

Meteorology

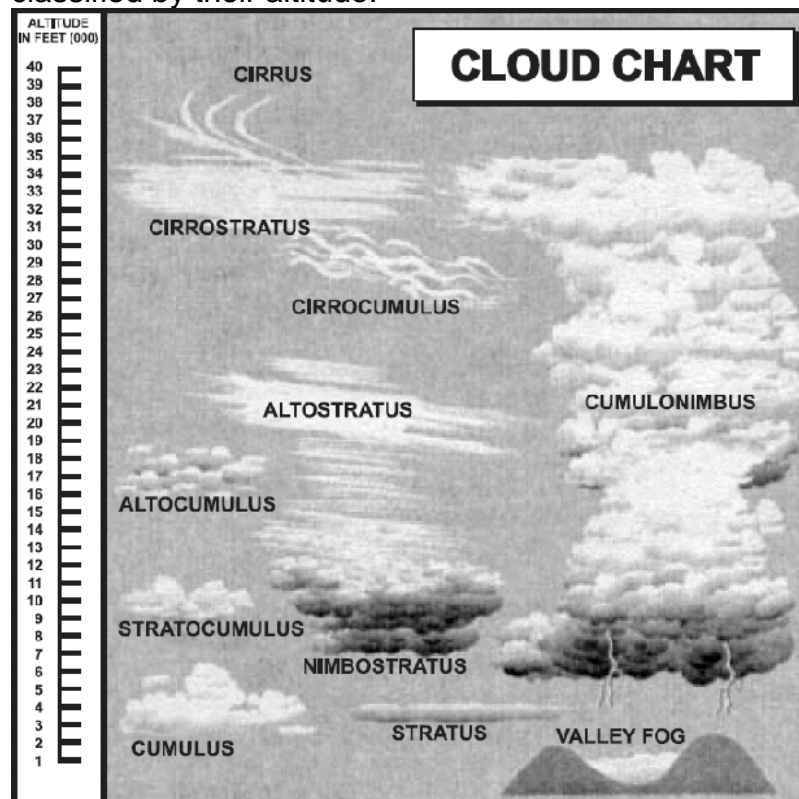
4th grade science

Meteorology is the study of Earth's atmosphere to explain and forecast weather conditions.

The water cycle involves the circulation of water between the atmosphere and Earth, through the processes of evaporation, condensation, and precipitation.

Clouds:

Cirrus, stratus, and cumulus are the three main families of clouds classified by shape; clouds are also classified by their altitude.



© 1995 Accu-Weather, Inc.

Air movement:

- Movement of large air masses bring about many weather conditions.
- Wind is air motion across Earth's surface. Wind is caused by air moving from high pressure to low pressure.
- Winds that blow consistently from one direction are called prevailing winds.

Air Pressure:

- Air pressure is the force of the atmosphere on its surroundings.
- Air pressure can be measured with a barometer.
- A high-pressure system is a location where the force of air is greater than the surrounding atmosphere- results in cool, fair weather.

- A low-pressure system is a location where the force of the air is less than the surrounding atmosphere- associated with precipitation.

Cold and Warm Fronts:

- When two air masses with different temperatures and humidity meet, it is called a front
- When a warm air mass pushes on a cold air mass, a warm front forms.
- A cold front is a cold air mass that pushes on a warm air mass.
- Cold air moves in below warm air and forces warm air upward.

Weather forecasting methods

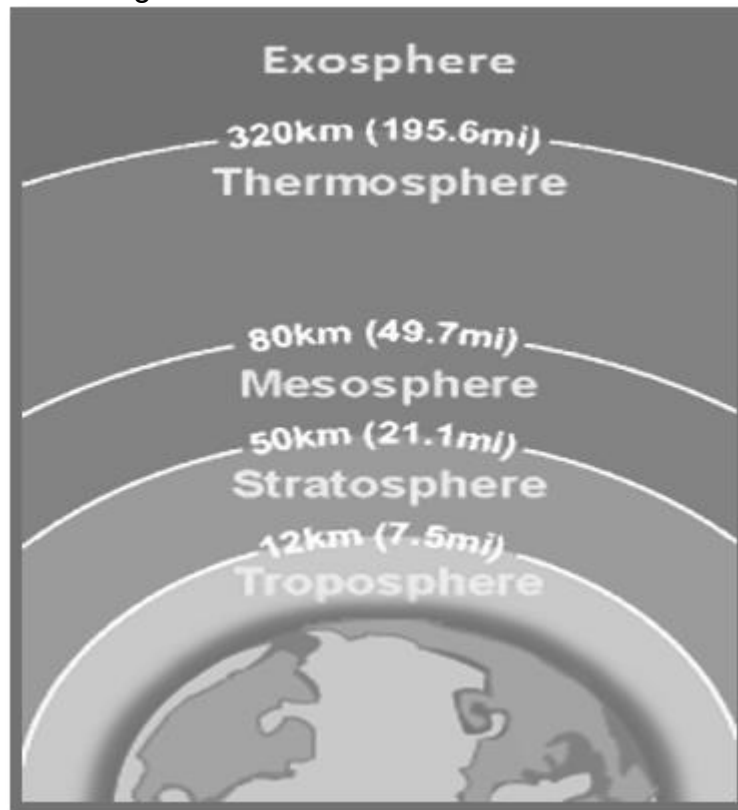
- Weather forecasts are predictions about atmospheric weather conditions or events.
- Meteorologists are scientists who study weather conditions.
 - Forecasting tools:
 - Barometer: an instrument used to measure air pressure
 - Weather satellite: a satellite that observes the conditions of Earth and atmosphere, including cloud coverage

Weather and climate

- Weather consists of the daily changes in the atmosphere.
- Climate is the long term study of an area's weather patterns.

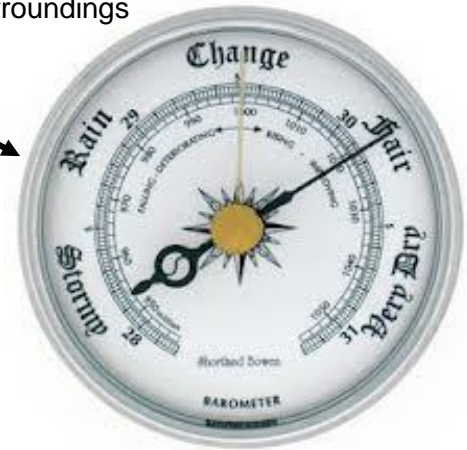
The atmosphere:

The Earth's atmosphere consists of several layers, each of which absorbs or reflects some of the sun's incoming radiation.



Weather Tools

- **Barometer:** instrument used to measure air pressure.
 - **Air pressure:** the force of the atmosphere on its surroundings



- **Hygrometer:** used for measuring the moisture content in the environment.



- **Thermometer:** Instrument used for measuring air temperature



- **Rain gauge:** Instrument for measuring amount of rainfall



- **Anemometer:** Instrument for measuring wind speed



- **Wing Vane:** Instrument for measuring the direction of the wind

