**Weather/Meteorology**

1. Climate – pattern of weather in a \_\_\_\_\_\_\_\_\_ area over a long period of time

<http://www.blueplanetbiomes.org/climate.htm>

1. Weather – condition of the atmosphere in a smaller area over a \_\_\_\_\_\_\_\_\_\_\_\_\_ period of time
2. Types of heat:
   1. R\_\_\_\_\_\_\_\_\_\_\_\_\_ = how sun’s heat travels to us through space
   2. C\_\_\_\_\_\_\_\_\_\_\_\_\_ = heat is transferred by contact (soil in beaker warms from outside in)
   3. Convection = heat rises in one area and sinks in another; the air masses replace each other. (hot air \_\_\_\_\_\_\_\_\_\_, cold air \_\_\_\_\_\_\_\_\_\_\_\_)
3. Equatorial zones that receive most d\_\_\_\_\_\_\_\_ sunlight = hottest.
4. Cloud formation – W\_\_\_\_\_\_\_\_\_\_ evaporates into the air (water vapor) then rises, cools, and c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ onto dust particles in the upper atmosphere. Clouds are millions of tiny w\_\_\_\_\_\_\_\_\_\_ droplets combined together.
5. Rain Shadow - More precipitation on top of mountains b/c it is colder, so more condensation.

<http://animals.about.com/od/alpinemontaine/f/rainshadow.htm>

<http://www.usatoday.com/weather/tg/wrnshdw/wrnshdw.htm>

1. Convection current – air moving in a c\_\_\_\_\_\_\_\_\_\_ p\_\_\_\_\_\_\_ caused by u\_\_\_\_\_\_\_\_\_ h\_\_\_\_\_\_\_\_\_\_\_ of Earth.
2. Weather front – boundary between two \_\_\_\_\_\_ masses (where changes in weather occur)

types: stationary, cold, warm, etc.

(comp.) [http://www.classzone.com/books/earth\_science/terc/content/visualizations/](http://www.classzone.com/books/earth_science/terc/content/visualizations/es2002/es2002page01.cfm?chapter_no=visualization)

1. Water cycle – Ev\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Tr\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Co\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Pr\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, R\_\_\_- O\_\_\_, Fi\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Ac\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. (comp.) <http://earthguide.ucsd.edu/earthguide/diagrams/watercycle/index.html>

<http://www.enchantedlearning.com/subjects/astronomy/planets/earth/Watercycle.shtml>

* 1. Evaporation = water moves from \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_ state; heat \_\_\_\_\_\_\_\_\_
  2. Condensation = water moves from \_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_ state; heat \_\_\_\_\_\_\_\_\_
  3. Sublimation = water moves from \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_ state; heat \_\_\_\_\_\_\_\_\_

**NOTES:**

**Astronomy/Space Science – Earth-Moon-Sun System**

1. Seasons – summer = axis tilts t\_\_\_\_\_\_\_ sun, winter = axis tilted a\_\_\_\_\_\_\_ from sun.
2. Moon Phases – new/can’t see, full/see whole side, waxing = getting bigger, waning =getting smaller, gibbous, crescent <http://www.moonconnection.com/moon_phases.phtml>
3. Eclipses
   1. Solar = S\_\_\_\_ blocked out (caused by shadow of m\_\_\_\_\_\_ on E\_\_\_\_\_\_\_), only seen from certain places on Earth <http://www.mreclipse.com/Special/SEprimer.html>
   2. Lunar = m\_\_\_\_\_\_\_ blocked out (caused by shadow of E\_\_\_\_\_\_ on m\_\_\_\_\_\_) Seen from everywhere on Earth <http://www.mreclipse.com/Special/LEprimer.html>
4. Rotation – Planet s\_\_\_\_\_\_ on its axis = 1 day (24 hrs), same length all over the world,

Revolution – one complete o\_\_\_\_\_\_ of planet = 1 year, same length all over the world, 365 days

**Universe, Galaxy, Solar System**

1. Planet – orbits a s\_\_\_\_\_\_\_\_ Moon – orbits a p\_\_\_\_\_\_\_\_\_ (also called a satellite)
2. Star – gaseous ball of fire. How many in our solar system? \_\_\_\_\_\_\_\_\_\_
3. Dwarf planets = C\_\_\_\_\_\_, Pluto, H\_\_\_\_\_\_\_\_\_\_, M\_\_\_\_\_\_\_\_\_\_\_\_, E\_\_\_\_\_\_
4. Inner planets – M\_\_\_\_\_\_\_\_\_\_\_\_, Venus, E\_\_\_\_\_\_\_\_\_\_, Mars

Outer planets - Jupiter, S\_\_\_\_\_\_\_\_\_\_\_\_, Uranus, N\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Relative size | State of Matter | Spacing pattern |
| Inner Planets |  |  |  |
| Outer Planets |  |  |  |

1. A\_\_\_\_\_\_\_\_\_\_\_\_ Belt – big space rocks between Mars and Jupiter
2. K\_\_\_\_\_\_\_\_\_\_\_\_ Belt – region beyond Neptune that is full of comets, asteroids and other debris.
3. Comets – have a tail, made of \_\_\_\_\_\_\_\_ , orbit the \_\_\_\_\_\_\_\_\_ <http://www.kidsastronomy.com/comets.htm>
4. *draw a line to the correct definition* 
   * 1. meteor space rock
     2. meteorite when space rock enters atmosphere
     3. meteoroid when it hits E’s surface
5. Biggest item U\_\_\_\_\_\_\_\_\_, G\_\_\_\_\_\_\_\_\_, S\_\_\_\_\_\_\_ S\_\_\_\_\_\_\_\_, P\_\_\_\_\_\_\_ Sa\_\_\_\_\_\_\_ smallest item

(M\_\_\_\_\_ W\_\_\_)

**Earth Science – Plate Tectonics** (look at map across from library)

1. Earthquakes – seismic waves (P and S) are the energy released from the earthquake’s focus.
2. P-waves travel \_\_\_\_\_\_\_\_\_\_\_ than S-waves.
   1. S\_\_\_\_\_\_\_\_\_\_\_\_\_ are the instruments that record the seismic waves.
   2. Richter Scale – measures the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ release of a moderate earthquake (magnitude 3-7)
   3. Moment magnitude – measures the energy release of l\_\_\_\_\_\_\_\_\_ s\_\_\_\_\_\_\_\_\_ earthquakes
   4. Mercalli Intensity scale – measures the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the earthquake causes.
3. Inner Earth– crust, m\_\_\_\_\_\_\_\_\_\_\_\_\_ (plastic,) outer core (liquid,) inner core (solid)
4. Volcanoes – shield, composite/stratovolcano, cinder cone,
5. Mountain formation
   1. Coast range – plates c\_\_\_\_\_\_\_\_\_, not v\_\_\_\_\_\_\_\_\_\_\_\_\_, folded mountains
   2. Cascade Range – Pacific plate s\_\_\_\_\_\_\_\_\_\_\_\_\_ under the North American. plate, v\_\_\_\_\_\_\_\_\_\_\_\_\_.
   3. Himalayan Range – I\_\_\_\_\_\_\_\_ plate colliding with the Eurasian plate, not v\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Alfred Wegener = Theory of C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Drift (comp.)<http://earthguide.ucsd.edu/earthguide/diagrams/plate_reconstruction/platereconstruction.html>
7. Evidence of Pangaea – F\_\_\_\_\_\_\_\_\_\_\_, M\_\_\_\_\_\_\_\_\_\_\_\_\_\_, g\_\_\_\_\_\_\_\_ s\_\_\_\_\_\_\_\_\_\_\_\_\_\_, & c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shapes all match <http://sio.ucsd.edu/voyager/earth_puzzle/>
8. Theory of Plate Tectonics – <http://pubs.usgs.gov/gip/dynamic/Vigil.html> <http://education.sdsc.edu/optiputer/teachers/platemovement.html>
   1. Convergent – found along c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, plates move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Divergent – m\_\_\_\_\_\_- o\_\_\_\_\_\_\_\_\_\_\_\_ r\_\_\_\_\_\_\_\_\_\_\_\_\_, plates move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Transform boundaries – S\_\_\_\_\_ A\_\_\_\_\_\_\_\_\_\_\_ F\_\_\_\_\_\_\_\_\_\_, plates move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Subduction zones - Area where o\_\_\_\_\_\_\_\_\_\_\_\_ crust plunges under continental crust
9. Why the plates move: basal drag (c\_\_\_\_\_\_\_\_\_\_\_ in mantle,) s\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ (gravity), ridge push (magma forces to surface)

(comp.) <http://earthguide.ucsd.edu/eoc/teachers/t_tectonics/p_convection2.html>

<http://www.see.leeds.ac.uk/structure/dynamicearth/convection/driving_forces/index.htm>

1. Continental Shelf – “edge” of continent, under ocean

**NOTES**

**Geology**

1. Rock Cycle – melting/cooling, heat/pressure, compaction/cementation

<http://www.learner.org/interactives/rockcycle/index.html> *click through the whole thing!*

* 1. Weathering – b\_\_\_\_\_\_\_\_\_ the rock, erosion – m\_\_\_\_\_\_\_\_\_\_\_ of rock particles
  2. Igneous = V\_\_\_\_\_\_\_\_\_
  + i\_\_\_\_\_\_\_\_\_\_\_\_ or plutonic: from m\_\_\_\_\_\_\_\_\_, ex. granite, large crystals
  + e\_\_\_\_\_\_\_\_\_\_\_\_ or volcanic: from l\_\_\_\_\_\_, ex. obsidian, basalt
  1. Sedimentary –
  + cl\_\_\_\_\_\_\_\_\_: layered, deposition ex. sandstone
  + ch\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: crystals from evaporation of water, stalactite, stalagmite ex. thunderegg
  + organic: f\_\_\_\_\_\_\_\_\_ buried in layers of s\_\_\_\_\_\_\_\_\_\_\_\_
  1. Metamorphic – (gumdrops) ex. gneiss, slate
  + F\_\_\_\_\_\_\_\_\_: flattened crystals
  + Non-f\_\_\_\_\_\_\_\_\_\_\_: mangled/folded

1. Geologic Time Scale - <http://www.enchantedlearning.com/subjects/Geologictime.html>
2. Finding relative ages of rocks = comparing which one is older
   1. Law of S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - helps determine relative ages of rocks

<http://www.classzone.com/books/earth_science/terc/content/investigations/es2903/es2903page03.cfm>

b. Index fossils – organisms that lived for a relatively s\_\_\_\_\_ time and are common in the f\_\_\_\_\_\_\_\_ record. <http://pubs.usgs.gov/gip/geotime/fossils.html>

c. Carbon dating (C-14) – helps determine age of organic remains

<http://www.pbs.org/wgbh/nova/tech/radiocarbon-dating.html> *click on “launch interactive”*

**NOTES**