

Follow the Sun - Post

Assessment
Cross-curricular

observation
Languages

Big Ideas

50 minutes

Changes occur in daily and seasonal cycles.

Changes in daily and seasonal cycles affect living things.

Specific Expectations

1. Follow established safety procedures during science and technology investigations (e.g. never look directly at the sun; wear a hat and sunscreen when working outdoors) (2.1);
2. Investigate the changes in the amount of light from the sun that occur throughout the day and year (2.2);
3. Describe changes in the amount of heat and light from the sun that occur throughout the day and the seasons (3.3);
4. Describe and compare the four seasons (e.g. in terms of amount of daylight, type of precipitation and temperature) (3.4).

Description

Track the changes in the sun's position in the sky throughout the seasons.

Materials

South-facing window with direct sunlight
Small mirror
Masking tape
Stickers

Safety Notes

Remind students to never look directly at the Sun. Its bright light can damage their eyes.

Introduction

Discuss with the students any patterns they notice in the amount of light/dark throughout the year (ex. longer days in the summer and warmer weather, shorter days in winter and colder weather). What causes these changes? Where does the Sun rise? Where does it set? Where is the Sun at noon? Is it in the same place for each of the seasons, or does it change?

Action

1. Choose a Southern window with direct sunlight, which will remain unblocked throughout the year.
 2. Place a very small mirror on the windowsill and adjust it so the sunlight is reflected onto a clear area of the ceiling. A mirror only an inch across is big enough. It is best to be able to tape the mirror there permanently, but if it's not possible, mark the mirror's position with masking tape so you can put it in the exact same spot each day. (If the reflection from the mirror becomes distracting during the rest of the day, cover it up with a sheet of paper.)
 3. Once or twice a week, at exactly the same time of day, mark the location of the Sun's reflection on the ceiling with a sticker or a piece of masking tape (watch out for Daylight Saving Time – adjust the time so that you always make measurements in the same time reference, Standard Time.)
 4. Record the date and time of the observation on the sticker or masking tape. After a year of observations, the stickers should form a figure-eight shape known as an analemma.
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Consolidation/Extension

Students can extend their observations outside of school by comparing the Sun's rising and setting locations to landmarks around their homes, and noticing how the locations change throughout the year. (Sun rises and sets further North in the summer, and further South in the summer.)