Sea Ice: The Earth's Air Conditioner Experiment

Materials Needed:

- White and Black Paper of similar thickness
- 2 ice cubes
- A heat lamp or direct sun
- Timer

Step 1: Set Up

Cut a square out of each piece of paper.
Under the heat lamp or sun, place the two ice cubes down. Place the dark coloured paper over one and the white paper over the other.

Step 2: Observation

Start a timer and have students watch to see which ice cube melts quicker.

Additional Resources:
Understanding Glacier Melting
Polar Bears and Arctic Sea Ice
Climate Change for Kids
WWF Arctic Information
Polar Bear Tracker

Step 3: Dicussion

Ask students:

- **Why did the ice covered by the dark paper melt faster?**
  - Dark colours absorb heat. White reflects heat off of itself while black and darker colours will absorb those wavelengths.
- Explain that the ice cube covered by dark paper is ocean without glaciers and icebergs and the white paper represents oceans with ice coverage.
- Show the students the two pictures included in this document
  - **Which of these oceans would probably be warmer and absorb more heat?**
    - Photo 1
- Explain that sea ice helps keep the water in the oceans cool and actually helps keep the entire world cooler.
  - **What do you think would happen if all of the ice in the Arctic and Southern Oceans melted?**
    - The world would get warmer, which would cause more sea ice to melt. Animals like polar bears and seals NEED sea ice in order to live.
- Ice acts as a global air conditioner and helps keep the planet cool by reflecting heat back into space rather than absorbing it into the water.

Additional Guiding Questions:

- What is causing sea ice to melt?
- What are greenhouse gases?
- How can we help reduce greenhouse gas emissions and the loss of sea ice?

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Photo 1:

Photo 2:

PC: the World Wildlife Fund