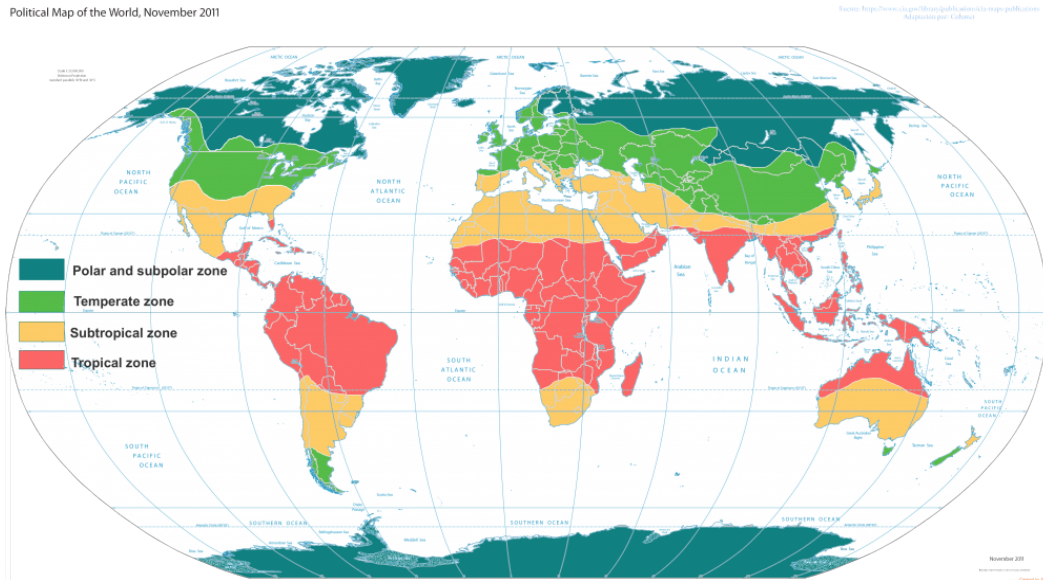


An At-Home STEM Lesson Plan Crafted by BGCharlem STEM Specialist Chaelee Dalton



This week, we continue our unit on climate and climate change! Today we will build on our lesson defining climate last week and focus on learning about different climate regions around the world and why the climate is different in different parts of the world. Next week, we will spend more time learning about climate change, why it matters, and how it is measured.

If your child cannot read, read the text out loud to them. Ask them the questions and have them respond and/ or solve on a separate sheet of paper. If your child can read, simply give them the second page of this handout and have them read the text out loud or in their head.

Materials: Blank paper, pen or pencil, internet access/YouTube, flashlight/phone flashlight

Addresses NGS Standards:

K-PS3-1

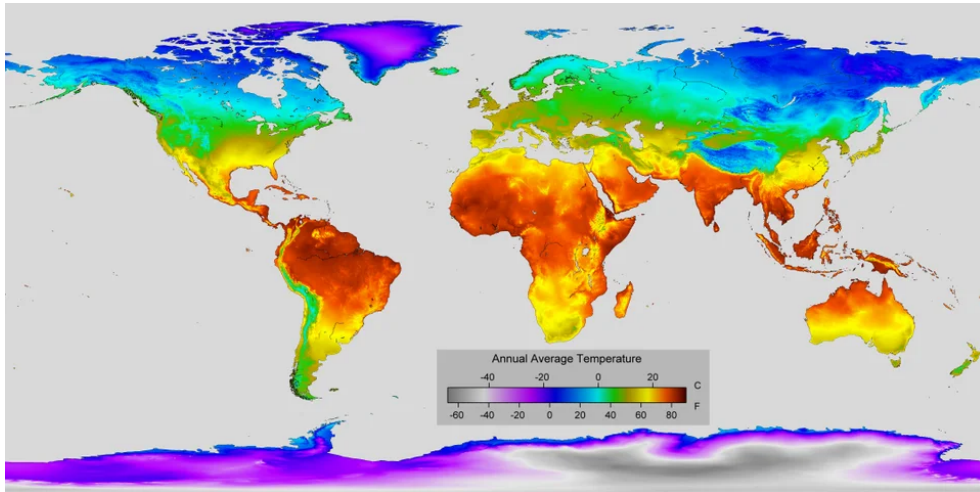
1-ESS1-1

3-ESS2-2

4-ESS2-2

5-ESS2-1

Climate Regions of the World



Do you remember this map from last week? What do the different colors represent? Do you notice any patterns or trends from the colors?

Write on a separate piece of paper or below:

I think the different colors represent _____ because _____ . One pattern/trend I notice from the colors is _____ .

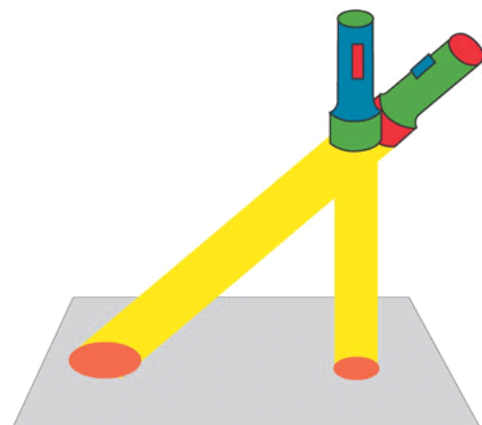
This map is an *average temperature* map of the world, where the hottest temperatures are red and orange, and the coldest temperatures are white, purple, and blue. We see that the temperature is typically lower/colder at the top and bottom of the map, and the temperature is typically higher/hotter in the middle of the map.

Average temperature is a big factor in determining different **climates** of different regions of the world. We learned last week that **climate** is the **typical weather of a region**. From the map, we can see that climates are affected by their location on the earth.

But **why** do the regions in the middle of the map typically have the highest temperatures?

Activity: Get a flashlight or use the flashlight on your phone. Point the flashlight directly at a wall. Then, without changing the distance from your arm to the surface, tilt the flashlight or phone.

Think: How does the **area** of light on the wall change when you tilt it? How does the **brightness** of light on the wall change when you tilt it?

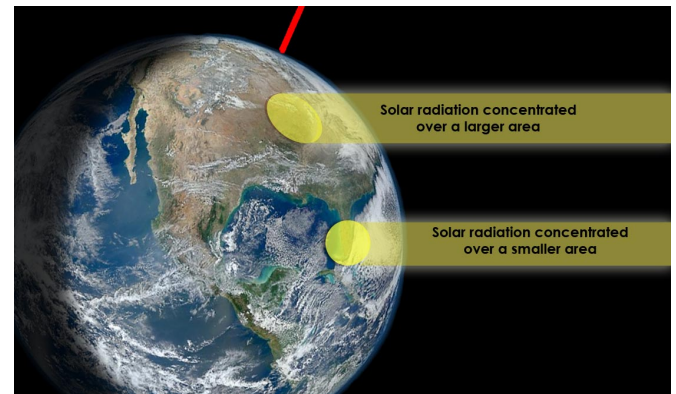


When the flashlight is pointed more directly, the **area** of the lit-up surface is **smaller and brighter** than when the flashlight is tilted.

You just simulated the light from the sun on different parts of the earth!

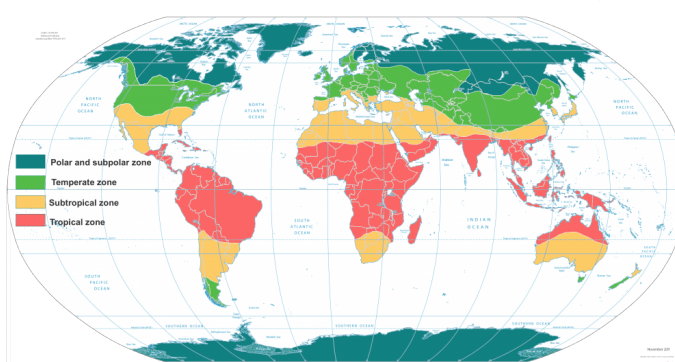
The earth is **tilted** when compared to the sun, so the sun's light hits the middle of the earth or equator directly and the sun's light hits the top/bottom of the earth at an **angle**.

This means the light at the middle is **brighter** than the light at the top and bottom of the earth.



Most of the world's **heat energy**, which determines its temperature, comes from the **light energy** from the sun. So, where the light is **brighter** and **more concentrated** near the equator, the middle of the earth, the temperature is **higher**.

Political Map of the World, November 2011



Average temperature is the most important factor in determining **climate regions** of the world, although other weather aspects play roles, like precipitation, or rain/snow.

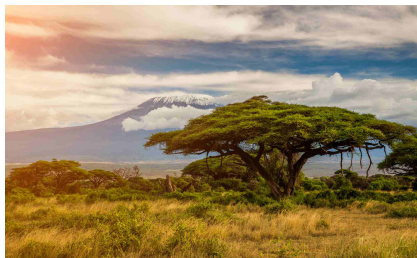
The main climate regions of the world are **polar** (dark green), **temperate** (green), **subtropical** (yellow), and **tropical** (red).



Polar



Temperate



Subtropical



Tropical



Which climate zone would you like to live in? Pick one climate zone you would like to live in and find out one thing about the typical weather in that zone by looking it up [here](#).

I would like to live in a _____ climate because _____.

The weather in the _____ climate is typically _____.