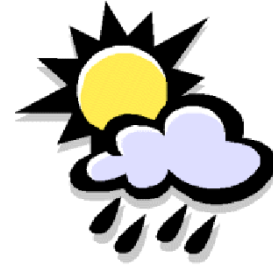


Science Study Guide

UNIT 1: WEATHERWISE

- Know 3 characteristics of the air around us.

- Air has no shape or color
- You cannot smell or taste air
- Air takes up space
- Air has mass
- Air exerts pressure



- Know 4 levels of the Earth's atmosphere and tell how high they are above our surface.

- **Troposphere:** Surface of the Earth to 16 km. *All weather happens here.*
- **Stratosphere:** 16-50 km above Earth's surface. *No weather here. Airplanes fly here.*
- **Mesosphere:** 50-80 km above Earth's surface. *Meteors burn up here.*
- **Thermosphere:** 200-500 km above Earth's surface. *Satellites, Space station are here.*

- What is air pressure?

- It is the force with which air pushes against the Earth's surface.

- Know 3 basic types of clouds.

- **Cirrus:** High clouds that are thin and wispy.
- **Cumulus:** Big, puffy clouds with flat bottoms.
- **Stratus:** Low clouds that look flat and thin, like blankets covering the sky.

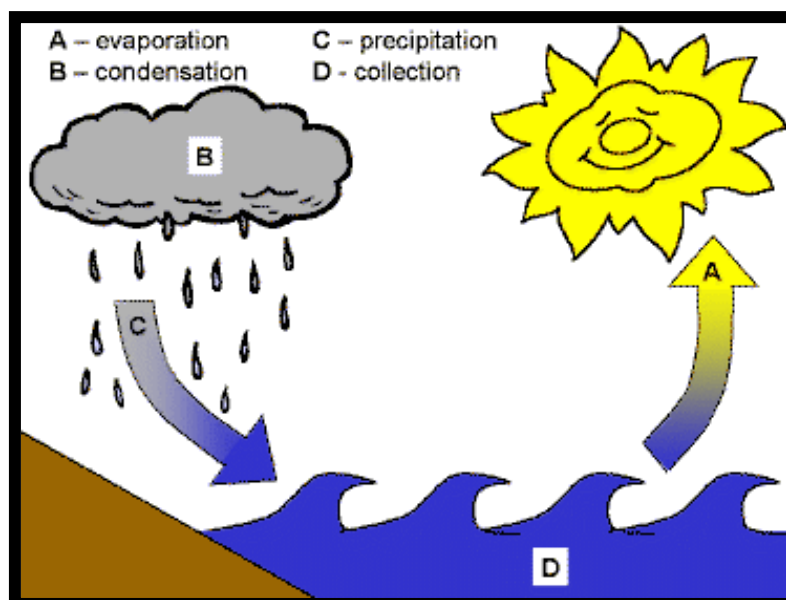
- How do clouds form?

- Water (a liquid) evaporates, changes into water vapor, a gas that rises into the atmosphere. It comes into contact with particles of dust (or ice if they are far up) and form clouds.

- What is the **ozone layer** and why is it in trouble?
 - The ozone layer is a layer of gas in the stratosphere that blocks dangerous UV rays from reaching the Earth's surface.
 - It's in trouble because pollution (eg. CFCs) is depleting the ozone layer which allows more harmful UV rays to reach the Earth from the sun.

- Know the 3 types of **fog**.
 - Fog is nothing more than a cloud on the ground. When warm air flows over the cool land, water vapor condenses into tiny droplets. This is **FOG**.
 - 3 Types:
 - **Ground Fog:** You touch and walk through this fog.
 - **Valley Fog:** Fog in valleys, often lower than mountains.
 - **Ice Fog:** Fog that contains ice particles

- Sketch and label a diagram (or briefly explain) the **Water Cycle**.
 - Heat from the sun evaporates water from oceans, lakes, tress, etc. The rising water vapor cools, turns to water droplets and comes into contact with dust particles in the air to form clouds. When the clouds become too full of water droplets, precipitation occurs. This cycle repeats, making "the water cycle".



- What causes the **wind**?
 - The sun heats the Earth's surface unevenly. This creates air masses of different temperatures. Warm air is lighter than cold air. Cold air masses push under hot air masses, causing them to rise. This movement of air is called WIND.

- Know 3 facts about **tornadoes**.
 - See slideshow

- What clouds usually accompany **thunder** and **lightning**?

Cumulonimbus clouds which are often called "storm clouds".

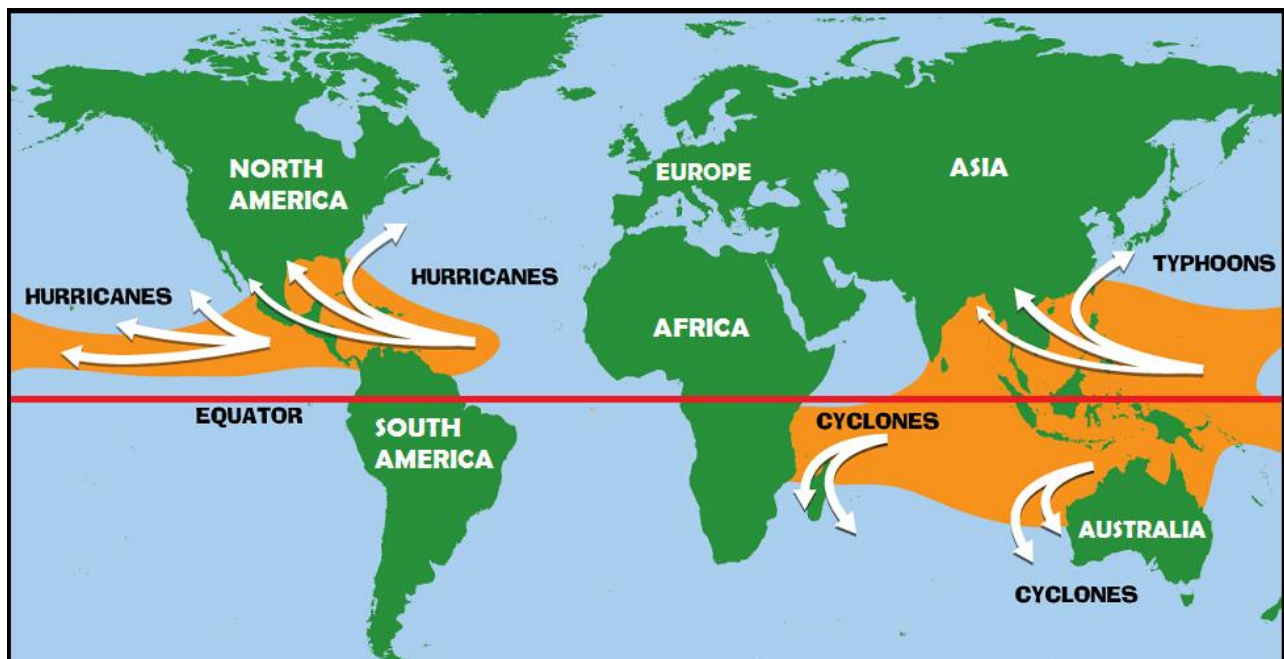
- Know how to read a weather report.
 - *See the sample weather report done in class.*

- Know the Difference between hurricanes, typhoons, and cyclones.
 - The only difference between these 3 storms is their geographic location:

Hurricane: North Atlantic / Northwest Pacific

Typhoon: Northeast Pacific

Cyclone: South Pacific / Indian Ocean



- Be able to identify and use weather related folklore to predict weather.
 - Eg. Red sky at night, sailors delight. Red sky in morning, sailors take warning.
 - Eg. Rainbow in the morning gives you fair warning.

- Identify and describe instruments for measuring weather information
 - Ex. Anemometer - Measures wind speed.
 - Ex. Barometer – Measures air pressure.
 - *Please see slideshow for all 7 instruments studied.*

UNIT VOCAB:

Air, Atmosphere (Troposphere, Mesosphere, Stratosphere, Thermosphere), Air Pressure, Altitude, Clouds (Cumulus, Cirrus, Stratus), Fog (Ground Fog, Valley Fog, Ice Fog), Water Cycle (Evaporation, Condensation, Precipitation), Wind, Wind Chill Factor, Temperature, Storm, Tornado, Cumulonimbus Clouds, Hurricane, Cyclone, Typhoon, Wind Vane, Anemometer, Thermometer, Hygrometer, Barometer, Rain Gauge, Satellite

Test Format: Multiple Choice

Matching

Short Answer Questions (Choice Given)

Reading a Weather Report

TEST: Wednesday, November 20, 2013