is to have students make an “L” with their thumb and forefinger, and then extend that arm toward the beach ball.)
4. Demonstrate the process of turning (shown in the diagram below) before students get up to practice.

Materials:
- beach ball (or other large ball, 1 per class)
- book (about day and night, 1 per class)

Instructional Notes:
The teacher will need to demonstrate standing with the left hand toward the Sun and turning counterclockwise. Students may not understand the terms “counterclockwise” or “quarter turn”, but once they see what the teacher is doing they will be able to follow along.

Science Notebooks:
Allow time for students to share their reflections about “the pattern of day and night”.

5. Say:
   - In this position, you are the Earth at “sunrise”.

6. Now, have them turn a quarter turn counterclockwise so they are facing the Sun.
7. Say:
   - This position, when we are facing the Sun, is “daytime”. When the Sun is directly overhead, it is about noontime.
8. Turn a quarter turn counterclockwise (so their right hand is facing the Sun).
9. Say:
This position, when we are turning away from the Sun, is “sunset”.

10. Complete the turn (moving counterclockwise), so their back is toward the Sun.

11. Say:

   - In this position, the Earth is not facing the Sun. We call this is “nighttime”.

12. Students should turn again to practice the pattern of day and night. As they turn each quarter turn have them say “sunrise, daytime, sunset, nighttime” so they understand and identify the pattern of day and night and what it means.

13. Facilitate a discussion about how the day and night pattern takes 24 hours because that is how long it takes for the Earth to make one complete turn (rotation on its axis).

14. Read a story about day and night.

15. Ask:

   - What is it called when the Earth is facing the Sun? **Daytime**
   - What is it called when the Earth is not facing the Sun? **Nighttime**
   - How many times does the day-and-night pattern repeat in a 24 hour period? It happens only one time in a 24 hour period. **Daytime and then nighttime. The number of hours of light and dark will vary during the year.**

### ELABORATE - Day and Night Story

1. Tell a simple story to let students practice using the paddle. Read another book about day and night, the story from the Handout: **Day and Night Story**, or make up one of your own. Let the students use their paddles to interact as you read. They should change their paddle from day to night when they hear something in the story to indicate one or the other, or you can pause after each sentence and let them show you if they think it is day or night.

2. Distribute a piece of plain paper to each student.

3. Say:

   - You will draw a picture of yourself showing something you do during the day.

4. Allow time for students to complete this picture.

5. Explain that they will draw a picture at home. They will draw a picture showing something that they did at night. If you think some students may not have coloring materials at home, give the class time to color their pictures at school tomorrow.

### Materials:
- book (about day and night, 1 per class) – Optional
- paper (plain, 1 sheet per student)
- crayons or colored pencils (per group)

### Attachments:
- Handout: **Day and Night Story** (1 per student)

### Check For Understanding:
The drawing provides an opportunity for a formative assessment.

### Instructional Note:
If you think some students may not have coloring materials at home, give students time to color their pictures at school tomorrow while students are completing the Performance Indicator.
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1. Refer to the Teacher Resource: Performance Indicator Instructions KEY for information on administering the assessment.

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<td>Teacher Resource: Performance Indicator Instructions KEY</td>
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Is it Day or Night?

<table>
<thead>
<tr>
<th>Pillow</th>
<th>Sun</th>
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<td>Pillow</td>
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<tr>
<td>Breakfast</td>
<td>Stars</td>
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<tr>
<td><img src="image" alt="Breakfast" /></td>
<td><img src="image" alt="Stars" /></td>
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<tr>
<th>Fireworks</th>
<th>School</th>
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<th>Playtime</th>
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<tr>
<td><img src="image" alt="Flashlight" /></td>
<td><img src="image" alt="Playtime" /></td>
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</table>
Lunch  
Toothbrush  

Walking a Dog  
Taking a Bath  

Pajamas  
Use a Night Light  

Directions to Make Day and Night Paddles

Tape the craft stick to the back of the “day” disk, and then glue the two disks together.
Day and Night Story

It was still dark outside when his dad packed the car and the family left the house. Sammy fell asleep as they drove away from the quiet neighborhood. He woke up once and saw bright headlights, so he closed his eyes again.

When he woke up again, he saw black and white cows in the field and bluebonnets along the side of the road. Sammy was feeling hungry, too. His mom gave him a sandwich to eat in the car. It was a very long trip.

When Sammy’s family finally got to his grandparent’s house, it was time for supper. After they ate, everyone sat on the porch listening to the crickets and watching for shooting stars.

Sammy took a bath and brushed his teeth, and then he went to bed.

It seemed like he had just closed his eyes when Sammy’s grandfather woke him up for an early morning fishing trip. They fished until the Sun came up. Then they ate some biscuits that his grandmother had packed in a bag for them. After a while, they began to sweat in the heat, so they took the fish that they caught back to the house to cook for lunch.
Day and Night Pattern Pictures PI

Performance Indicator Instructions KEY

Performance Indicator

- Sort a selection of picture cards to identify the pattern of day and night. Communicate to others the event that is repeating. (K.3B; K.8B) 1E; 3B, 3E

Attachments:

- Teacher Resource: Day and Night Pattern Pictures PI (1 set per student)

Instructional Procedures:

1. This Performance Indicator could be done on an individual basis, in small groups or as a whole class.

2. If using the Teacher Resource: Day and Night Pattern Pictures PI, each student should have their own pictures to use for the activity. The pictures need to be copied in color and cut out.

3. Distribute the Day and Night Pattern Pictures. Explain to students that they are to arrange the pictures in order to show the repeating pattern of sunrise, daytime, sunset, and nighttime.

Instructional Notes:

The Performance Indicator could be achieved by students identifying the pattern kinesthetically (as they did in the Explain activity), using a drawing to identify the repeating pattern of day and night, or through the use of a set of pictures, such as the Teacher Resource: Day and Night Pattern Pictures PI (where the pictures are placed in an order identifying day and night).

Since the students are demonstrating their understanding of identifying the day and night pattern, they do not need to glue the cards down. If printing is limited, it is suggested that 3–4 copies are made and the teacher assesses in a small group setting.