

# SCIENCE KS3



## Cells

How do cells differ and what are their components used for?

## Body systems

How do different human body systems function? (for example the structure and function of the respiratory system)



**Biology**

## Reproduction

How does the human body change through puberty and reproduce at a cellular level?

## Particles and their behaviour

How can particle theory be used to explain different substances?

## KEY



**Biology**



**Chemistry**



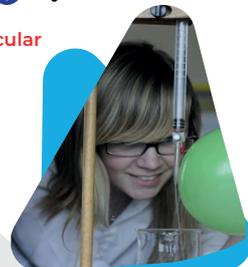
**Physics**



**Maritime**



**Cross curricular**



## Elements, atoms and compounds

How are particles arranged to form elements, compounds and mixtures?

## Reactions

What are chemical reactions and how do they occur in terms of energy and particles?



**Maritime project: Visit from the Shipwreck Museum – What stress does diving put on our bodies?**

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**YR7**



## Space

What can be found within our solar system, and how do planets and moons differ?



## Light

How does light travel and interact with different surfaces?

## Sound

How does sound and why are we able to hear it?



## Acids

What are acids and alkalis and how are they used and measured?



## Forces

What are forces and how do they interact with each other?



**Technology**



**Maritime project: Strength of fibres**

**Technology**



**Maritime project: How will sails of the future be designed?**



## The periodic table

What is the periodic table and how do different elements react?

## Metals and acids

What factors affect the rate of reaction between metals and acids?

## Separation techniques

How can you separate different mixtures of materials?



**Geography**

## The Earth

How are the different rocks on Earth formed and what gases are in the atmosphere?



## Electricity and magnetism

How does electricity travel and how can we combine it with magnetic fields?



## Energy

What is energy and how is it transferred?



## Motion and pressure

How can we calculate speed and pressure and how do marine insects walk on water?



## Adaptation and inheritance

What are the differences between genetic and environmental inheritance?

## Health and lifestyle

How are different food molecules digested and used?



## Ecosystems and photosynthesis

What animals and plants live around us and how do they rely on each other?

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**Maritime project: Visit from the Hampshire and Isle of Wight Wildlife Trust – How do environmental changes affect the wildlife locally?**



**YR9**

**Technology**



**Maritime project: What impact have advances in material science and technology had on the maritime industry?**



## History of the particle model

How did each scientist develop the model of the atom?

## Changes of state

How could you calculate the energy involved in materials changing state?

## Motion

How do speed and velocity differ and how can you measure it?



## Cell structures and reactions

How are some cells specialised to be suited to their roles?

## Respiration

What is the difference between aerobic and anaerobic respiration and when does each take place?

## Photosynthesis

What are the conditions required for photosynthesis to work best?

## Biological detection

How is Biology used to identify suspects of a crime?



## The particle model

How can you use particles to explain substances changing state?

## Atomic structure

What particles are within an atom and how are they arranged?

## Structure and bonding

How do elements combine and what happens with their electrons?



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## Separation techniques

How do you decide which separating technique to use, based on the mixture, and analyse the results?

## Properties of materials

How can the type of bonding affect melting point?

## Chemical detection

How can Chemistry detect crimes such as drink driving?



## Newton's Laws

How can we use Newton's Laws to explain movement of an object?

## New technologies in Physics

How is Physics used in your phone and your home?



## Cell differentiation

How do stem cells differentiate to form different cells?

## Circulatory system

How does our circulatory system operate as a double circulatory system?

## Plant transport systems

How do xylem and phloem transport nutrients and water around plant structures?

**KS4**