

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 : _____

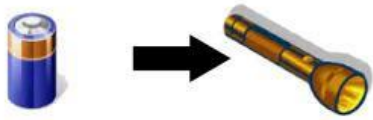
Warming up around a campfire on a cold night : _____

Photosynthesis in plants : _____

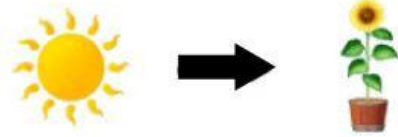
A stretched rubber band in a slingshot : _____

A dolphin using echo-location to locate food : _____

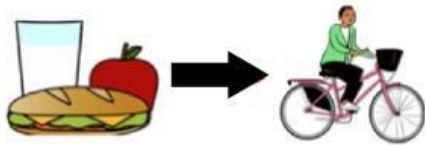
3. Identify the following Energy Transformations :



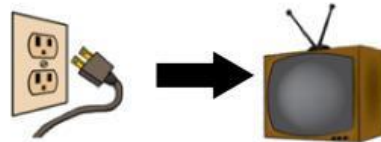
_____ into _____



_____ into _____



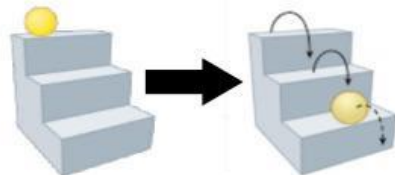
_____ into _____



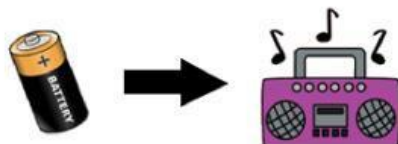
_____ into _____



_____ 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 1st 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

The diagram illustrates an exothermic process on a graph with Temperature on the y-axis and Time on the x-axis. The curve starts at a low temperature, rises to a peak, and then falls back to a lower temperature. The area under the curve is shaded light blue, and the text "Exothermic Process" is written in the top right corner.

[illegible]

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)