Seasons and Light in the Arctic - Teacher Guide

Setting the Stage



How do people around the world experience the seasons and light? As the Earth rotates around the sun at a tilted axis of 23° geographical locations based on latitude experience different seasons and amounts of daylight. In the Arctic, the seasons and daylight are very different. During Northern Hemisphere summer the Arctic experiences constant light and during the Northern Hemisphere winter the Arctic experiences complete darkness. The MOSAiC Expedition team studied many climate processes that are greatly impacted by the seasons and daylight experienced in the Arctic.

This activity explores why we have seasons and changing daylight throughout the year by graphing different daylight hours around the world. Students will have the opportunity to explore why the Arctic's seasons and daylight are different from other places in the world.

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Instructional Overview	
Grade Level	Middle/High School
Instructional Time	60 minutes *(total time needed)*
Lesson Driving Question	How do we understand the Arctic light and seasons?
What Students Will Do	Learn about how seasons and light are different around the world.
Materials	❏ Seasons and Light Powerpoint ❏ Computers or internet accessing devices ❏ Worksheet
Material Preparation	❏ Test web links

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Instructions

1. Present the Seasons and Light Powerpoint.
2. Watch a YouTube video that visually explains why the Earth has seasons and what it was like for scientists to work in the Central Arctic during Polar Night.
3. Have students fill out the 'Introduction Section' of the worksheet.
4. Have students log on to computer devices to fill out the worksheet using this website: https://jan.moesen.nu/daylight-calculator
5. After filling out the worksheet, have students pair and share graphs and talk about what they have learned.