



Smartphone Science in the Park - Albedo

[requires an Android Phone]

Age Group: Older kids and adults

Description: Albedo is a measure of reflectivity. It is the ratio of the solar radiation reflected by a surface to the total incoming solar radiation. The higher the value, the more energy is reflected. Surfaces that have a low albedo such as rocks or water are dark colored and will absorb more incoming solar radiation. High albedo surfaces are light, such as snow, ice, or sand, and reflect most of the incoming solar radiation back into the atmosphere. Albedo plays a role in predicting weather and global climate. In this activity, you will explore the albedo of surfaces throughout the park.

Procedure:

1. Download the free and no Ads app [phyphox app](#) from the Google Play Store.
2. Start the phyphox app. Read and acknowledge the dialog box to continue.
3. Under Raw Sensors, select Light, select Simple
4. Click the play button to start.

5. Wave your hand in front of the camera. You should see the value change. If not, try the other camera. If you have verified it's working then proceed to each of the sites (see map). Click pause for now.
6. When you have reached a site, unpause the app. Turn your phone to face the ground and record the value under "outgoing". You might need to hold the phone high so you can see the screen from below.
7. Now face your phone toward the sky and record the value under "incoming".
8. Note the canopy (clear, cloudy, tree cover, etc) and the surface (grass, sand, asphalt, snow, water, etc)
9. The Albedo = outgoing/incoming x 100%

Observations:

site	canopy	surface	outgoing	incoming	Albedo
1					
2					
3					
4					
5					

Challenge: Visit [Adopt a Pixel](#) to participate in a land cover campaign through GLOBE Observer.

Want to learn more about GLOBE Observer? Visit [Palmyra Cove GLOBE Observer](#).

