Name: Homeroom Teacher: Cycle 3

Power - Natural World Study Guide

Have you ever asked yourself, "How is my world affected by energy?" Without energy there would be nothing. There would be no sun, no wind, no rivers no telephones, no life, and especially no bonded atoms which require energy to be held together.

Energy is behind everything that happens. It is everywhere. It is changing from one form to another right before your eyes (and in your eyes). Some forms of energy are visible, such as the lights at the ceiling. You feel energy when you sit in the sunlight. You don't see the energy but you know it is there. Most of what goes on in the universe involves one form of energy being transformed into another. The total amount of energy available for transformation is almost always decreasing.

Scientists define energy as the ability to do work or cause change. Work is what happens when a force moves something. Power is the rate at which work is done. Therefore, power is the ability to employ or control the use of energy.

After reading the introduction respond to the following questions in your science notebook:

1. Scientists define energy as.....
2. List three examples of energy?
3. Explain why you do or do not agree that sound is a form of energy?
4. Describe in one sentence how you use power daily.

Chemical Bonds
January 11th – 15th

Jan. 11th & 13th – Atoms, Bonding and the Periodic Table
Corresponding reading from the textbook:
- *Science Explorer – Physical Science*
  - *Chapter5, Section 1*

Jan. 12th & 14th – Ionic Bonds
Corresponding reading from the textbook:
- *Science Explorer – Physical Science*
  - *Chapter 5, Section 2*

Jan. 15th - Vocabulary Quiz 1

Grading Breakdown

10% - Participation

15% - Class work

25% - Lab work

30% - Quizzes

15% - Final

5% - Portfolio

100% - Total

Name: Homeroom Teacher: Cycle 3

Guiding Question 1:

How do compounds form?

"The most powerful force in the universe is compound interest."

- Albert Einstein

American Physicist

Reflect and respond to guiding question 1 in your science notebook!

Covalent Bonds and Bonding in Metals
January 19th – 22nd

Jan. 19th & 20th – Covalent Bonds

Corresponding reading from the textbook:

- *Science Explorer – Physical Science*
  - *Chapter 5, Section 3*

Jan. 21st – Bonding in Metals

Corresponding reading from the textbook:

- *Science Explorer – Physical Science*
  - *Chapter 5, Section 4*

Jan. 22nd – Vocabulary Quiz 2

Chemical Reactions
January 25th – 29th

Jan. 25th & 27th – Observing Chemical Changes

Corresponding reading from the textbook: Science Explorer, Chapter 6 Section 1

Jan. 26th & 28th –Describing Chemical Reactions

Corresponding reading from the textbook: Science Explorer, Chapter 6, Section 2

Jan. 29th – Vocabulary Quiz 3

Controlling Chemical Reactions
February 1st – 5th

Feb. 1st & 3rd – Controlling Chemical Reactions

Corresponding reading from the textbook: Science Explorer, Chapter 6, Section 3

Feb. 2nd & 4th – Carbon Compounds

Corresponding reading from the textbook: Science Explorer, Chapter 8 Sections 1 & 2

Feb. 5th – Vocabulary Quiz 4

Controlling Chemical Reactions Continued
February 8th – 11th

Feb. 8th & 10th – Polymers and Composites

Corresponding reading from the textbook: Science Explorer, Chapter 8 Section 3

Feb. 9th & 11th – Day of Review

Corresponding reading from the textbook: Science Explorer, Chapters 5-7

Nov. 20th – Vocabulary Quiz 5

Name: Homeroom Teacher: Cycle 3

Unit Review and Final
February 16th through the 19th

Feb. 16th & 18th – Day of Review

Feb. 17th & 19th – Final

Reflection and Application of Knowledge:
Science Notebooks Due October 6th & October 8th

5 – Work is completed in chronological order, clearly labeled with date and assignment name and. Each page neatly reflects one assignment or a continuation of an assignment. All work done in class is present in the notebook. No exceptions! Penmanship must be clearly legible and done in blue or black ballpoint pen or pencil.

4 – Work is mostly in chronological order, mostly labeled with date and assignment names. Each page is mostly organized to reflect one assignment or a continuation of an assignment. Most of the work done in class is present in the notebook. No exceptions! Penmanship is mostly legible and done in blue or black ballpoint pen or pencil. As above the notebook is turned in on time.

3 – Work is somewhat in chronological order, some labels, dates and assignment names can be found. Pages reflect other activities other than class work. Three quarters of the work done in class is present. No exceptions! Penmanship is mostly legible and done in blue or black ballpoint pen or pencil. As above the notebook is turned in on time.

Guiding Question 2:

What happens during a chemical reaction?

"One of the most important chemical reactions or process is electron, or charge, transfer. Electron transfer processes are essential for the existence and maintenance of life as we know it."

- **Norbert Scherer**

Professor of Chemistry at the University of Chicago

Reflect and respond to guiding question 2 in your science notebook!