

Integrated Science – 8th Weeks 1 & 2

Everything is energy and that's all there is to it. Match the frequency of the reality you want and you cannot help but get that reality. It can be no other way. This is not philosophy. This is physics.

— Albert Einstein

Overview

Movement involves one form of energy being transformed into another form systematic ways. Energy has the potential to exert a force over a distance. Waves transfer energy such as sound, heat, light, and earthquakes through different mediums. Sound and light waves allow organisms to “hear” and “see” the world around them. Energy is classified as either kinetic or potential energy.

Every object exerts a gravitational force on every other object. The distance between objects and mass of the objects determine the force of gravity between them. This force is difficult to measure unless one of the objects has a very large mass. Unbalanced forces cause change in the motion of objects, while balanced forces do not.



Essential question:

- What patterns can you see in the way energy is cycled through the systems around you?

- _____ Participate in the MMA **Science Fair** (February 8th)
 - _____ Topic chosen/Question to be asked
 - _____ Background research and design complete and Hypothesis
 - _____ Experiment or test complete/Data compiled and Interpreted
 - _____ Presentation board complete
 - _____ Presentation to judges practiced/Ready for interview

Week 1: Due Friday, February 3

- _____ 1. My science fair research is completed and the board is ready for presentation to the judges next week.
- _____ 2. Complete the handout: Friction (useful or not useful)
- _____ 3. Participate in the review lesson: Weight and Mass and gravity's effect
- _____ 4. Visit the following website: <http://goo.gl/Y1oPZV> and read about Weight and Mass, take notes, and answer the 3 Analysis questions at the bottom of the page.

Name _____ Period: _____

Cycle 3 January 18 – March 11

5. Visit the following website: <http://goo.gl/uPVm6a> and read The Gravity Way! Complete the activity then answer the 3 Analysis questions. Please also answer the following questions on the same sheet of paper: 4.) Do you have gravity? Explain why or why not. 5.) If you were an astronaut, and you go farther into space, why do you become weightless?

Week 2: Due Friday, February 10

6. Read and take notes on pp. 454-459 of the Prentice Hall Physical Science textbook: Energy Transformations and Conservation.

7. Complete the Assessment questions (1-3) on p. 514 of the Prentice Hall Physical Science textbook. (9 pts)

8. Review for the Unit Test.

9. Take your Unit Test.

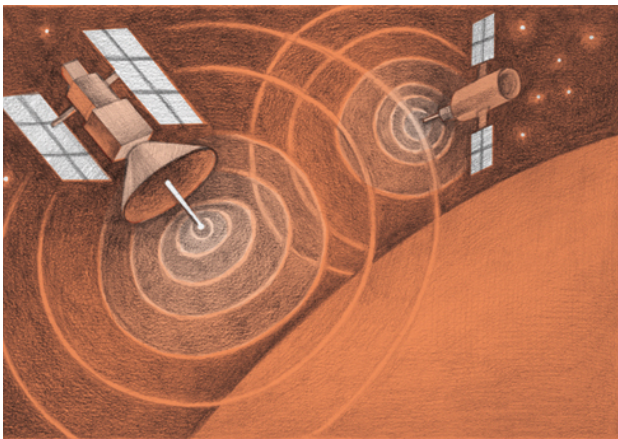
10. Present your science fair research at the MMA science fair!



...Töne und Bilder drahtlos überträgt...



... jeder Zeit und an jedem Ort telefoniert...



nicht nur auf Erden, sondern auch im Weltraum...



...und alle Menschen der Welt miteinander verbindet.

Integrated Science – 8th Weeks 3 & 4

Essential question:

What patterns can you see in the way energy is cycled through the systems around you?

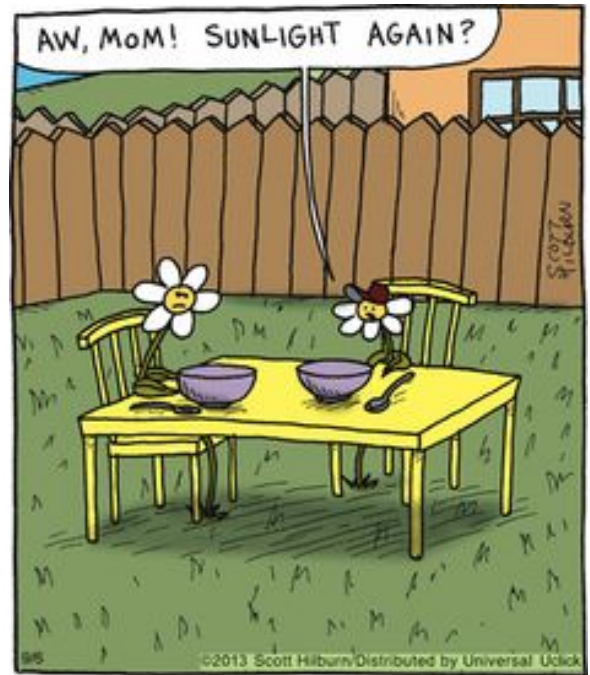
Week 3: Due February 17

_____ 11. Participate in the review lesson/episode:
Photosynthesis and Respiration

_____ 12. Watch, in class, the video: Lima Bean Time lapse. Discuss your observations and create questions related to plant germination and growth.

_____ 13. Begin the lab activity: Photosynthesis Lab Using Elodea.

_____ 14. Read the following informational text for comprehension and complete the accompanying questions: How Does Your Garden Grow.



Week 4: Due February 24

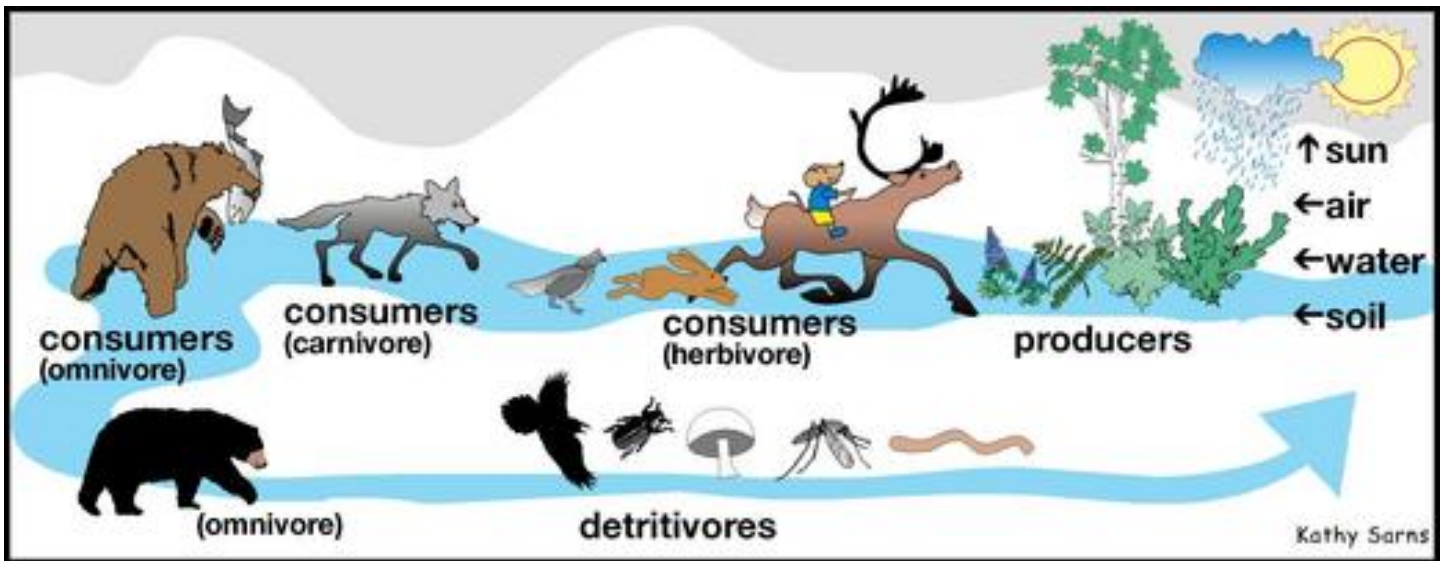
_____ 15. Go to the following website and gather data on gas formation in photosynthesis:
<http://www.reading.ac.uk/virtualexperiments/ves/preloader-photosynthesis.html>

_____ 16. Using the data gathered in #15, create a graph of your choosing that will accurately reflect your data.

_____ 17. Complete the Elodea Lab and discard/restore your materials.

_____ 18. Complete the Photosynthesis: matter and energy Test.

Integrated Science Study Guide (8th) WEEKS 5, 6, & 7)



Overview

The sun is the source for essentially all biological energy. Plants store captured light energy as chemical energy in sugars. Animals eat plants to obtain the energy and matter that they need. The energy from food is used for mechanical and heat energy. The matter is used to build the cells of the organism.

Food chains and food webs are models used to show the transfer of energy and matter among organisms. These models can be used to show relationships among organisms. Organisms, including humans, influence the ability of other organisms to live in a specific environment.

Essential question:

- What patterns can you see in the way energy is cycled through the systems around you?

Week 5: Due March 3

_____ 19. Visit and take notes on the following website on forms of energy:

http://www.nmsea.org/Curriculum/Primer/forms_of_energy.htm and/or read the handout: Introduction to Energy.

_____ 20. Using the information from #13 above, create a Forms of Energy Foldable.

_____ 21. Watch the following short video: Needs of Living Things. Discuss in class the Patterns you observed regarding how living things meet their energy needs.

_____ 22. Review the concepts of Producer/Consumer; Predator/Prey; Parasite/Host

_____ 23. Complete the Organism Relationships foldable.

Week 6: Due March 10

- _____ 24. Participate in and take notes on the Lesson: Energy Pyramids and Food Chains
- _____ 25. Complete the Energy Pyramid activity.
- _____ 26. Complete your food chain and pyramid PowerPoint Slides (consult rubric).
- _____ 27. Participate in the lesson: Food Webs
- _____ 28. Complete the activity: Make Your Own Food Web and answer the following questions on the back of the sheet: 1) What might happen if there was a drought and small plants started dying? 2) If there was a disease that started killing off insects, how might that affect the food web and 3) What might happen if two more bird large populations were added to this web?

Week 7: Due March 17

- _____ 29. Participate in and take notes on the lesson: Species, Populations, Communities, Ecosystems, and Biomes.
- _____ 30. View the following website and write down your observations about the relationships between predator (mt. lions/pumas) and prey (deer). How does human development and encroachment affect this relationship? <http://www.bapp.org/puma-prey-lab> (observations must be 1 page double spaced typed or hand-written legibly)
- _____ 31. Study for and Take your cycle test.