

Beaumont School

Study Skills

Key Stage 3

Retrieval
strategies

flashcards



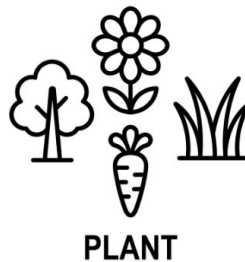
page 7

brain
dump



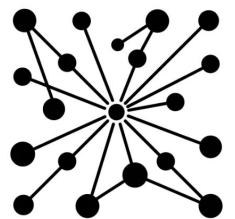
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concrete
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Key Stage 3 Study Skills: Introduction

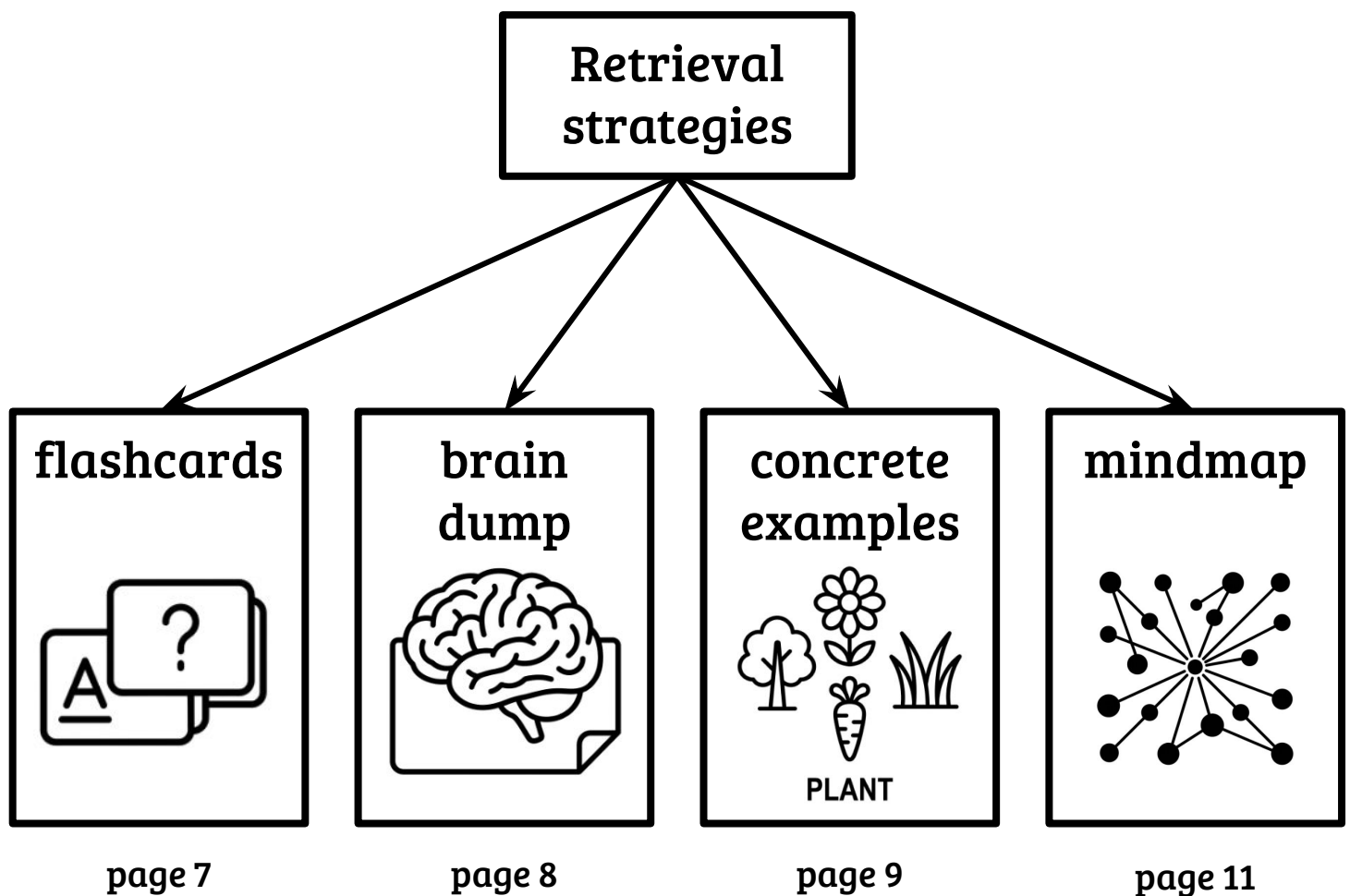
At Beaumont we pride ourselves on our excellent teaching, but students will benefit most from this if they also develop strong independent study skills. Learning how to learn is challenging, so we aim to support students to develop skills appropriate to the stage of their education.

Effective study skills fit into three broad areas: organising, retrieving and practising using information and skills.



The more we recall, use and think about something we are learning, the more likely it is that it will be remembered for the long-term. **A fundamental strategy is retrieval - recalling and using knowledge from memory.** Developing good habits of retrieval practice at Key Stage 3 will support learning when students need to become more independent further up the school.

This guide provides an introduction to how learning happens, along with some examples of strategies to develop habits of retrieval practice. We hope it will be helpful to you in supporting your child with their studies at home.



How does your brain learn?

1. **Learning means storing information and skills in long-term memory**

Your brain works like a store cupboard - you need to be able to get information in and out so that you can make use of it. Practising recall helps you to get better at this.

2. **Organise what you need to learn**

Before you can learn or check you have learned something you need to know what you need to know. Summarising important knowledge can be a really helpful starting point.

3. **Retrieval practice is key**

Instead of just reading through your notes or revision guide, you should test yourself and practise bringing information up from your memory. This builds stronger memory pathways in your brain.

4. **Spaced revision beats cramming**

Studying a topic over several sessions spaced out over time is much more effective than doing it all at once. Revisit a topic several times before an exam for powerful revision.

5. **Practise using what you know**

Explaining a topic to another person (or yourself) forces you to organise and practise recalling the information. Answering practice questions is also a great way to strengthen memory.

The three stages of study



Top Revision Tips

- ✓ At KS3 you should focus on retrieval, this helps ensure that you will be able to remember things in the future, not just for a test this term or this year.
- ✓ The following pages give some ideas of what retrieval practice might look like. The key thing is to recall things from your memory.

Spaced Practice

- ✓ Space your learning out
- ✓ The more times you revisit, the better



Your memory gets stronger with each spaced review

- ✓ Flashcards ✓ Mindmaps
- ✓ Quizzes ✓ Past papers

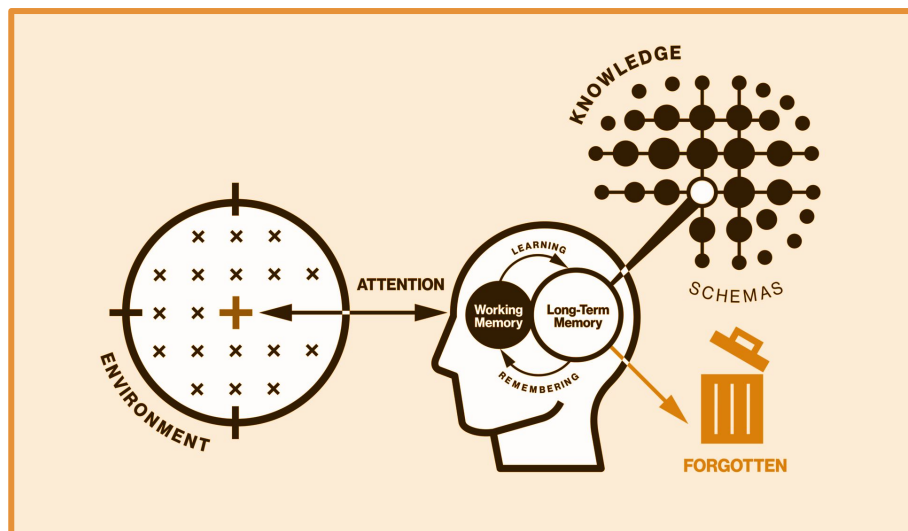
The Simple Model of Memory

2. Things which distract us from paying attention prevent us from learning so well.

What things distract you? What could you do to reduce these distractions when studying?

3. Working memory is what you are using when you think about something or bring knowledge to mind to help you solve a problem or answer a question.

1. We learn things which we pay attention to in our environment - reading, watching, listening.



4. Long-term memory is the store of all the things you have learned which you can recall to mind. The better you have learned it the easier it is to recall and use. You can think of it as the mindmap of knowledge within your mind.

6. Practising using what you have learned forces you to remember it or retrieve it from long-term memory. This makes the memory stronger and easier to remember the next time.

5. Information which we don't recall regularly gets forgotten. Regularly reviewing learning helps to prevent forgetting and strengthen memory.

Myths about learning

It's important to understand how you learn because there are lots of unhelpful ideas in existence which might lead to you spending time doing less effective things. Knowing about these can help you to study in the best way possible. Some of the most common myths about learning are:

1. A good revision method is to re-read and highlight the information you need to learn

Studies show that students who use this method of revision do not remember as much information as those who revise using retrieval practice. This is probably because retrieval practice means they have to think harder about the content, so they benefit from desirable difficulties.

2. We learn things more effectively when we work in our favourite learning style (e.g. seeing, listening or doing)

It is true that people have preferences about their style of learning, but it makes no difference to how much they learn. It is much more sensible to base the style on what you are learning. Some things can be learned best by seeing (e.g. watching a painting technique in Art), some by listening (e.g. hearing an explanation in History) and some by doing (e.g. practice questions in Maths)

3. A good revision method is to make summary notes of all the topics you have learned

This is another commonly used revision method which is not strongly supported by research. It can be a really helpful first step to make sure you know what you need to learn but it is not enough. Studies show that students who use retrieval practice are more likely to remember the information than those who make summary notes.

**Remember that using good study strategies can help you to learn more.
Spending time studying is worth it - it makes you cleverer, but only if you
study in the right ways.**

Study Strategies for retrieval



Retrieve the information you need to know from your memory. Some ways you can do this are:



Flashcards (more detail on page 7)

Every time you bring a memory to mind, you strengthen it. Using flashcards is a great way to do this. Start by making simple **'question and answer' flashcards** with a question on one side and the answer on the other. Make sure you write questions and answers for all the important information in the topic.

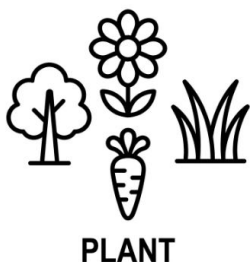
You can then use your flashcards to **test yourself**, putting the cards into two piles - the ones you know and the ones you couldn't remember: test yourself on these ones more frequently.

You might also want to get a friend or someone at home to test you.



Brain Dump (more detail on page 8)

All you need for this retrieval strategy is a pen and a piece of paper. Choose a topic and **write down everything you know** about it from memory. It's good to try and organise the ideas you're writing down, but the most important thing is to recall as much information as possible. You can then use your notes to check what you have remembered and add anything you forgot. It might be helpful to make flashcards of the information you didn't remember so that you can test yourself on this later.



Concrete Examples (more detail on page 9)

It is important to learn the **general ideas, concepts and definitions** in a topic, but you will find it really helpful to have lots of **concrete examples to show what they really mean**. Select a concept or definition and see if you can come up with some concrete examples which represent it. What do all the examples you have selected have in common? If you can answer this, it will help you to understand the concept better.

For example, 'algorithm' is an abstract concept.

Definition: A set of rules or steps that leads to the solution of a problem or task.

Concrete examples: A recipe to make a cake, instructions about how to use the photocopier, the steps you use to solve a mathematical problem.

Study Strategies - how to use them

Flashcards

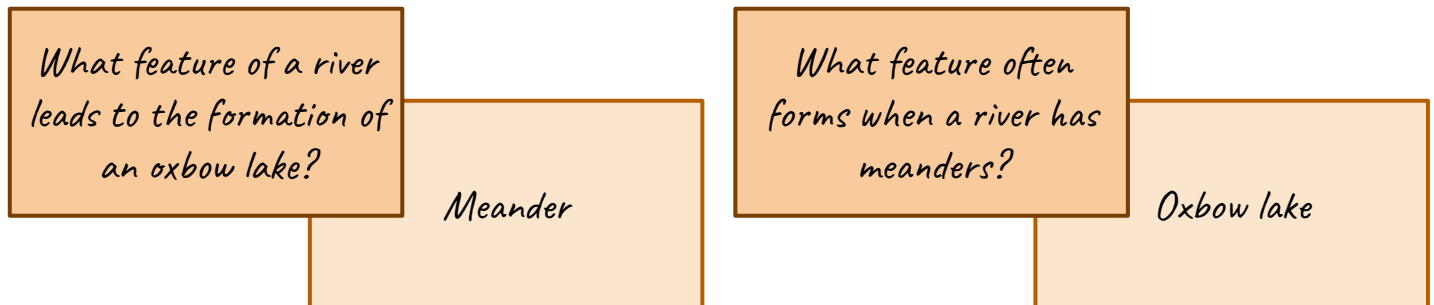


Making flashcards

Using ready-made flashcards to revise will certainly help you to remember more, but the most effective strategy is to make them yourself because this makes you think. You can make physical flashcards or electronic ones.

How to make your flashcards effective

- Write a single question on one side and the answer on the other.
- Make sure the questions cover all the key information - e.g. definitions, explanations, comparisons.
- Break complex concepts down across multiple flashcards
- Write multiple flashcards which test the same knowledge in different ways - this helps to make your knowledge more flexible.



- To stretch yourself further, try adding specific examples to the answer side of your flashcards (see 'Concrete Examples' on page 9).

Using your flashcards

- Say the answer **out loud** - it is important that you fully commit to what you think the answer is before checking. Even better, write your answer down.
- Use the flashcard both ways - can you say what the question was by looking at the answer?

The Leitner System

Electronic flashcard apps might do this for you, but you can use the Leitner System to help you to review the flashcards you're less confident with more frequently.

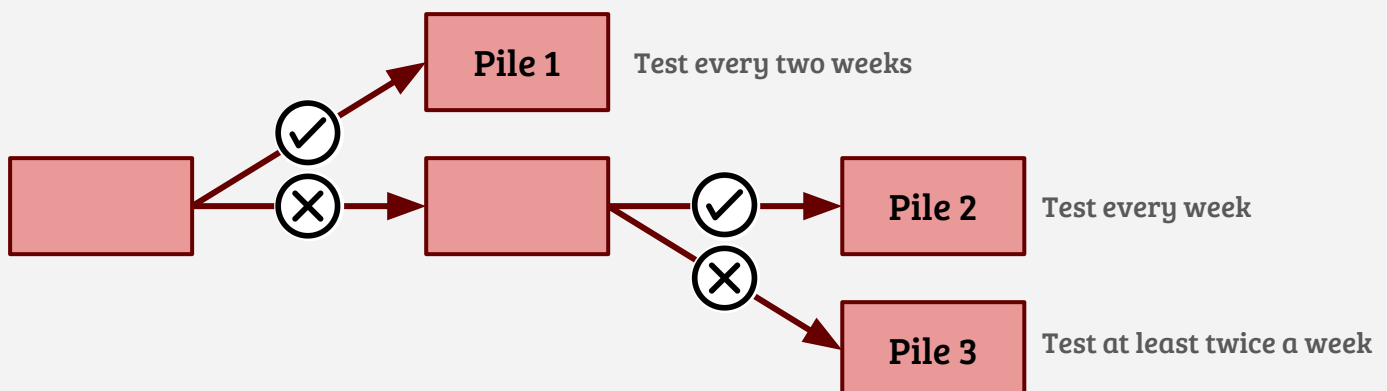
1. Test yourself on a flashcard
2. If you know the answer, put it in one pile. If not, put it in another.
3. Test yourself again on the cards you didn't know.
4. Again, put them into two piles.

You should test yourself on cards in Pile 1 every two weeks.

You should test yourself on cards in Pile 2 every week.

You should test yourself on cards in Pile 3 twice a week.

When you get a card from pile 2 or 3 correct, you can move it into the next pile up. Or if you get a card in pile 1 wrong, you can move it into pile 2 to test more often.



Study Strategies - how to use them



Brain dump

- Set a timer (10-15 minutes).
 - On a blank sheet of paper write down everything you know about a topic.
 - Use your class notes, textbook or revision guide to check, correct and add.
- Use a different colour so that you can see which things you need to come back to.

Your brain dump can be continuous prose or you might prefer to make it like a mind map, showing the connections between different concepts.

NATURAL HAZARDS
Hazard: a natural event which has the potential to cause harm to people and/or property.
Types of Natural Hazards
Geographical Hazards
• Landslide - a collapse of a mass of earth or rock from a mountain or cliff.
• Volcano - a vent in the earth's crust through which magma is ejected.
• Tsunami - a large wave caused by an earthquake or other disturbance.
• Earthquake - violent shaking of the ground, typically within the earth's crust.
Hydro-meteorological Hazards
• Storm - a violent disturbance of the atmosphere with strong winds.
• Flood - an overflow of water beyond its normal limits.
• Wildfire - a large, destructive fire that spreads quickly over woodland.
• Drought - a prolonged period of abnormally low rainfall.
TECTONIC PLATES
• Tectonic plate - a big slab of the Earth's surface that is continuously moving and occasionally causing major earthquakes.
• Convection currents pull plates in various directions when they meet.
Disasters
Disasters happen where all tectonic plates meet. They occur in long narrow belts where plates meet.

Diagram: Layers of the Earth
The diagram shows the Earth's layers: Crust (8-65 km thick), Mantle (2900 km thick), and Core (Inner Core (1260 km thick) and Outer Core (2200 km thick)).
Crust (8-65 km thick)
• It is the thinnest layer.
• They are two types:
- Oceanic crust (comes under)
- Continental crust (comes over land)
• The exact thickness varies: it is thinner where there are oceans and thicker where there are mountains.
Mantle (2900 km thick)
• Largest layer. Top part is hard but near to the core, it is runny.
• Convection currents (currents carrying heat) are created due to the heat from the centre of the Earth.
Inner Core (1260 km thick)
• It is the hottest layer (1000°C).
• Temperature at the centre is 5500°C.
Outer Core (2200 km thick)
• Made of semi-molten material called magma.
• Liquids consisting of iron and nickel.

Diagram: Factors that affect vulnerability
A circular diagram with 'VULNERABLE PEOPLE' in the center, surrounded by 'HAZARD' and 'DISASTERS'. Factors include: age, wealth, defenses, housing quality, rapid urbanisation, and high population.

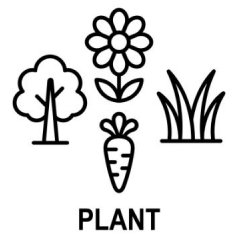
Diagram: Types of Plate Boundaries
Constructive Plate Boundary
1) Two oceanic plates move away from each other.
a) Magma rises to fill the gap.
b) This creates small gentle volcanoes or cools down to form new crust.
c) Earthquakes may be caused as the plates slide away from each other.
Destructive Plate Boundary
1) A continental and oceanic plate meet.
a) The denser (heavier) oceanic plate is forced to sink under the continental plate.
b) Friction during this causes earthquakes.
c) Oceanic plate also melts due to friction and turns to new magma in the mantle.
Conservative Plate Boundary
1) Two plates slide past each other.
a) They are not smooth so they get stuck.
b) Pressure starts to build up.
c) Eventually, the plates jerk forwards (slip along the fault line) to cause earthquakes.
Collision Plate Boundary
1) Two continental plates with the same density collide.
a) The plates are forced upwards and crumple to form fold mountains.
b) This creates large earthquakes.
c) E.g. - India and the Himalayas.

Diagram: Paper 1: The Challenge of Natural Hazards
A central cloud-like shape with the title 'Paper 1: The Challenge of Natural Hazards'.

Management
Prediction
• Seismometers - measure for shocks before the main earthquake.
• Abnormal animal behaviour (e.g. dogs howling, rats fleeing).
• Temperature, pressure and release of different gases increase.
• Measuring pressure along fault lines.
Preparation
• Earthquake plans.
• Regular drills (people informed and in practice).
• Services such as police, fire, and ambulance kept ready.
• Organising emergency supplies (e.g. food).
• Warning system (phones and TV).
• Earthquake resistant buildings.
• Preparation taught in school (e.g. Japan).

Diagram: The Cold War Crisis 1958-70
A complex mind map centered on 'The Cold War Crisis 1958-70'.
Czechoslovakia Prague Spring
1968
• Soviet Union invaded Czechoslovakia.
• Led to the end of the Prague Spring.
**Cuban Missile Crisis1962
• US discovered Soviet missiles in Cuba.
• Led to a 13-day standoff.
• Ended with the removal of Soviet missiles from Cuba.
Cuban Revolution
1959
• Fidel Castro led the revolution.
• Overthrew the US-backed government.
• US became hostile to Castro.
Bay of Pigs Invasion
1961
• US-backed invasion of Cuba.
• Failed.
Missile Crisis
1962
• US discovered Soviet missiles in Cuba.
• Led to a 13-day standoff.
• Ended with the removal of Soviet missiles from Cuba.**

Study Strategies - how to use them



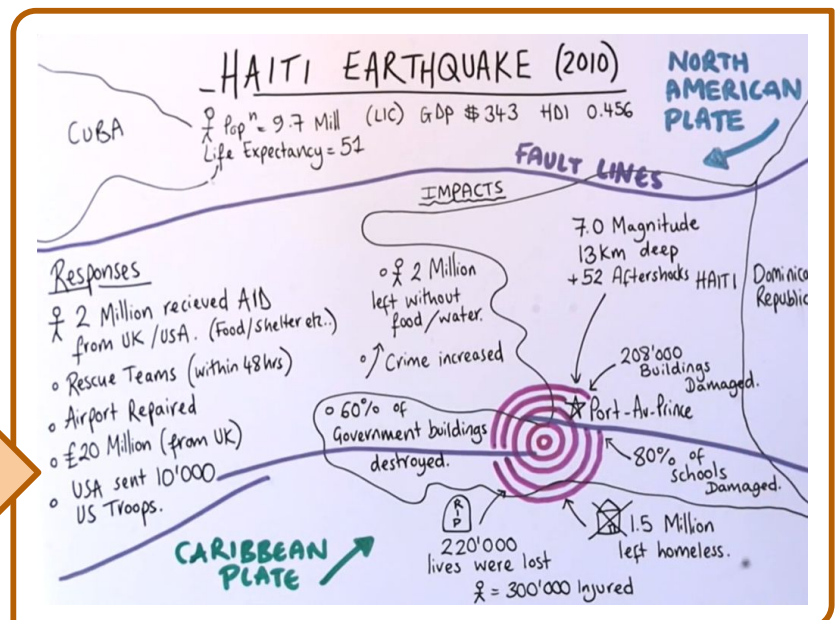
Concrete examples

Whether you're summarising your notes in a mindmap or making flashcards to test yourself, **it is really helpful to make sure you can give specific examples of the general ideas you need to know.** This might be case studies of natural disasters in Geography, quotes to support character traits in English or examples of organs in the body in Science.

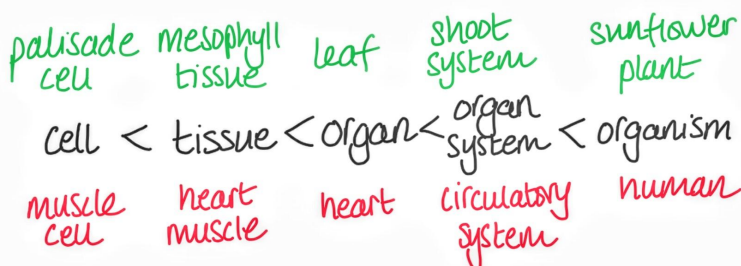
Making sure you know these examples and how they relate to the general concept will ensure that your knowledge is more secure and transferable. If you know several examples it will help you to apply your knowledge when exam questions ask about different examples which you might not have seen before.



In English, as well as knowing what a character is like, you should be able to give concrete examples of quotes which demonstrate this.

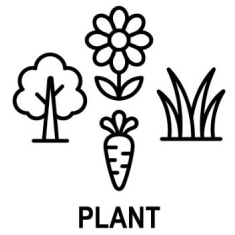


In Geography, as well as knowing the general effects of earthquakes, you should be able to give examples of the effects of specific earthquakes

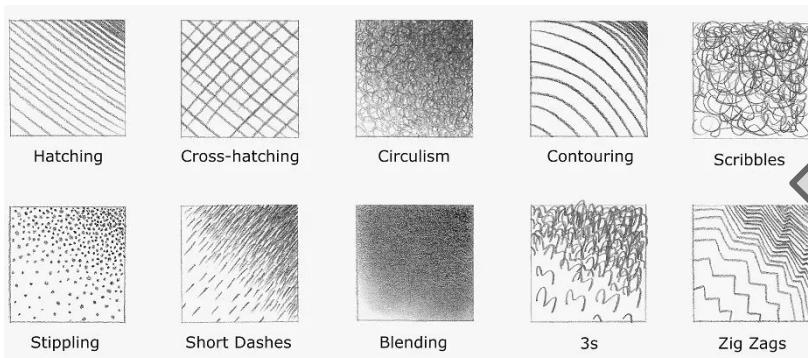


In Science, as well as knowing the levels of organisation in an organism, you should be able to give examples of each level.

Study Strategies - how to use them



Concrete examples of using concrete examples

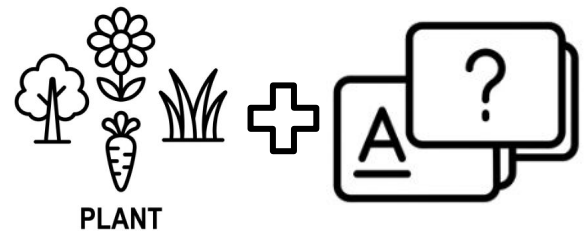


In Art, as well as knowing the names of shading techniques you should be able to show what they look like.

In Computer Science, as well as knowing what a programming language is you should be able to give examples of different languages.



Adding **concrete examples** to **flashcards** can help you to remember examples or case studies of abstract concepts



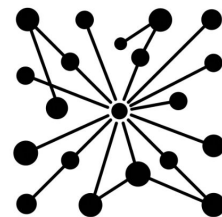
What is an organ system?

A group of different organs working together to perform a function.

Simple flashcard
answer
&
with added
concrete example

*A group of different organs working together to perform a function.
Example: The digestive system which breaks down foods and contains organs such as the stomach, gall bladder and intestines.*

Study Strategies - how to use them

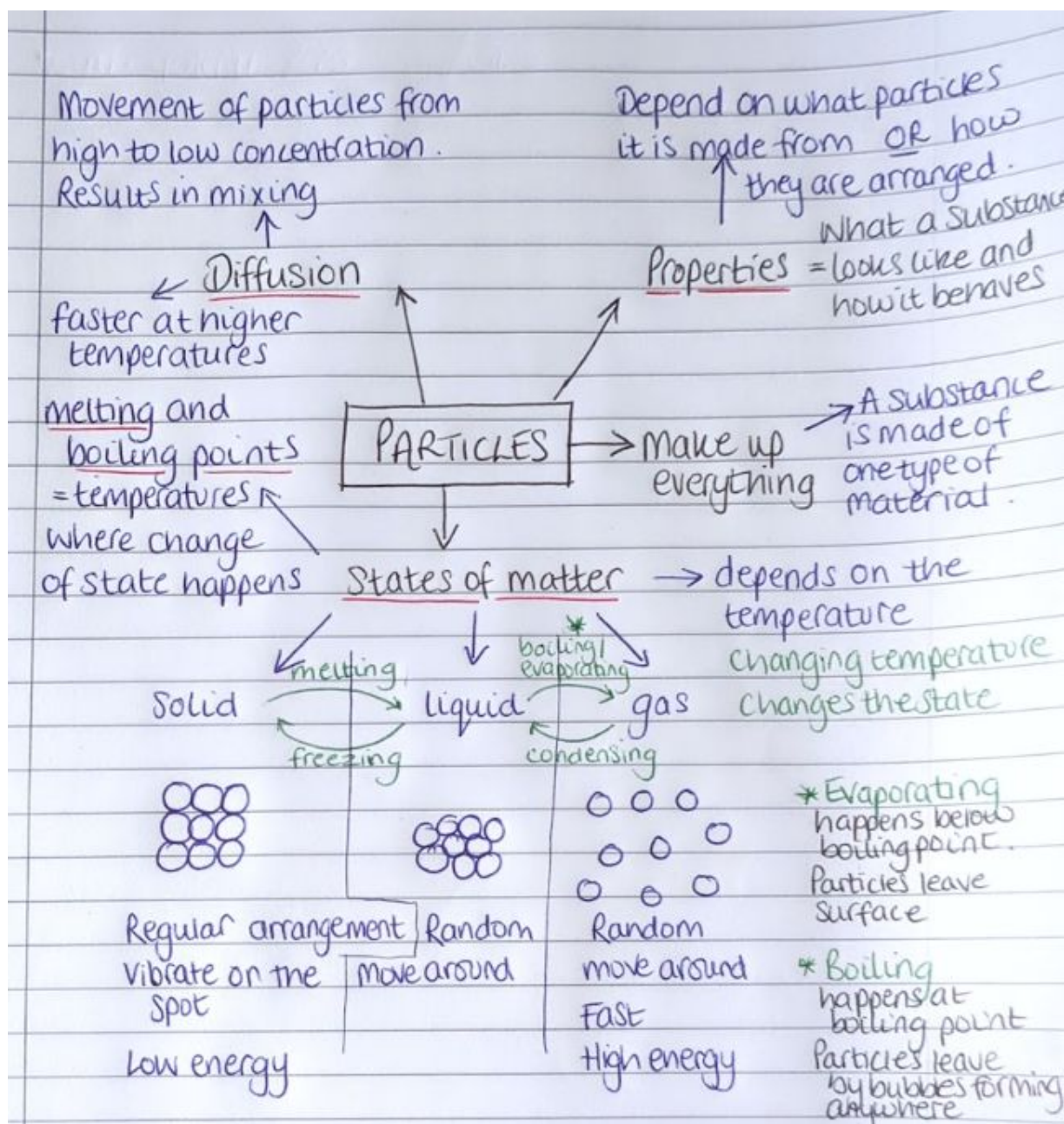


Mindmapping

Making a mindmap is an excellent way to **organise** your knowledge because you can show how different ideas relate to one another. If you make a mindmap from memory, it can also be an excellent **retrieval** strategy. You can add words to the arrows to show how different ideas link together. As with all revision strategies, make your mindmap from memory first and then improve it by looking things up.

Some examples of mindmaps are shown below and on the next page:

An example of a mindmap for KS3 Science::



Online Resources

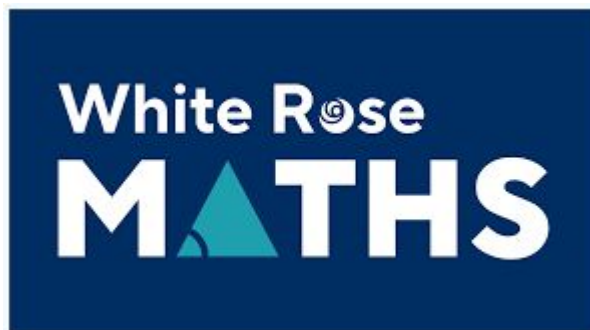
There are lots of excellent online resources, but it can be difficult to know which are the best ones.

Your teachers will signpost online resources for you on Google Classroom.

Some of the sites your teachers will recommend are shown below:



Google Classroom



Sparx Reader

Sparx Maths

