SCIENCE YEAR 8 - TERM 2.1

I ANALYSE

(Comparing, identifying relationships, and interpreting data)

1. I can analyse the pH scale and relate it to the strength of acids and alkalis.
2. I can compare strong and weak acids and alkalis based on concentration and pH.
3. I can analyse how changing variables affects the strength of an electromagnet.
4. I can interpret how different factors affect the generator and motor effects.

I PRACTISE

(Hands-on investigations and data collection)

1. I can measure and record the pH of different substances using indicators.
2. I can carry out experiments to investigate neutralisation and collect data.
3. I can build and test electromagnets, changing number of coils or current.
4. I can investigate how magnetic fields interact in electric motors.

I APPLY

(Using scientific knowledge in real-life or unfamiliar contexts)

1. I can apply my understanding of acids and alkalis to household products.
2. I can explain how neutralisation is used in medicine and agriculture.
3. I can apply the principles of electromagnetism to explain how motors work.
4. I can relate the motor and generator effects to real-world technologies.

I SOLVE PROBLEMS

(Reasoning, using logic and scientific knowledge to find solutions)

1. I can solve problems involving changes in pH during a titration.
2. I can predict the products of a neutralisation reaction.
3. I can troubleshoot an electromagnet to improve its strength.
4. I can explain why a motor might stop working using knowledge of forces and fields.

I READ

BBC BITESIZE - Acids and Alkalis, Magnetism
CGP Revision Guide – Pages 80 to 90, 158 to 161

I LEARN

CHEMISTRY - ACIDS AND ALKALIS

1. The pH scale
2. Investigating acids and alkalis
3. Concentration
4. Neutralisation
5. Products of neutralisation

PHYSICS - MAGNETISM

1. Magnets
2. electromagnets
3. The Motor Effect
4. The generator effect
5. Electric motors

SCIENTIFIC SKILLS

SCIENCE YEAR 8 - TERM 2.2

I ANALYSE

(Interpreting processes, identifying patterns and cause-effect relationships)

1. I can analyse how gas exchange occurs in the lungs and leaves.
2. I can explain how exercise, asthma and smoking affect breathing.
3. I can compare trends and reactivity across Group 1, Group 7, and Group 0 elements.
4. I can interpret changes that indicate a chemical reaction is occurring.

I SOLVE PROBLEMS

(Applying logic and scientific understanding to unfamiliar or data-based scenarios)

1. I can explain how gas exchange systems are adapted for efficiency.
2. I can solve problems using balanced chemical equations.
3. I can use particle models to explain reactions between group elements.
4. I can predict outcomes of reactions using the periodic table.

I APPLY

(Using learned knowledge in real-life or applied contexts)

1. I can apply my knowledge of breathing to health and lifestyle choices.
2. I can apply photosynthesis understanding to farming and food production.
3. I can use chemical reaction knowledge to explain changes in everyday substances.
4. I can relate the reactivity of elements to their position in the periodic table.

I PRACTISE

(Carrying out investigations and developing practical skills)

1. I can measure breathing rate and link it to physical activity.
2. I can investigate how light intensity affects the rate of photosynthesis.
3. I can carry out tests to observe signs of chemical reactions.
4. I can model how group elements react through safe demonstrations.

I READ

BBC BITESIZE – Photosynthesis, Breathing and Respiration, Chemical equations, Group 1, 7 and 0 Elements

CGP Revision Guide – Pages 18 to 21, 56 to 58, 78 -79.

I LEARN

CHEMISTRY - CHEMICAL REACTIONS

Signs of a chemical reaction, Representing a chemical reaction – Equations, Group 1 elements, Group 7 elements,Group 0 elements

BIOLOGY - STAYING ALIVE

Gas exchange, Breathing, Exercise, asthma and smoking

Photosynthesis, Measuring the rate of photosynthesis

SCIENTIFIC SKILLS