



Earth Reflects

Learn the importance of albedo and melting glaciers.

Activity Guide

Use mittens to investigate **albedo**, or the amount of heat that is reflected from a surface. Because darker surfaces absorb more heat the melting occurring in the Arctic increases as the ice caps disappear!

Try This!

Step 1: Put on one blue felt mitten and one white felt mitten.

Step 2: Put your hands under the lamp.

Step 3: Observe how your hands feel.

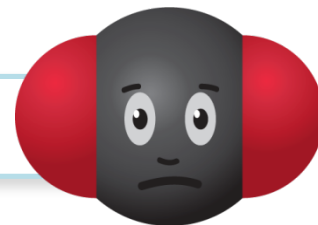
Do you notice a temperature difference between the mittens?



Climate Connection

Albedo, the amount of heat reflected from a surface, is partly determined by color. High albedo areas, such as the polar ice caps, reflect a lot of heat while lower albedo areas, like the oceans, absorb more heat. Albedo plays an important role with the rates of melting in the Arctic.

The role of albedo in climate change is an example of a positive feedback loop.



Turn the page over to learn more!

What's Happening?

The surface of the blue mitten is absorbing more heat than the white mitten; this is why your hand felt warmer under the blue mitten.

Heat from the sun, or **solar radiation**, is either absorbed by the surface of the Earth or reflected away from it. The amount of reflection, or **albedo**, is determined by the color of the surface. High albedo areas, such as the polar ice caps, reflect a lot of heat while lower albedo areas like the oceans absorb more heat.

Surface albedo plays an important role with regards to the current rate of climate change. As the surface of the Earth heats up, areas that were once covered in white reflective ice are now melting to become the darker, less reflective color of the surrounding ocean. The darker colored ocean then absorbs more heat, which encourages more melting of the ice sheets. This is called a positive feedback loop.

This picture shows the difference between the bright white ice and the darker colored land and sea. Which surface do you think is reflecting more heat?

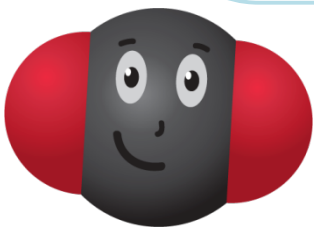


Photo by Anker Weidick, USGS Woods Hole Science Center

Climate Detective Challenge

What is one place where you can feel the effect of albedo?

Find the answer to this question on the Activity Map!

