Physical Science

Assignment 16-3, 16-4

Name _____

Class Period _____

Date _____

1. In the chart below, list eight different energy conversions in the left column, then enter the "original" and "new" forms in the other two columns. The first line is filled in with an example. At least 15 other examples are explained in section 16-3.

Description	Original Form of Energy	New Form(s) of Energy
burning a fuel (paper, wood, etc.)	chemical	heat & light

2. A match is lit then used to light a Bunsen burner.
   - The burner is used to boil water.
   - The steam from the water is directed through a narrow pipe so that it blasts against a fan.
   - The fan turns a generator to make electricity.

Name the forms of energy involved in the conversions.

Unlit match (What form?) **Converted to:** Match flame. (What form?)

_____ _____

Unlit burner gas (What form?) Burner flame. (What form?)

_____ _____

High pressure steam (What form?) Turbine (fan) motion (What form?)

_____ _____

Turbine (fan) motion (What form?) Electrical current (What form?)

_____ _____

For the next four questions look at Figure 16-12 on page 404.

3. When a basketball player uses muscle power to throw a basketball up into the air, what form-to-form energy conversion is taking place?

_____

4. What happens as the upward velocity of the ball decreases, what happens to the **kinetic** energy of the ball? _____

Please continue on the other side.

5. What happens as the upward velocity of the ball decreases, what happens to the **potential** energy of the ball? _____

6. Describe the level of **kinetic** energy when the basketball has reached the peak of its arc.

_____

7. Describe the level of **potential** energy when the basketball has reached the peak of its arc.

_____

For the next five items, look at the picture of a roller coaster ride on page 405.

8. At what point does the car have the greatest potential energy? [ ]

9. At what position does the car have the greatest kinetic energy? [ ]

10. At what position does the car have the least potential energy? [ ]

11. At which point, C or E, does the car have more potential energy? [ ]

12. Describe the kinetic-potential energy conversions that occur as the car proceeds from point A to point E.

_____

_____

_____

_____

13. Explain the "***Law of Conservation of Energy***."

_____

_____

14. What did Albert Einstein have to say about the relationship between mass and energy?

_____

_____

_____

_____

15. What is the process called that converts mass to energy in our sun? [ ]