Name: Date: Period:

**Forms of Energy**

**Part I:**

*Directions: Watch the BrainPOP Movie on “Forms of Energy” (*[*http://tinyurl.com/nekm289*](http://tinyurl.com/nekm289)*).*

Login information:

User name: hisdhigh

Password: hisd

**Matching:**

Match the letter choices to the appropriate form of energy. Letter choices may be matched to more than one form of energy.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. Stretched bow |
|  |  |  | 1. Ball moving through the air |
|  |  |  | 1. Ball resting on the table |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Potential Energy |  | 1. Stored in chemical bonds and molecules |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Kinetic Energy |  | 1. Energy of Motion |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Chemical Energy |  | 1. Stored Energy |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Thermal Energy |  | 1. Vibrating atoms |
|  |  |  | 1. Energy inside a battery |
|  |  |  | 1. Sound moving through air |
|  |  |  | 1. Heat from the sun |
|  |  |  | 1. Energy in food |

**Part II: Examples**

*Directions: For each form of energy, define it using your own words. Then give an example (one not previously given) for each form of energy:*

**Ex:** Potential energy is stored energy. An example of potential energy is a ball sitting on a table.

**Potential Energy:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Kinetic Energy:**

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**Chemical Energy:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Thermal Energy:**

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**Part III: Multiple Choice Questions**

*Directions: Answer each of the following questions about the forms of energy. Make sure to explain your answer in the spot marked “Rationale”*

1. What is Energy?
   1. Anything that radiates light or heat
   2. Anything that travels in the form of a wave
   3. Any object in motion
   4. Anything that makes matter move or change

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of these objects has kinetic energy?
   1. A ball moving through the air
   2. A ball sitting on a table
   3. A ball buried underground
   4. A ball sitting on the edge of a cliff

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of these objects has the highest potential energy?
   1. A ball sitting on a table
   2. A ball resting on the ground
   3. A ball sitting on a mountaintop
   4. A ball thrown into the air

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following terms can be used in place of potential energy?
   1. Stored energy
   2. Motion energy
   3. Light energy
   4. Kinetic energy

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: Date: Period:

**Practice: Forms of Energy**

*Directions: Complete the following assignment individually.*

1. A runner eats a turkey sandwich before going out to exercise. He begins to run, and then starts to sweat. Which of the following best describes the movement of energy in this process?
   1. Potential 🡪 Thermal 🡪 Kinetic
   2. Kinetic 🡪 Potential 🡪 Thermal
   3. Potential 🡪 Kinetic 🡪 Thermal
   4. Thermal 🡪 Kinetic 🡪 Potential

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following is an example of thermal energy?
   1. Standing on a chair
   2. Ice cream melting on a hot day
   3. A baseball thrown at 95 mph
   4. The energy stored in a sandwich

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What type of energy is contained in a molecule of H2O?
2. Potential Energy
3. Kinetic Energy
4. Chemical Energy
5. Thermal Energy

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. When subjected to high pressure, carbon turns into a diamond. This pressure increases the temperature greatly, releasing a lot of heat. Which form of energy is responsible for the heat?
2. Potential Energy
3. Kinetic Energy
4. Chemical Energy
5. Thermal Energy

Rationale: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fill in the blank:**

*Directions: For each sentence, fill in the type of energy (Potential, Kinetic, Chemical, Thermal)*

1. Energy that is stored within an object is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
2. The vibration and movements of atoms and molecules within substance releases \_\_\_\_\_\_\_\_\_\_\_\_ energy.
3. A pen falling through the air is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy is the “energy of motion”
5. The energy stored in atoms or molecules is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

**Classify:**

*Directions: Choose the energy form (Potential, Kinetic, Chemical, Thermal) that best describes each situation*

|  |  |
| --- | --- |
| **Situation** | **Type of Energy** |
| Falling rocks from the top of a mountain |  |
| Heat from the sun |  |
| Energy contained in the molecules of food |  |
| Rubbing your hands together |  |
| A skier at the top of a mountain |  |
| A racecar traveling at maximum speed |  |
| Gasoline in a storage tank |  |
| A compressed spring |  |
| Boiling water in a pot |  |
| Chemical heat packs (before they are hot) |  |