



## Guidance information 2020

### Learning modules

**Section 1** Standards | Previous Learning | Skills and Concepts | Tier 2 Vocabulary

**Section 2** Core Knowledge | Dual coded | Graphically Organised | Tier 3 vocabulary

**Section 3** Learning Questions | Sequence | Literature Spine

**Section 4** Quizzing

**Section 5** Vital Vocabulary

**Section 6** Knowledge Notes

**Section 7** Digital image resources


# SECTION 1

STANDARDS

PREVIOUS LEARNING

SKILLS AND CONCEPTS

## TIER 2 VOCABULARY



**SCIENCE**


Forces and Magnets

Year 3  
Spring Term









**Forces and magnets**

- compare how things move on different surfaces
- notice that some forces need contact between 2 objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having 2 poles
- predict whether 2 magnets will attract or repel each other, depending on which poles are facing

Previous learning



Year 1  
Everyday materials

Year 2  
Uses of everyday materials

Ask relevant questions	Set up simple, practical enquiries and comparative and fair tests	Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers	Gather, record, classify and present data in a variety of ways to help in answering questions	Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests	Identify differences, similarities or changes related to simple, scientific ideas and processes
------------------------	---	---	---	--	--	---	---

Academic and elaborative vocabulary (Tier 2)

consequence	result or effect	factor	a thing that affects a decision or situation
assume	believe without proof	similar	things that are very alike
		define	tell or show something very clearly

Intellectual content and design copyright © 2019 Unity Schools Partnership  
 Image(s) used under license from Shutterstock.com | Partnership and content support Curriculum Visions



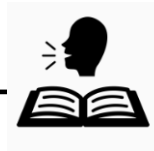
National Curriculum expectations



Previous studies to be aware of and refer to content



Skills and Concepts that can be taught and applied. Highlighted in blue to show opportunity



Tier 2 - academic and descriptive vocabulary that can be explicitly displayed - modelled in spoken language and written sentences

National Curriculum

Familiarise yourself with the expectations, so that you know exactly what you are teaching.

Previous studies

Be aware of these and refer to them in your teaching.

Skills and concepts

Plan provision for pupils to know how to use these. They may need direct instruction to begin with. Don't assume pupils know how to be skilful.

Tier 2 vocabulary

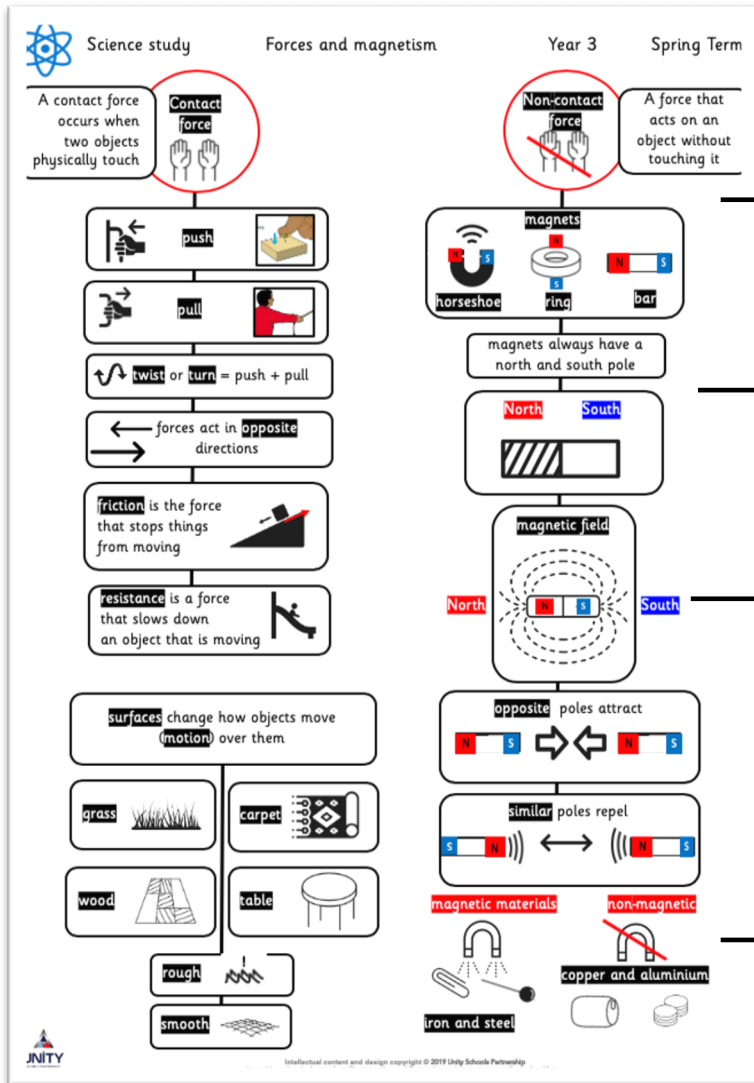
You could hand write these words and strategically use them on a display board. Exemplify using spoken language and their place in written sentences.

# SECTION 2

CORE KNOWLEDGE DUAL CODED GRAPHICALLY ORGANISED

## TIER 3 VOCABULARY

For pupils to refer to through pre-reading, post-reading, retrieval and spaced practice. Flick back and make marks to show you have used / remembered or quizzed someone



Tier 3 and vital words are highlighted in black and explanations given

Essential knowledge and vocabulary to be acquired as a minimum

Diagrams used to explain concepts

**WORKED EXAMPLE**  
Enlarge to A1 or poster size and display on a working wall. Make marks and annotate it to show pupils how to use it. Keep it available and refer to it even after the study has finished

Examples and non-examples are communicated

Tier 3 vocabulary

Professional and subject specific vocabulary is articulated and explained.

Essential knowledge

The minimum expectation for knowledge – elaborated further in the knowledge notes.

Dual coding and diagrams

Support with simple icons and diagrams to explain and help pupils remember content and concepts.

Worked examples and non-examples

Use as modelled teaching resource (my turn) and make it clearly visible in the classroom. Use it to support discrimination, critical thinking and curriculum connections.


# SECTION 3


LEARNING QUESTIONS


SEQUENCE

LITERATURE SPINE


Learning questions that form the sequence of learning


 Forces and magnets study summary

Suggested Lesson	Learning question	Question
1	What are contact forces?	1 and 2
2	How do surfaces affect the motion of an object?	1 - 4
3	How does friction affect moving objects?	1 - 7
4	What is a non-contact force? How is this different to a contact force?	1 - 9
5	How do magnets attract and repel?	1 - 13
6	Which materials are magnetic? Forces and magnetism summary 	1 - 16

 Curriculum Visions Resources and video books

Other books



 Intellectual content and design copyright © 2019 Unity Schools Partnership

**Lessons:**  
these can 1 or 2 sessions, depending on your school organisation. Usually about 1 ½ - 2 hours in duration

Cumulative quiz questions

Literature Spine - suggested non-fiction digital / paperback books

**Lessons** Suggested teaching order for the curriculum content

**Learning Question**

Questions that lead the sequence of learning. You can introduce the question at the beginning of the lesson, teach the content, and then at the end of the lesson ask, "so how could you answer this question, given what you know?" Good opportunity for flicking back in pupil books to retrieve content.

Can also be used as a quick oral or written retrieval strategy at the start of the next lesson.

Questions have been sequentially built into the sequence of learning. Can be used in several ways:

**Cumulative quiz**

1. complete the whole quiz and mark it. Pupils then refer, edit and amend their answers as they progress through each stage of the teaching sequence (metacognition). Take the end quiz to remember taught content and improvements.
2. cumulatively - questions are used at the start and end of lessons to support pupils with retrieving and applying taught content. Question sets increase in size as lessons progress.

**Literature Spine**

Requires Curriculum Visions subscription - resources to support teacher knowledge. Very useful digital books with videos embedded. Used for class read. Screen capture used to get images to prompt pupils and think aloud



## SECTION 4


**QUIZZING** is primarily a **learning strategy** to improve retrieval practice – the bringing of information to mind.

It is commonly misunderstood and thought only as an assessment strategy

Click on the link below to import this quiz to your Socrative account

<https://b.socrative.com/teacher/#import-quiz/43656268>

It's most effective if you use these questions through cumulative quizzing

 socrative

AB Year 3 Forces and Magnets Score: \_\_\_\_\_

1. Select the **contact forces**  
 A push  
 B gravity  
 C pull  
 D twist or turn  
 E magnetism
2. Is **resistance** a force?  
 A Yes - resistance is a force.  
 B No - resistance is not a force.
3. **Resistance** is a force that...  
 A speeds up an object.  
 B slows down an object.  
 C doesn't affect an object.  
 D I'm not sure.
4. A rough surface will...  
 A help an object move quickly.  
 B slow an object down or stop it.  
 C I'm not sure.
5. **Friction** is...  
 A the force that stops things moving.  
 B the force that helps things move better.  
 C I'm not sure.
6. **Friction** opposes the the movement of an object.  
 A True  
 B False

Page 1 of 3

Intellectual content and design materials © 2019 Unity Schools Partnership

**Digital** - download the quiz directly to your Socrative account  
(Useful to check correct answers)  
([www.socrative.com](http://www.socrative.com))

### Questions

Written in order to support the teaching sequence

- Multiple choice
- True or False
- Open answer
- Distributed to pupils digitally through Socrative app or website
- Or print PDF and give to each child

**Digital** Access the complete quiz and images to use with your class.

There are 3 options for quizzing in Socrative. Select the one you want in the delivery settings before distributing a quiz.



Teacher Paced



Open Navigation



Instant Feedback

### Quizzing

This gives you total control and will allow you to start or stop the quiz, using specific questions related to the lesson you are teaching .

Allows pupils to take the whole quiz in any order. They can go back to check their answers before submitting the quiz.

Pupils freely access the questions in sequential order.

### Lesson by lesson

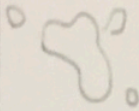




Quiz at the start of a study, throughout the study and at the end. Build questions into the teaching sequence.



# SECTION 5

## VITAL VOCABULARY

On-going example from Year 6

Word	What it means	Clue
Plasma	A yellowy liquid that makes up 55% of our blood.	
Platelets	Round cells that turn spiky when there is a cut or injury and help blood clot.	
Capillaries	The smallest of the blood vessels with thin, fragile walls that allow new nutrients to pass through.	
Atrium (1) Atria (2)	Top 2 chambers of our heart. Blood enters the heart through these chambers	
Ventricle (1) Ventricles (2)	Bottom two chambers of our heart. Blood exits our heart through these chambers.	








**USE AS A WORKED EXAMPLE**

Enlarge to A1 or poster size and display on a working wall next to your knowledge organiser. Model how to write and keep a record of vital vocabulary. Keep it available and refer to it even after the study has finished.

If the page is completed – glue another one along the top and flick between the two.

## SECTION 6

### KNOWLEDGE NOTES - Core knowledge Vocabulary

1 What is a contact force?	
A contact force occurs when two objects physically touch	
	
boot + football = contact force	
	push away
 Does wind push or pull?	
	pull towards
	Do round things roll all by themselves?
	twist or turn - pushing or pulling
<b>WORKING SCIENTIFICALLY</b>	
How are contact forces used in the classroom, PE or with toys?	
	

### MODEL

concrete examples



### SEQUENCE

steps



### CHECK

using elaboration or thinking aloud



### SCAFFOLD

difficult tasks



### ENCOURAGE and INCREASE

independence and accurate transfer of vocabulary and knowledge



### GUIDE

retrieve, recall, flick back



### SUPPORT

collaborative learning



### REDUCE

**split-attention effect** - this is where pupils divide their attention between too many sources to acquire content. A diagram that has a paragraph to explain it increases cognitive load.



**redundancy effect** – reduce unnecessary information or photographs. This where too much clutter can distract from the essential content. Simple icons and key vocabulary ease cognitive load.



## KNOWLEDGE NOTES

- Elaborate and support retrieval practice for essential vocabulary and concepts
- Can be used to retrieve previous knowledge throughout the teaching sequence
- Helpful in sequencing questions throughout the study or theme
- Communicates knowledge and vocabulary clearly
- Scaffolds difficult vocabulary / concepts
- Activates pupil productivity and retention because it does not limit space on a worksheet.

## SECTION 6

Activate **RETRIEVAL PRACTICE** during lessons and go beyond quizzing

Have a word with yourself!

 <b>Retrieve two things</b> – show what you know	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
 <b>Connect</b> – add one more thing to what you know	
<hr/> <hr/>	

This will need **MODELLING** with **WORKED EXAMPLES** to start with

ENCOURAGE and INCREASE the practice of remembering essential vocabulary and knowledge:

- Used during the lesson or afternoon.
- Every pupil has one of these printed out to write on. (It's important that pupils write)
- NOT a paired task.
- Ask pupils to write down 2 pieces of information they remember from the lesson without referring to their books or each other. (you are activating individual retrieval practice)
- Continue with the lesson or task.
- NOW a paired activity - return to the 2 things they wrote down. Ask them to check what they wrote for accuracy and share what they remembered with each other.
- Now add one more piece of information. Use to share and build collaborative knowledge.
- At the end of the lesson simply glue down the left-hand side and place as a flap over their tasks.




# SECTION 6

## KNOWLEDGE NOTES



Core knowledge Vocabulary

Year 1


**What?**  
What are the four main parts of a plant?



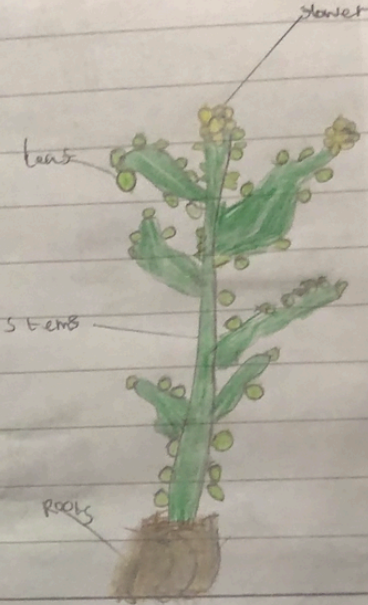
**Where?**



**How?**  
Flower  
Stem  
Roots  
Leaf



**Why?**  
anchors carries turns  
supports absorbs  
water nutrients  
captures pollen




The roots attracts water and food. The flower makes the bees come to it and insects to. The leaves helps the flower have energy. The stem keeps the root up.

# SECTION 6





## KNOWLEDGE NOTES

### Core knowledge Vocabulary

Year 3

<p>Draw</p> 	<p>Define</p> <p>Palaeolithic means the old stone age.</p>
<p>Origin</p> <p>Palaeo = old lithic = stone</p>	<p>Sentence</p> <p>In the palaeolithic times the stone age people hunted mammoths for food and to stay warm.</p>

<p>What</p> <p>To know the three periods of The Stone Age</p>	<p>Thursday 3rd October 2019</p>
<p>When</p> <p>800,000BC - 10,500BC Palaeolithic</p>	<p>To know about the Palaeolithic Age.</p>
<p>Who</p> <p>Early Britons</p>	 <p>They used to hunt woolly mammoths for food and also for clothing.</p>
<p>Where</p> <p>Britain Doggerland</p>	<p>It was very cold. The Stone Age was Nomadic. They lived <sup>near</sup> <del>were</del> animals but if they didn't live <del>near</del> animals they would die. Britain was connected to Europe by Doggerland.</p>
<p>Vocabulary and definitions</p> <p>Palaeolithic - Old Stone Age Ice Age Nomadic Woolly Mammoth, Woolly Rhinoceros, Hyena, Deer, Hares</p>	 <p>They <sup>gathered</sup> <del>ate</del> berries to paint and eat them.</p>
	<p>Which animals do we no longer see and why?</p> 



# SECTION 6

## KNOWLEDGE NOTES

Core knowledge Vocabulary

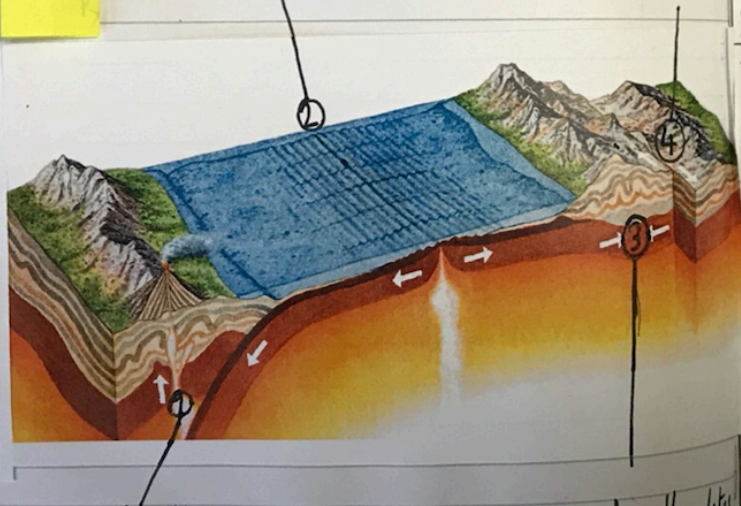
Year 5

10: Link tectonic plate boundaries and some natural disasters

<p><b>Question</b> What happens at tectonic plate boundaries?  What natural disasters do we get along these boundaries?</p>
<p><b>Vocabulary</b>  fault: A long crack in the surface of the earth representing a weak point in the crust and mantle</p>
<p><b>Features:</b> <u>Mountain range</u>  Trench <u>Volcano</u> <u>Earthquake</u></p>
<p><b>Facts:</b>  About 75% of the world's active volcanoes are underwater.</p>
<p><b>Challenge question:</b>  Why are some volcanoes found in the middle of a tectonic plate?</p>

When plates ~~pull~~ pull apart it opens up space for the lava to come up to the surface through the volcano belt. When this happens it forms volcanoes not earthquakes.

When plates scrape along side each other it can make volcanoes and earthquakes such a tight lock no magma can get through but you can still get earthquakes.



When plates crash together sometimes the plate pushes down into the mantle making space for lava to come up and forms volcanoes and possibly earthquakes. Sometimes when the plates wash together they go up and make mountain ranges.



# SECTION 7

## DIGITAL IMAGE RESOURCES

Accompanying the learning modules are digital resources with high quality images for schools to use in lessons.

On licence from Shutterstock and for educational use.

Magnetic fields of a horseshoe and bar magnet

