

Matter

Why do some substances exist as solids and others as gases? What is the difference between solids and liquids? Why do some objects float on water and others sink? How can the density of objects be compared?

Matter makes up everything. All objects in the universe are made of particles and it is the arrangement of these particles that determines their properties. Different materials can exist as solids, liquids or gases at room temperature, which means their particles are arranged in different ways.



This is the **third** unit we are studying as part of the big idea: **Energy is Conserved**

In this unit we will learn about energy in particles and how they are arranged in the different states of matter and their properties. We will look at density and how to measure it, as well as how particles exert pressure.

We will develop our mathematical skills in this unit by practising substitutions into equations.

We will develop our practical enquiry skills in this unit by doing an investigation into how the density of regular and irregular shaped objects can be measured.

TASKS:

What subject will this unit focus on? BIOLOGY CHEMISTRY PHYSICS
(circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

To answer before the unit:





1. What are you most excited to learn about in this topic?

2. What do you already know about this topic?

3. Why do you think it's important to learn about how energy is conserved?

4. What knowledge from previous science lessons might help us?

5. What questions do you have about this topic?

To answer at the end of the unit:

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.
2. What have you most enjoyed about this unit?

3. What more would you like to learn about forces as part of the big idea: 'energy is conserved'?

Teacher guidance:





The purpose of this resource is to provide students with an overview at the beginning and end of each unit. It is designed to create a discussion about the unit prior to the sequence of lessons.

The unit scope should be read as a guided reading activity. Tier 3 vocabulary has been highlighted. It may need to be adapted further for LPAs or pupils with different reading ages.

There are a range of ways to use this resource.

1. Display on a slide for students to read as a class. Direct students to complete the activities in their book.
2. Print off for students to stick into their book at the beginning of the unit along with their knowledge organiser. Complete as a guided reading task together. Direct students to complete the activities.
3. Have students complete as part of a booklet.
4. Set as a homework prior to a unit.

If you have any feedback about how this resource could be used/improved, please contact the science mastery team: sciencemastery@arkonline.org

