



LESSON PLAN

PATTERNS IN THE SKY GRADES K-2

SUMMARY

Students will observe, describe and make predictions about the sun's movement in the sky. Duration: 30 minutes (initial lesson).



1-ESS1-1. Use observations of the sun, moon and stars to describe patterns that can be predicted.

Science & Engineering Practices

Analyzing and Interpreting Data

Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording and sharing observations.

Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.

Connections to Classroom Activity

- Students observe the sun daily, collect data, describe the patterns they see and answer questions related to the patterns.

Disciplinary Core Ideas

ESS1.A: The Universe and its Stars

Patterns of the motion of the sun, moon and stars in the sky can be observed, described and predicted.

Connections to Classroom Activity

- Students make observations of the sun to identify patterns, record daily data and make predictions about what will happen based on the data they collected.

Crosscutting Concepts

Patterns

Patterns in the natural world can be observed, used to describe phenomena and used as evidence.

Connections to Classroom Activity

- Students use their observations, data and predictions to identify and describe patterns in the behavior of the sun, moon and stars.



ENGAGE

Draw or display a simple pattern on the board. Ask students to think about what they see. Turn and talk to your partner about what you notice. Allow a short time for discussion, then call on partners to share their observations. When the word “pattern” is shared, say; “That’s a good observation, this is a pattern. But what makes it a pattern?” Take student responses. If necessary, lead them to the conclusion that it is a pattern because it repeats. Add to the pattern on the board.

Tell students that today we are going to look for patterns in something we see every day: the sky. We will observe the movement of the sun, look for patterns and make a prediction.



EXPLORE

The students will explore the sun’s pattern of movement throughout the school day and record their observations on the Sun Movement Tracker.

Caution: Do not allow students to look directly at the sun. Students should wear eye protection and only glance at the sun briefly.

Bring the students outside with their Sun Movement Tracker and look for the position of the sun. Students will record their observations. They should also draw in some landmarks on the sun tracker such as trees and buildings, so they can better orient themselves in their next observations.

Repeat the above routine two additional times in the same day. The further apart the times, the easier it will be to see the position of the sun has changed. Ideally 9am, noon and 2pm.



EXPLAIN

After three observations are completed, students are placed in groups of four to describe and discuss the patterns they observed.

MATERIALS

- Sun Movement Tracker PDF
- Sunglasses for students
- Pencils
- Clipboards

DIY Activity

- Different colored chalk
- Sunny outdoor area

Based on what was observed about the sun's movement in the sky, ask the students what we can predict about what will happen tomorrow?

Explain that the sun follows the same pattern each day. It rises in one place, travels across the sky and sets in another place. The moon and stars also move across the sky in the same pattern. To explore that further, use the Generation Genius video.



ELABORATE



WATCH THE GENERATION GENIUS PATTERNS IN THE SKY VIDEO AS A GROUP

Facilitate a conversation using the Discussion Questions.



EVALUATE

Students can play the online Kahoot! quiz game located below the video which provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz or the exit ticket questions. All these resources are located below the video in the Assessment section.



EXTENSION

For more advanced students, plan investigations to recognize other patterns in nature, such as the phases of the moon. Motivated students can research careers related to space and astronomy.





SUN MOVEMENT TRACKER

Record the time and position of the sun at each observation.
Write the corresponding letter on the sky.

1st Observation at ____:____ = A

2nd Observation at ____:____ = B

3rd Observation at ____:____ = C

