

# Cloudy with a Chance of Science!

## Week 3: Grades 6-8

### Day 3: Building a House Right for the Climate

#### Teacher/Parent Background:

Understanding short term weather conditions compared to atmospheric conditions averaged over a longer period of time helps students interpret cycles, patterns, and natural events on Earth. Students have had prior experience with the weather vs. climate component of this concept in fourth grade where students collected, analyzed, and interpreted data to explain weather and climate patterns.

We are going to go beyond interpreting simple weather maps, so that students must differentiate between weather and climate by compiling and making generalizations about weather data and trends (repeated patterns) for a longer period of time to infer climate conditions for specific regions. Today's activities we will focus on 3 main concepts:

- Weather refers to the daily environmental conditions we experience around us.
- Climate refers to the average conditions in a place over a longer period of time.
- Weather can be observed each day, whereas climate must be observed over time.

**Overview:** In this activity, adapted from Teachengineering.com, students will use their knowledge of the components of climate to build a house to withstand the characteristics of a specific climate region.

#### Related Standards:

Analyze and interpret data to construct an explanation for how advances in technology has improved weather prediction.

#### Key Terms:

Weather- Describes the condition of the air outdoors, such as temperature, cloud cover, wind speed and rainfall.

Climate- The set of weather conditions that prevail in a region year after year.

Precipitation- Rain, snow, sleet or hail that falls from the clouds in the sky.

Temperature- How hot or cold something is.

Data- Pieces of information.

Humidity- The amount of water vapor in the air.

Typical- Common

## **Materials List:**

### Possible Building Materials May Include:

- Cardboard
- Popsicle Sticks
- Straws
- Fabric Scraps
- Rocks
- Duct tape or Masking tape
- Paper
- Toothpicks
- Foil
- Plastic Wrap

## **Activity Description:**

Today students will build and test their homes. Students may use the materials listed above or any household items they find. Encourage students to share images of their finished products and videos using flipgrid.com of the houses being tested!

## **Closure:**

Discuss the following with students:

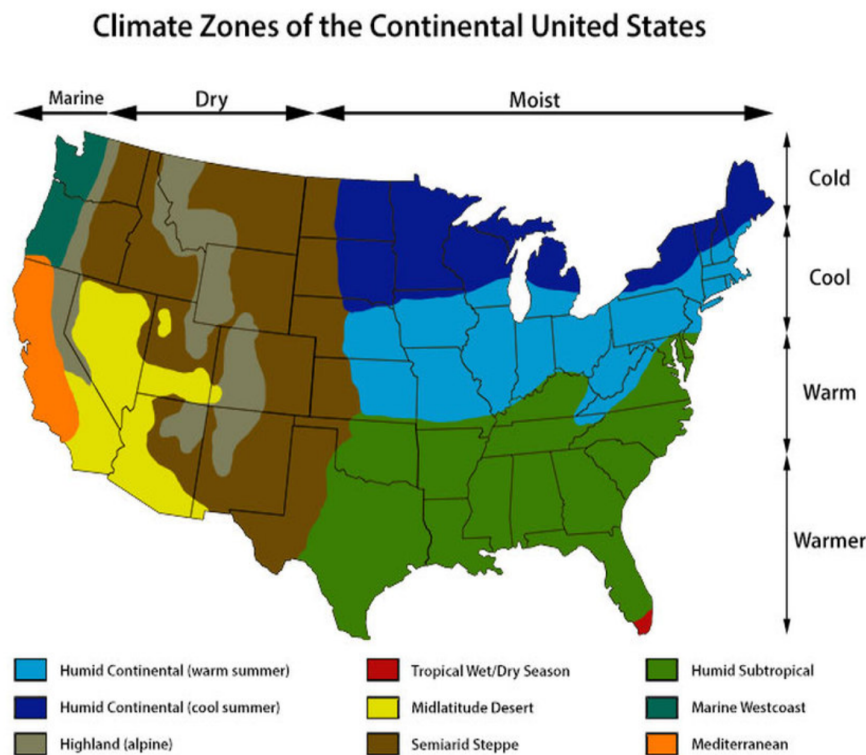
-What was a successful design in each climate region?

-How could you have improved your design?

## **Extension:**

-Read and Discuss: [The Climate is Changing. So must Architecture.](#)

## Student Handouts



Choose to build your house in one of the three U.S. climate regions:

Humid Subtropical- Hot and humid summers with mild winters and lots of rainfall.

Humid Continental- Summers are cool and winters are freezing, snowy, and windy.

Midlatitude Desert- Very hot and dry summers with mild winters. Very little rainfall.

Every climate has weather extremes that homes need to be able to handle. Your challenge will be to build a home for the climate of your choice. You can use any materials you have at home. In addition to being aesthetically pleasing your home will also need to be able to withstand the following challenges depending on the climate region.

Humid Subtropical- Your house must keep a piece of tissue paper dry inside when you pour 1 cup of water (rain) on top of it.

Humid Continental- Your house must be able to keep the roof from caving in when you put a lot of snow (1 cup of rice/dry beans) on top of it.

Midlatitude Desert- Your house must be able to keep an ice cube from melting as you heat the house with a hairdryer for 1 minute.

Yesterday you imagined your plan. **Today you will build and test your design.**

- Take photos or video while you test your design to share with your teachers!