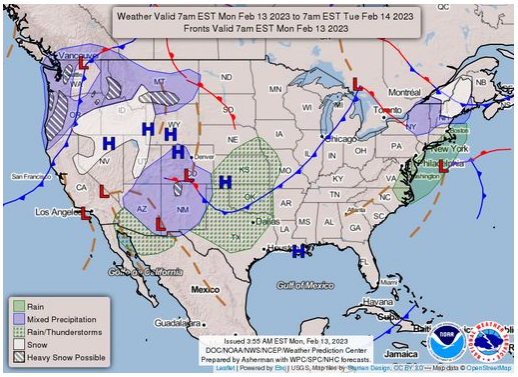
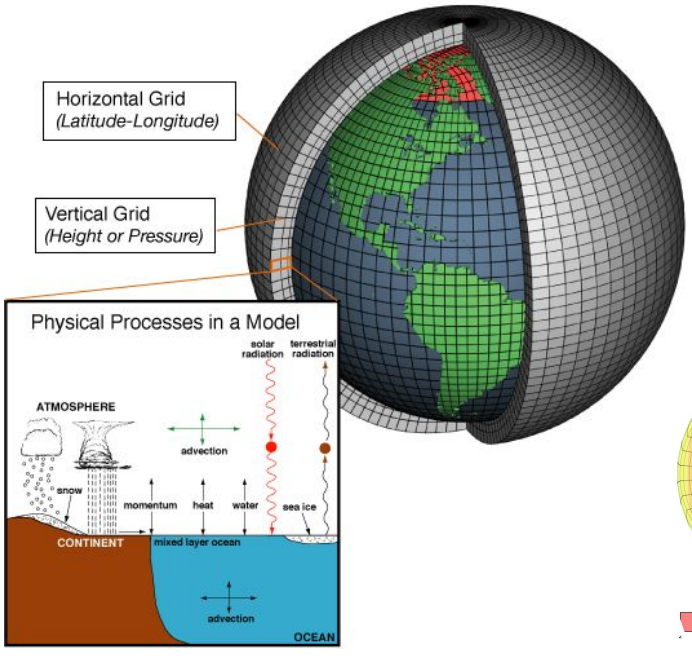
Learn more about: **Weather Models**

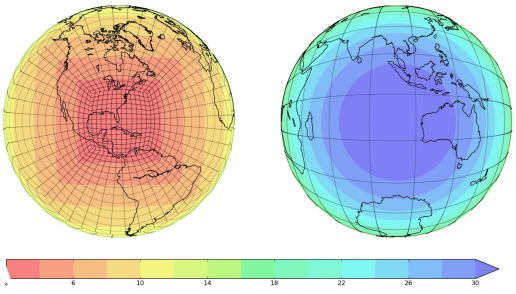


Weather affects us in many ways. Weather will impact the clothes you wear and if flights will leave on time. Weather can increase the time it takes you to drive somewhere and how long it takes trucks to deliver goods. Weather can harm property and threaten lives. For all of these reasons the National Weather Service forecasts the weather.

There are also people at NOAA working to make weather forecasts more accurate. One tool they create are **weather models**. Making weather models requires meteorologists, computer scientists and mathematicians. **Meteorologists** understand how pressure systems move, clouds form, precipitation falls and other aspects of the formation of weather. **Mathematicians** describe all of these changes in the atmosphere with equations. **Computer scientists** translate weather observations and equations into computer code.



Before a weather model is made, the atmosphere is divided horizontally and vertically into blocks. **Physical processes** that create weather also need to be understood. This includes things like the movement of heat horizontally in the atmosphere and land absorption of solar radiation. The better physical processes are understood, the better the weather model will be.



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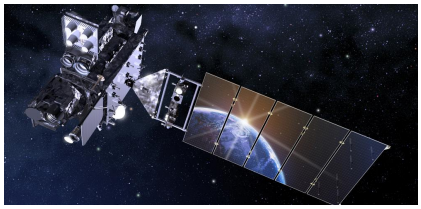


Steps of a Weather Model

1) Observations

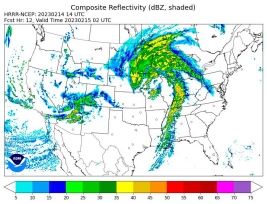
Data describing the weather in the atmosphere is collected from satellites, weather balloons and weather instruments on the ground, in the ocean and on airplanes.

Data goes to:

2) Supercomputer

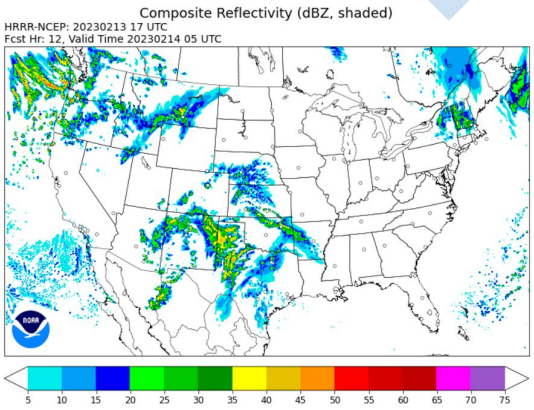
Weather data enters the code of the weather model that contains the mathematical equations that explain physical processes of the atmosphere.

Code becomes:



Code becomes:

HRRR



3) A Model Run

Weather models output a prediction every 1, 6, or 12 hours. This computer prediction can be seen by forecasters around the world.

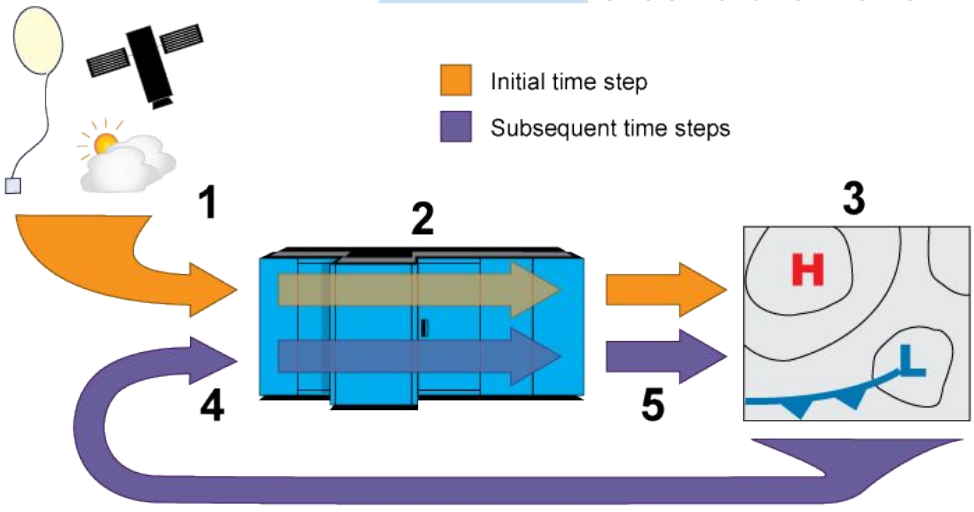
Model Run goes back to:

4) Supercomputer

The model run goes back to the super computer, combined with new weather data to start a new forecast cycle.

5) A New Model Run

Updated computer forecast



Weather Models are one of the tools forecasters use to predict the weather in your area.