

SEASONS

Session 4: Sun Angle and Energy

Activity: Modeling Light from the Sun

In this activity you will use the littleBits light sensors to model sunlight hitting the ground at different angles. You will explore how Sun angle affects the amount of energy we receive from the Sun (and therefore, temperature).

A. Collect data:

Complete this table with your group:

Sun Angle (in degrees)	Intensity of Light (number you see on the littleBits sensor)
90°	different for each group
60°	different for each group
30°	different for each group
10°	different for each group

B. Compare and analyze:

At which Sun angle is the light most intense?

90°

When sunlight is more intense, the temperature will be (warmer / colder).

warmer

At which Sun angle is the light least intense?

10°

When sunlight is less intense, the temperature will be (warmer / colder).

colder

C. Record your ideas:

Based on **what we have learned so far**, explain **why** you think it is warmer in the summer than in the winter.

Try to connect what you have learned about

- (1) how the Sun appears to move in the sky during different seasons;
- (2) how the Earth's axis affects the mid-day Sun angle; and
- (3) how the Sun's angle in the sky affects the intensity of light we receive.

It is warmer in the summer because the hemisphere is tipped towards the

Sun, which results in a higher sun angle. Higher sun angles produce more

intense sunlight, and therefore more concentrated energy (and warmth).