**Absence work**

 **16 April 2020**

**Exothermic and Endothermic Reactions**

**Read the information below, then answer the questions that follow.**

The amount of energy in the universe is constant. It does not go up or down. We cannot create energy or destroy it. It only gets transferred from one place to another. This is incredibly important when thinking about chemical reactions. Chemical reactions involve taking particles, rearranging them and making them form bonds with each other. In order to rearrange the particles to make something new, you first need to break apart bonds. You then need to form new bonds. 

When a reaction takes place, energy can either be released, or taken in. If energy is released by the particles to the surroundings, it will feel hotter (temperature increases). This is referred to as an **exothermic reaction.** Two examples of how this can be used in everyday life are: hand warmers and self-heating cans. If energy is absorbed from the surroundings by the particles, it will feel cooler (temperature decreases). This is referred to as an **endothermic reaction**. An example of how this can be used in everyday life is in sports injury packs.

**Copy out the questions below and write your answers in full sentences.**

**Checkpoint questions:**

1. What happens to the energy in an exothermic reaction?
2. What does the energy from an exothermic reaction do to the temperature of the surroundings?
3. How will the product of an exothermic reaction feel?
4. What happens to the energy in an endothermic reaction?
5. What does this do to the temperature of the surroundings?
6. How will the product of an endothermic reaction feel?

**Copy the key knowledge table into your exercise books.**

Key knowledge- Do your look, cover, write check by learning the answers to the questions below.

|  |  |
| --- | --- |
| What is an exothermic reaction? | A reaction that transfers energy to the surroundings so the temperature of the surroundings increases (feels HOT) |
| Give 2 uses of exothermic reactions are: | - Self-heating cans- Hand warmers |
| What is an endothermic reaction? | A reaction that takes in energy from the surroundings so the temperature of the surroundings decreases (feels COLD). |
| Give 1 use of endothermic reactions : | - Sports injury packs |

**Complete the sentences below in your exercise book.**

Recall Quiz:

1. *In an exothermic reaction, the temperature of the surroundings will \_\_\_\_\_\_\_\_ because…*
2. *An example of uses of exothermic reactions are…*
3. *Endothermic reactions cause the temperature of their surroundings to \_\_\_\_\_\_\_\_ because…*
4. *An example of uses of endothermic reactions are…*

**Application Tasks- Copy and complete the texts below**

 **- I Do**

A portable hand warmer uses a reversible reaction to help keep gloves/hands warm in cold weather.

The reaction in a portable hand warmer is exothermic. I know this because…hand warmers cause the surroundings to become hotter

**– We Do**

When people suffer a sports injury, they can apply an instant cool pack to help minimise bruising/damage.

The reaction in an instant cool pack is endothermic. I know this because…

**– You Do**

A student reacted a piece of magnesium ribbon in air. They decided that the picture below showed that the reaction was endothermic.

The student is wrong in saying that this oxidation reaction is endothermic. I can tell because I see a …........ which suggests….......

**Independent Task**

Complete the table below, assigning each reaction as either exothermic or endothermic.

