**Topic Overview: Types of Reaction**

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|  | Ref | Outcome | Achieved | ☺ |
| Emerging | E9ScR1.1 | Know how to identify reaction is happening. |  |  |
| E9ScR1.2 | Know what combustion is |  |  |
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| E9ScR2.1 | Know the difference between physical and chemical reactions |  |  |
| E9ScR2.2 | Explain why carbon monoxide from incomplete combustion is dangerous |  |  |
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| Developing | D9ScR3.1 | Give examples of different types of reaction |  |  |
| D9ScR3.2 | Write word equations from information about chemical reactions. |  |  |
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| D9ScR4.1 | Explain why we see things happen in a reaction |  |  |
| D9ScR4.2 | Explain how Combustion is a reaction with oxygen in which energy is transferred to the surroundings as heat and light. |  |  |
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| Securing | S9ScR5.1 | Use particle diagrams to show what happens in a reaction. |  |  |
| S9ScR5.2 |  Recall that Thermal decomposition is a reaction where a single reactant is broken down into simpler products by heating. |  |  |
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| S9ScR6.1 | Explain observations about mass in a chemical or physical change. |  |  |
| S9ScR6.2 | Explain why a reaction is an example of combustion or thermal decomposition |  |  |
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| Mastering | M9ScR7.1 | Compare the pros and cons of fuels in terms of their products of combustion |  |  |
| M9ScR7.2 | Predict the products of the combustion or thermal decomposition of a given reactant and show the reaction as a word equation |  |  |
| M9ScR8.1 | Devise a general rule for how a set of compounds reacts with oxygen or thermally decomposes. |  |  |
| M9ScR8.2 | Balance a symbol equation.  |  |  |
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| M9ScR9.1 | Use mass of reactant in equation to determine mass of product eg magnesium and oxygen.  |  |  |
| M9ScR9.2 | Use known masses of reactants or products to calculate unknown masses of the remaining reactant or product. |  |  |

**Keywords**

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| **Fuel:** Stores energy in a chemical store which it can release as heat. |
| **Chemical reaction:** A change in which a new substance is formed. |
| **Physical change:** One that changes the physical properties of a substance, but no new substance is formed. |
| **Reactants:** Substances that react together, shown before the arrow in an equation. |
| **Products:** Substances formed in a chemical reaction, shown after the reaction arrow in an equation. |
| **Conserved:** When the quantity of something does not change after a process takes place. |