

# Year 7 Science

## Term 6



Biology topics: Biomass, sampling and photosynthesis  
Chemistry topics: Introduction to chemical reactions  
Physics topics: Levers

### Previous topics:

Previously in the year we have studied:

There are risks in the lab and there are ways we can keep ourselves safe.

All living things are made from cells, they are organised further to make organisms.

All matter is made of atoms. Different types of atoms are different elements. Atoms can be arranged as elements, compounds and mixtures.

Forces can cause objects to move accelerate or decelerate, this includes gravity, friction and air resistance. We can measure speed, acceleration, and other forces.

How does DNA make us who we are?

How can we sort living things?

How did living things evolve?

What's the point of breathing?

How do cells get what they need?

What does 'pure' mean?

How can we purify substances?

What is the periodic table?

What is electricity?

How does a magnet work?

Light and sound waves are different, what makes them both waves?

### Next topics:

Nutrition and Diet health

Patterns in reactions

Energy resources and heat

Solar system and astronomy

### Core knowledge/skills/concepts

How do plants get what they need?

How do living things depend on each other?

How can particle theory be used to explain the physical properties of materials?

What happens to atoms in a chemical reaction?

How could you lift a lorry?

## Year 7 Science

### Terms 3, 4 and 5



#### Essential vocabulary

Photosynthesis, pollination, producer, consumer, primary, secondary, tertiary, pyramid of numbers, chlorophyll, minerals. Solid, liquid, gas, physical, chemical, density, mass, volume, energy, state, temperature, substance, reversible, irreversible, reactants, products.

Lever, pivot, load, moment, stable, unstable, weight, clockwise, anticlockwise.

#### Threshold concepts

Producers harness energy through photosynthesis. They are at the bottom of the food chain and are consumed by primary consumers, which are in turn consumed by secondary and tertiary consumers. Minerals are essential for plant growth.

Pollination is essential for a healthy ecosystem.

Physical changes include melting, freezing, boiling, condensing, these occur due to particles changing arrangement when the amount of energy they have changes. Chemical reactions occur when bonds are broken and made turning reactants into products. There are common observations during a chemical reaction. Density is a physical property of substances calculated by mass divided by volume.

Moment can be calculated by force multiplied by distance. The principle of moments states that an object will be balanced if the clockwise moments are equal to the anticlockwise moments about the pivot. Levers have many useful applications.

#### Opportunities for reading

BBC bitesize <https://www.bbc.co.uk/bitesize/subjects/zng4d2p>

BBC Newsround Science news stories <https://www.bbc.co.uk/newsround>

The Smart Science book will be used in lesson time.

#### How and when will the core learning be assessed?

There will be lots of opportunities for formative assessment and TRIO in class time.

Educake homework once a fortnight, these tests a wide range of knowledge, key words and concepts then provide students and staff with feedback.

#### Links to other topics/subjects

These topics have built on the core knowledge from terms 1 and 2 and will set students up with the core knowledge they need to continue their study through the rest of Year 7 and into Year 8.

Moments calculations links to Maths.

# Curriculum 'Glossary' and guidance



Students are learning about..... at this point in Year 7 because...

The 'why this and why now?' question

**Previous topic:** To support understanding of how the curriculum is sequenced

**Next topic:**

## Core knowledge/skills/concepts

Aspects that must be known without compromise and retained in the long-term memory (think of it as a checklist for teachers and students to work towards securing)

## Essential vocabulary

Tier 2 as well as Tier 3

Tier 2= valuable academic words that appear across the school curriculum e.g evaluate, authority, indicate (our 'word of the week' comes for Tier 2 vocabulary lists)

Tier 3= subject specific vocabulary

## Threshold concepts

'Gateway' concepts that are essential for students to be able to progress onto more complex ideas. In other words, they require mastery before moving onto other concepts.

## Opportunities for reading

## How and when will the core learning be assessed?

Formative assessment to inform responsive teaching and TRIO opportunities as well as summative assessment.

## Links to other topics/subjects

(we will create time to come together to really explore these)