

# REVIEW

## Chapter 2 : Lesson 2B

### 1. Select the correct options from the drop-down boxes to correctly complete the statements below :

Both Nuclear Fusion and Nuclear Fission are examples of how \_\_\_\_\_ can be transformed into \_\_\_\_\_. In the case of Nuclear Fusion, light atomic nuclei, such as \_\_\_\_\_, are \_\_\_\_\_ to release tremendous amounts of energy. In the case of Nuclear Fission, heavy atomic nuclei such as \_\_\_\_\_, are \_\_\_\_\_ to release tremendous amounts of energy.

### 2. Identify the main forms of energy present / represented in the following :

A skier at the top of a hill just before he starts his descent : \_\_\_\_\_

A skier skiing down a hill at high speed : \_\_\_\_\_

The batteries inside a flashlight : \_\_\_\_\_

The molecules inside an apple : \_\_\_\_\_

Burning coal or other forms of Fossil Fuels : \_\_\_\_\_

Using a SONAR to map the ocean floor : \_\_\_\_\_

Listening to a musical instrument : \_\_\_\_\_

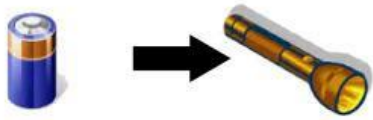
Warming up around a campfire on a cold night : \_\_\_\_\_

Photosynthesis in plants : \_\_\_\_\_

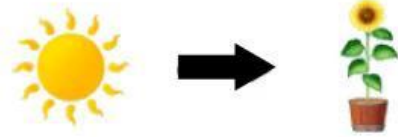
A stretched rubber band in a slingshot : \_\_\_\_\_

A dolphin using echo-location to locate food : \_\_\_\_\_

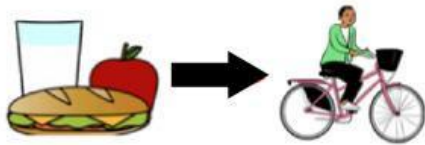
3. Identify the following Energy Transformations :



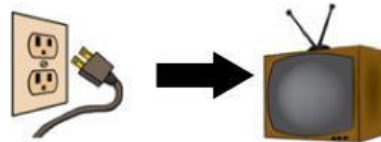
\_\_\_\_\_ into \_\_\_\_\_



\_\_\_\_\_ into \_\_\_\_\_



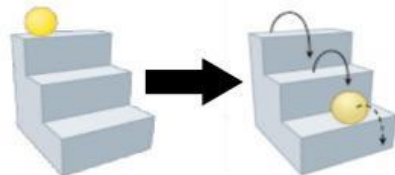
\_\_\_\_\_ into \_\_\_\_\_



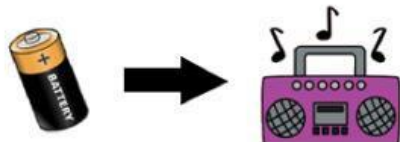
\_\_\_\_\_ into \_\_\_\_\_



\_\_\_\_\_ into \_\_\_\_\_



\_\_\_\_\_ into \_\_\_\_\_



\_\_\_\_\_ into \_\_\_\_\_

**4. Fill in the blanks, or select the correct options from the drop-down boxes to correctly complete the statements below :**

The 1<sup>st</sup> Law of Thermodynamics is also called the Law of \_\_\_\_\_ of Mass and Energy.

It states that Matter and \_\_\_\_\_ cannot be created or \_\_\_\_\_. It can only

be \_\_\_\_\_ into different forms, or \_\_\_\_\_ between two objects.

**5. Match up the Concept with the correct Definition :**

**Temperature**

The total Kinetic Energy of all the particles within a substance.

**Heat**

The average Kinetic Energy of all the particles in an object.

**Thermal Energy**

The movement or flow of Thermal Energy from a warmer to a colder object

**6. Identify the types of particle movement found within each of the following phases of a substance :**

| Phase  | Vibrational | Rotational | Translational |
|--------|-------------|------------|---------------|
| Gas    |             |            |               |
| Liquid |             |            |               |
| Solid  |             |            |               |

**7. Select the correct options from the drop-down boxes to correctly complete the statements below :**

The \_\_\_\_\_ of all particle motions within a substance, translates into the TOTAL Kinetic Energy of that substance, which in turn translates into the \_\_\_\_\_ of that substance.

The \_\_\_\_\_ of all particle motions within a substance, translates into the AVERAGE Kinetic Energy of that substance, which in turn translates into the \_\_\_\_\_ of that substance.

Thermal Energy is measured in \_\_\_\_\_, while Temperature is measured in \_\_\_\_\_.

When two substances are at the same Temperature, the substance with \_\_\_\_\_ particles, will have the higher Thermal Energy. When two substances are at different temperatures, the particles of the substance with the lower temperature will move \_\_\_\_\_.

**8. Select the correct options from the drop-down boxes to correctly complete the statements below :**

\_\_\_\_\_ is the temperature at which a substance exists in its solid, liquid and vapor phases simultaneously in equilibrium.

\_\_\_\_\_ is the temperature at which the particles within a substance have minimum motion.

The \_\_\_\_\_ temperature scale contains both positive and negative numbers. The \_\_\_\_\_ temperature scale contains only positive numbers.

9. Drag & Drop each of the following items into the correct box :

Releases Heat

Makes surroundings warmer

Makes surroundings colder

## Combustion Reactions

Ice melting

Water freezing

Absorbs Heat

## Photosynthesis

# Exothermic Process

# Endothermic Process

**10. Answer the following questions :**

10.1 What are the verifiable reference points called that scientists can use to calibrate instruments like thermometers ? \_\_\_\_\_

10.2 What is Absolute Zero on the Kelvin scale ? \_\_\_\_\_ K (no decimals)

10.3 What is Absolute Zero on the Celsius scale ? \_\_\_\_\_ °C (no decimals)

10.4 What is the Freezing Point of water on the Kelvin scale ? \_\_\_\_\_ K (no decimals)

10.5 What is the Freezing Point of water on the Celsius scale ? \_\_\_\_\_ °C (no decimals)

10.6 What is the Boiling Point of water on the Kelvin scale ? \_\_\_\_\_ K (no decimals)

10.7 What is the Boiling Point of water on the Celsius scale ? \_\_\_\_\_ °C (no decimals)