

Name \_\_\_\_\_



## Hands-On Activity

# Observe the Pattern of the Sun

**Materials** • drawing paper

## Ask a Question

How does the sun appear to move across the daytime sky?

## Test and Record Data

### Step 1



Choose a time in the morning.

Record the time.

*Check children's work.*

### Step 2

Go outside. Draw a picture to record the position of the sun. Be sure not to look directly at the sun.

### Step 3

Look for an object that makes a shadow. Draw a picture of the object and its shadow.

*Children should draw a picture that shows the morning sun, an object, and the shadow made by the object.*

## Hands-On Activity individuals 10 minutes for each observation over 2 days

# Observe the Pattern of the Sun

## 3D Learning Objective

### SEP Analyzing and Interpreting Data . . . . .

Children explore the sun's apparent movement across the daytime sky. They will use their observations to make a claim that answers their question.

**Suggested Materials** drawing paper, clock

## Preparation

Try to arrange times for children to observe the sun's position in the morning, at noon, and in the afternoon on two different days.

## Activity

As a class, view the video. Then discuss the question that will need to be answered. Have children record the question.

**STEP 1** If necessary, review how to read a clock and record times to the nearest hour.

**STEP 2** Be sure to tell children not to look directly at the sun.

### DCI The Universe and its Stars . . . . .

Guide children to focus on important features in their drawings, such as the sun, an object, and the object's shadow. **Ask: What is the purpose of the pictures you will draw?** *The pictures need to show the position of the sun and the position of a shadow.*

**STEP 3** Guide children to show the location and approximate size of the shadow. Suggest children look for an object that is permanent so it will be in the same place when they go outside later in the day.

*Hands-On Activity, continued*

**DCI** **The Universe and its Stars** .....

**STEP 4** Have children make all three observations in the same location and facing the same direction to ensure they can see patterns in their series of pictures. **Ask:** Why is it important to make all of your observations in the same location? **It will help compare differences in the location of the sun and the size and shape of the shadow.** Assist children in recording the times of day they go outside and observe.

**CCC** **Patterns** .....

**SEP** **Analyzing and Interpreting Data** .....

**STEP 5** Guide children to use their observations and data to identify patterns. **Ask:** How can observing again on another day help you make a claim about a pattern? **Observing again will help see if there is a pattern in how the sun appears to move across the sky.**

### Claims, Evidence, and Reasoning

Children should make a claim that the sun appears on the same side of the sky every morning, passes overhead at noon, and appears on the other side of the sky every afternoon. They should cite evidence that they observed the same pattern on two different days.

#### Scoring Rubric for Hands-On Activity

<b>3</b>	States a claim supported with evidence about the pattern of how the sun moves in the sky
<b>2</b>	States a claim somewhat supported with evidence about the pattern of how the sun moves in the sky
<b>1</b>	States a claim that is not supported by evidence
<b>0</b>	Does not state a claim and does not provide evidence

#### Step 4

Repeat steps 2 and 3 at noon and again in the afternoon. Compare the position of the sun and the shadows at the different times of day.

Children should draw a picture that shows the noontime sun overhead, an object, and the shadow made by the object.

Children should draw a picture that shows the late afternoon sun, an object, and the long shadow made by the object.

#### Step 5

Do the activity again another day. What patterns do you see?

**Make a claim that answers your question.**

**Sample answer:** The pattern of the sun is that it appears on one side of the sky in the morning, overhead at noon, and on the other side of the sky in the afternoon. This pattern repeats day after day.

**What is your evidence?**

**Sample answer:** My evidence is that I observed the sun at different times of the day on different days and found the same pattern.