***1st Quarter review for Earth Science***  
 Most reviews go to 10 – ours goes to 11! Follow the links found with each topic to find the answers to the questions.

1. [Scientific Method](http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml)

* What is the first step of the scientific method?
* Look at the flowchart of the “Overview of the Scientific Method”. What do you do if your hypothesis is false or partially true?

1. Atoms and Elements
   * Draw a carbon atom, labeling the protons, neutrons, and electrons. (Do this Google search yourself)
   * How are the elements arranged in the [Periodic Table of Elements](http://www.webelements.com/)? (Read under the Periodic Table of Biscuits)
2. [Physical and Chemical Change](http://www.learner.org/courses/essential/physicalsci/session4/closer1.html)
   * What is the difference between a physical and chemical change?
   * Take the chemical and physical change [quiz](http://www.edinformatics.com/math_science/a_p_chem.htm), and tell how many (out of 10)   
     were chemical changes.
3. [Conservation of Mass](http://www.metacafe.com/watch/yt-J5hM1DxaPLw/conservation_of_mass/) - Look at the poster on this page, and take note of what is said about the Conservation of Matter
   * Because the final product off a chemical reaction is the same mass as the original materials, this tells us that in a chemical reaction, matter cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. [Calendars and Astronomy](http://www.astronomy.ohio-state.edu/~pogge/Ast161/Unit2/time.html)
   * Looking at astronomical objects, how do we determine the:  
     a. Length of a day?

b. Length of a month  
c. Length of a year?

1. [Scale Model](http://www.essex1.com/people/speer/model.html) of the Solar System
   * In the model above, which planet is largest?
   * Which planets are smaller than Earth?
2. [Seasons](http://www.learner.org/jnorth/tm/mclass/eclipticsimulator.swf)
   * Play the animation on this page (click “start animation” in the bottom right hand corner) and watch what happens to the Sun’s rays as the year progresses.
3. Drag the stick figure to 45 degrees north latitude (halfway between the equator and north pole). In which month(s) are the Sun’s rays most directly overhead?
4. Look at the animation in the lower right-hand box. In which month(s) are the Sun’s rays at the greatest angle?
5. [Comets](http://www.windows2universe.org/comets/Oort_cloud.html) and the Oort Cloud
   * Where do comets come from?
   * Scroll down and click on the link “When a comet comes close to the sun”. When does the tail of a comet begin to form?
6. [Moon Phases](http://astro.unl.edu/naap/lps/animations/lps.swf)
   * Click on the moon phase simulator above. Start the animation and watch the ‘Horizon Diagram’ in the lower right hand corner. Pause the animation when the moon rises just as the sun goes down.  
     1. What is the moon phase at this point in time?  
       
       
     2. What type of eclipse MIGHT occur during this phases, a solar or lunar eclipse?
7. [Solar System](http://solar-system.owl-hollow.net/)
   * Look at this animated model of the Solar system. Which planet orbits the fastest? What pattern do you notice about the speed at which the planets orbit the Sun?
   * Looking at the sizes and distances of the Sun and planets, tell 2 things that are incorrect about this model of the solar system.
8. Gravity
   * [Law of Universal Gravitation](http://www.projectshum.org/Gravity/factfile.html)  
     http://www.projectshum.org/Gravity/universal.png In this formula, m = mass of an object and r= the distance between the two objects. Click on the link above and tell:
9. What happens to the force (gravity) if you increase the mass?
10. What happens to the force (gravity) if you decrease the distance?  
      
      
    * [Gravity Game](http://www.physicsgames.net/game/Gravity_Master.html) – Use your knowledge of gravity to master all the levels.