**YEAR 8 PHYSICS REVISION**

**ENERGY**

**Fill in the blanks below:**

Energy lets us do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Energy comes in many different forms. The unit used to measure energy is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. There are \_\_\_\_\_\_\_\_\_\_\_joules in a kilojoule and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_kilojoules in a mega joule.

Energy cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or destroyed. It can only be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to another object or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a different type of energy.

**In the table below list some different forms of kinetic and potential energy:**

|  |  |
| --- | --- |
| **KINETIC ENERGY** | **POTENTIAL ENERGY** |
|  |  |

**Energy flow diagrams show the transformation of energy in simple systems. Show the energy transformations that occur when you do the following:**

* **Turn on a light switch**
* **Turn on a car and begin the drive down the street**

**Energy transformations can often produce useful sources of energy and non – useful sources of energy. Energy efficiency measures how much useful energy is produced from the input source of energy. What is the equation we can use to find energy efficiency?**

**Use the above equation to measure the efficiency of the laptop. You will first need to identify the useful source/s of energy:**

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**500 MJ 100MJ 250MJ 150M**

**Electricity Heat + Light + sound**

**Kinetic energy is the energy of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ kinetic energy an object has the more work that can be done.**

**Circle to object that has the most kinetic energy in each scenario:**

** 50kg man running at 2m/s  80kg Big bird riding at 10m/s**

** 50 kg man running at 4m/s 70kg man riding at 10m/s**

**Potential energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Gravitational potential energy is affected by the mass of the object and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ above sea level.**

**When an object is dropped it transforms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Below is a picture of a ramp. Put an X at the spot where the ball has the greatest G.P.E**

**If each of these balls was released from the track which one (circle your answer) would have the most G.P.E? Explain your answer.**

**Chemical energy is a type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. This energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in objects. When this energy is accessed it is transferred into other forms of energy.**

**Complete the table below:**

|  |  |
| --- | --- |
| **Source of Chemical Potential Energy** | **How can the chemical potential energy be accessed?** |
| Battery |  |
| Food |  |
| Fuel |  |

**Chemical energy can be released as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in chemical reactions. There are 2 types of chemical reactions where heat is exchanged. They are called exothermic and endothermic. The table below summarises these reactions:**

|  |  |
| --- | --- |
| **Exothermic** | **Endothermic** |
| **The objects lose heat energy**  **The surroundings gain heat energy (feel warmer)**  **Examples:**  **Combustion – Burning wood on a bon fire. The air around the fire becomes warm.**  **Draw a diagram to show the flow of heat in an exothermic reaction:** | **The objects gain heat energy**  **The surroundings lose heat energy (feel cooler)**  **Examples:**  **Ice melting – When we hold ice in our hand it makes our hands cold because the ice block is taking the heat out of our hands.**  **Draw a diagram to show the flow of heat in an endothermic reaction:** |

**Elastic potential energy is stored in objects that are either \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**What are some sources of elastic potential energy?**

**What are some sources of heat energy?**

**What types of energy do the following objects have?**

* A cyclist riding a bike on flat ground \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A cyclist stopped on the road half way up a hill\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A battery being used in your phone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A battery not being used \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A bungee jumper who has jumped off the platform and the bungee cord is fully stretched \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A toasted sandwich \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A compressed spring \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_