**Guided Notes: Weather Modeling**



Weather forecasts are created using complex \_\_\_\_\_\_\_\_\_\_\_\_ models that analyze data from various \_\_\_\_\_\_\_\_\_\_\_\_ to predict future weather conditions.

**Key Concepts:**

• A \_\_\_\_\_\_\_\_\_\_\_\_ is a person who studies weather and weather patterns.

• Tools used to collect weather data include:

 1. \_\_\_\_\_\_\_\_\_\_\_\_

 2. Doppler \_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_ on weather balloons

 4. Surface weather \_\_\_\_\_\_\_\_\_\_\_\_

• Weather models use \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ to incorporate observed weather measurements into their predictions.

• The two most-used global weather models are:

 1. The \_\_\_\_\_\_\_\_\_\_\_\_ model

 2. The \_\_\_\_\_\_\_\_\_\_\_\_ model

• Differences between the European and American models:

 - Use different \_\_\_\_\_\_\_\_\_\_\_\_ equations

 - \_\_\_\_\_\_\_\_\_\_\_\_ data differently

 - Have different \_\_\_\_\_\_\_\_\_\_\_\_ between grid points

 - Make different \_\_\_\_\_\_\_\_\_\_\_\_ about weather processes

• \_\_\_\_\_\_\_\_\_\_\_\_ is generally considered more accurate on average.

**Real World Examples:**

1. Winter Storm Juno (2015): The European model predicted over \_\_\_\_\_\_\_\_\_\_\_\_ of snow for New York City, while the American model correctly predicted about \_\_\_\_\_\_\_\_\_\_\_\_ inches.

2. Precipitation forecasts: Models can show different predictions for the same time and location, as seen in the June 6, 2019 example.

**Word Bank:**

computer

tools

meteorologist

satellites

radar

radiosondes

stations

data assimilation

European

American

Mathematical

Assimilate

Spacing

assumptions

The European model

two feet

eight