Learning Journey – 8A The Periodic Table

What have I done previously in my learning journey?	
Previously….	**You have learnt previously about atoms, elements and compounds. This has involved:** • Describing a simple (Dalton) atomic model • Explaining the differences between atoms, elements and compounds • Identifying elements and compounds from their chemical symbols and formulae
In this topic…	You will learn about the periodic table of the elements. This will involve learning about: • the varying physical and chemical properties of different elements • the principles underpinning the Mendeleev periodic table • the periodic table: periods and groups; metals and non-metals • how patterns in reactions can be predicted with reference to the periodic table • the properties of metals and non-metals • the chemical properties of metal and non-metal oxides with respect to acidity

We will develop our learning by studying the following each lesson:	RAG	Skills in Science checklist
8A.01 The Periodic Table • State that the modern periodic table is a development of other scientist's work. • Identify metals, non-metals, groups and periods on the periodic table. • Describe the location of elements on the periodic table.		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
8A.02 Metals and Non-Metals • Explain how elements are classified as metals and non-metals • Use patterns to classify an element as a metal or a non-metal		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application Communication
8A.03 Patterns in the Periodic Table • Describe what is meant by chemical and physical properties • Use patterns to predict properties of elements • Explain how the position of an element can be used to suggest properties of elements		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
8A.04 Reactions of Metals and non-metal oxides • Describe how metals and non-metal oxides react with water. • Describe how metals and non-metal oxides react with water using word equations and symbol equations.		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
8A.05 Elements of Group 1 • Make simple observations about the reactivity of Group 1 metals in water • Use patterns to predict properties of Group 1 elements • Interpret data to explain patterns in properties of Group 1 elements.		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
8A.06 Elements of Group 7 • State what happens in a displacement reaction • Identify risks of using Group 7 elements using the hazard symbols associated with them • Write word equations to represent displacement reactions		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
8A.07 Elements of Group 0 • Describe the physical and chemical properties of Group 0 elements • Use patterns to predict properties of Group 0 elements		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication

Key Vocabulary

periodic table	**periods**	**groups**	**metals**	**Non-metals**	**alkali**	**reactivity**	**Electrons**	**shells**
predictions	**reactions**	**group 1**	**group 7**	**group 0**				

Future Learning	At GCSE you will learn that the periodic table provides a structured organisation of the known chemical elements. The historical development of the periodic table and models of atomic

	structure provide good examples of how scientific ideas and explanations develop over time as new evidence emerges. The arrangement of elements in the modern periodic table can be explained in terms of atomic structure which provides evidence for the model of a nuclear atom with electrons in energy levels
In careers	By knowing the structured organisation of the known chemical elements, chemists can make sense of their physical and chemical properties. It also allows chemists to identify patterns and make predictions about how an element might react. Massive research projects are undertaken every day by large pharmaceutical companies, governments and universities. These projects can take place over several continents, in several languages and in different laboratories but they are all held together by the common language of the periodic table and the science that underpins its construction.