

STEM Student Support Pack



Contents

| | |
|--|----------|
| An introduction to self-regulation and metacognition (student pack) | 3 |
| | |

| | |
|--|----------|
| What are 'self-regulation' and 'metacognition'? | 3 |
| | |

| | |
|-----------------------------------|----------|
| Self-regulation strategies | 4 |
| | |

| | |
|----------------|---|
| Prioritisation | 4 |
|----------------|---|

| | |
|--------------|---|
| Distractions | 5 |
|--------------|---|

| | |
|---------------------------------|----------|
| Metacognitive strategies | 6 |
| | |

| | |
|-----------------|----------|
| Planning | 6 |
|-----------------|----------|

| | |
|--------------------|---|
| Graphic organisers | 6 |
|--------------------|---|

| | |
|------------------------------|----|
| 'Knowledge of' planning grid | 11 |
|------------------------------|----|

| | |
|-------------------|-----------|
| Monitoring | 12 |
|-------------------|-----------|

| | |
|-------------------|----|
| Content checklist | 12 |
|-------------------|----|

| | |
|---------------|----|
| Key questions | 13 |
|---------------|----|

| | |
|----------|----|
| Flow map | 14 |
|----------|----|

| | |
|---------------|----|
| Warning signs | 15 |
|---------------|----|

| | |
|-------------------|-----------|
| Evaluation | 15 |
|-------------------|-----------|

| | |
|--------------|----|
| Exam wrapper | 16 |
|--------------|----|

| | |
|------------------------------|----|
| Answering directed questions | 17 |
|------------------------------|----|

| | |
|---------------------------|----|
| Informing future planning | 18 |
|---------------------------|----|

| | |
|--------------|----|
| New strategy | 18 |
|--------------|----|

| | |
|-----------|----|
| PMI grids | 19 |
|-----------|----|

| | |
|------------------|----|
| Learning diaries | 20 |
|------------------|----|

| | |
|-------------------|-----------|
| Conclusion | 20 |
| | |

| | |
|--------------------------|-----------|
| Diagram templates | 21 |
| | |

An introduction to self-regulation and metacognition (student pack)

This short guide will provide you with everything you need to know about two incredibly important parts of learning: **self-regulation** and **metacognition**. It will also arm you with several ways you can start building these two areas into your day-to-day learning.

This pack will begin with an overview of the importance and definitions of self-regulation and metacognition. It will then move onto **two** practical strategies to improve your self-regulation, before looking at **12 planning, monitoring** and **evaluation** strategies to develop your metacognition. Each of these **strategies** will cover what the purpose of the strategy is, how it should be used, and provide you with an opportunity to put it into practice.

What are 'self-regulation' and 'metacognition'?

Research shows that the best learners are ones who are very good at self-regulating their learning and ones who use metacognitive strategies every day. Therefore, the better you are at self-regulation and metacognition, the better you are going to be at learning. But what are 'self-regulation' and 'metacognition'?

Self-regulation is your personal control over your learning behaviours. This means your ability to control your efforts, planning and motivation when you are completing work. When you improve your self-regulation, you improve as a learner. You become more focused, calm and motivated. You have clear priorities and understand that rewards might not be instant, but that your efforts will pay off in the future.

Metacognition is often called 'thinking about thinking'. This involves you thinking about your understanding of the different tasks you have, as well as the different strategies that you have available to complete those tasks. Metacognition is typically broken down into **planning, monitoring** and **evaluation**. An example may help to solidify your understanding of metacognition:

Imagine that you have been asked to make a cup of tea. In the planning stage, you would consider how to make that tea. Do you put milk or boiling water in first? When will you add the sugar? At this point, you are considering the best way to complete the task.

In the monitoring stage, you are considering if the task is going to plan. Is the tea the correct colour? Have you added the correct ratio of water and milk?

Finally, there is the evaluation stage. You have now handed over the cup of tea and you consider whether you were successful. Was the tea nice, or do you need to change the way you make it next time? Did you make any mistakes while brewing it, or was the way you went about making it successful? Which parts of the process will you do the same next time and which parts will you do differently?

Metacognition is the thinking behind your actions. If you consider the example, metacognition is thinking about why and how you are stirring the tea ('if I don't stir the tea, the sugar and milk won't be mixed') rather than directly thinking about the action of stirring the tea ('I am stirring the tea').

Now let's look at some practical strategies you can use to improve in these areas.

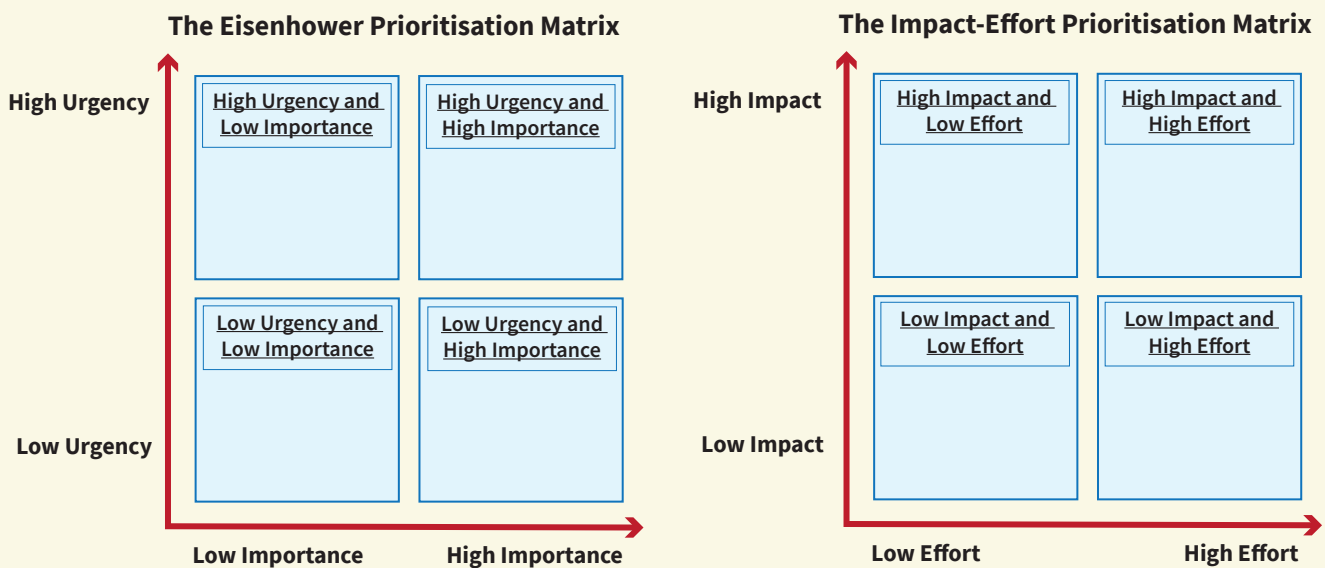
Self-regulation strategies

Prioritisation

How it works:

When you have multiple tasks to complete, you need to decide on the priority that you are going to place on each task.

There are two main ways that you can prioritise your work. Both methods involve using grids that are quick and easy to sketch. These two methods are called the Eisenhower Prioritisation Matrix and the Impact-Effort Prioritisation Matrix. The first grid helps you to prioritise tasks based on how urgent they are (how soon they need to be completed). The second grid helps you to weigh up the impact of a task (the change it will make) against the effort it will take to complete.



When you have a list of different tasks, you can put them into the box which you think they fit in. Perhaps getting revision done would go in the low urgency and high importance box on the Eisenhower Matrix and the high impact and high effort box on the Impact-Effort Matrix.

The Impact-Effort Matrix can also help you to prioritise revision topics. Use it to decide which topics are most important and most impactful. For example, they are worth a lot of marks in an exam or always come up as questions. You can then use this grid to determine which topics you need to spend the most time revising and those topics that you can spend less time revising.

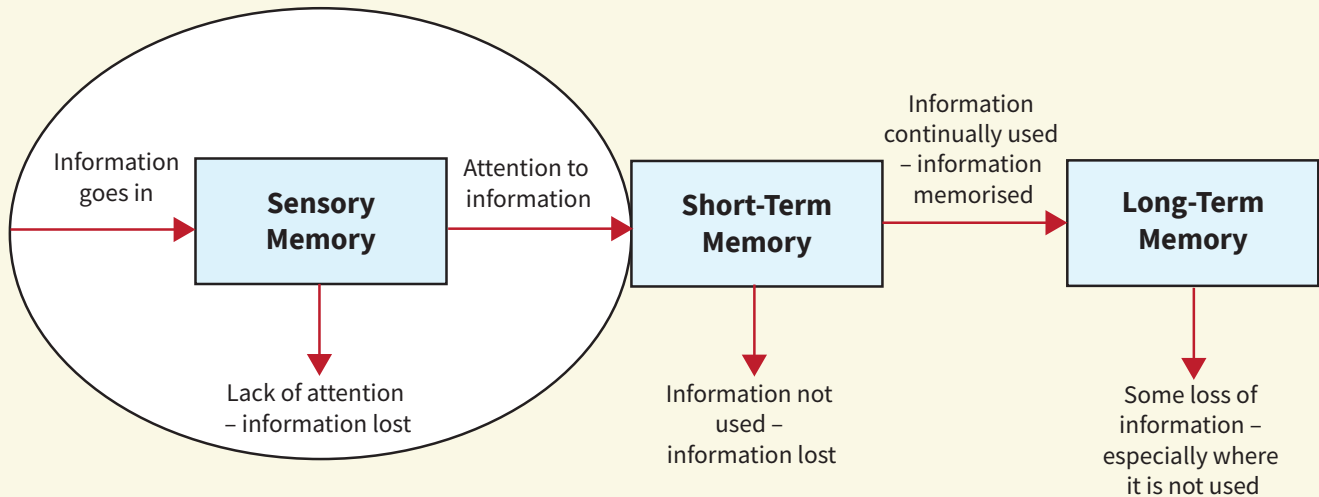
Your turn to use it:

Next time you have a lot of tasks to complete, sketch out one of the prioritisation grids. Place each of the tasks you need to complete in the box where you think it belongs and use this to help you decide what order you need to complete the tasks in.

Distractions

How it works:

Can you do your homework whilst you listen to music? Can you use Snapchat whilst you revise? Even if you think that you can, it's unlikely that you're working effectively. When you are focusing on multiple tasks at once, you cannot fully focus on each one. Your performance will start to dip.



The diagram shows why you won't learn properly if you are not fully focused on your work. Learning is where something moves into your long-term memory. Your long-term memory is where you store information that you always seem to remember, such as your name and address. To begin the process of learning, you need to focus on the information that you are provided with. This is the circled part of the diagram. If you pay attention to information, it can move to your short-term memory and then on to your long-term memory.

If information doesn't reach your short-term memory because you are distracted, you won't learn. Give yourself a chance to learn. Make sure that you remove distractions so that the tasks you are completing have the full attention of your brain.

So, when you are working, what should you do and what shouldn't you do?

DO:

- Have few or no distractions (e.g. no phones, music, TV... etc.)
- Have a good working space (e.g. a desk)
- Have good lighting (natural light, where possible) and a comfortable temperature (not so hot that you want to sleep, though!)

DO NOT:

- Listen to music
- Watch TV at the same time
- Talk to friends at the same time (through messages or in person)

Your turn to use it:

The next time you sit down to complete some work, take a moment to consider the distractions around you. For example, is the TV on or is your phone nearby? When you have identified distractions, remove as many of them as you can. If there are lots of distractions that you can't remove, then see if you can find somewhere else to work.

Metacognitive strategies

In this section, you are going to look at strategies for improving your metacognition in three key areas: planning, monitoring and evaluation.

Planning

Planning is the first major part of metacognition. It involves you considering:

- the different strategies that you have available to complete a task
- the advantages and disadvantages of each strategy you have
- any content knowledge you have that you will need to complete the task (such as key definitions, dates, formulas...etc.).

There is a saying that you might be familiar with: 'By failing to prepare, you are preparing to fail.' If you don't spend time planning how to complete a task, then you aren't going to complete it as well as you would have done if you had spent time planning. The planning strategies in this pack will help ensure that you are as prepared to complete a task as you can be.

Graphic organisers

This is a visual planning strategy. Graphic organisers are diagrams you can draw that contain different sections to support your planning for a task or revision for an exam. There are multiple different types of graphic organisers. Each one focuses on a different area of thinking. This pack will explain four of these: the Frayer Model, the bubble map, the flow map, and the multi-flow map. Each organiser supports a different type of thinking, and so you need to pick the one that is most appropriate to the task that you are completing.

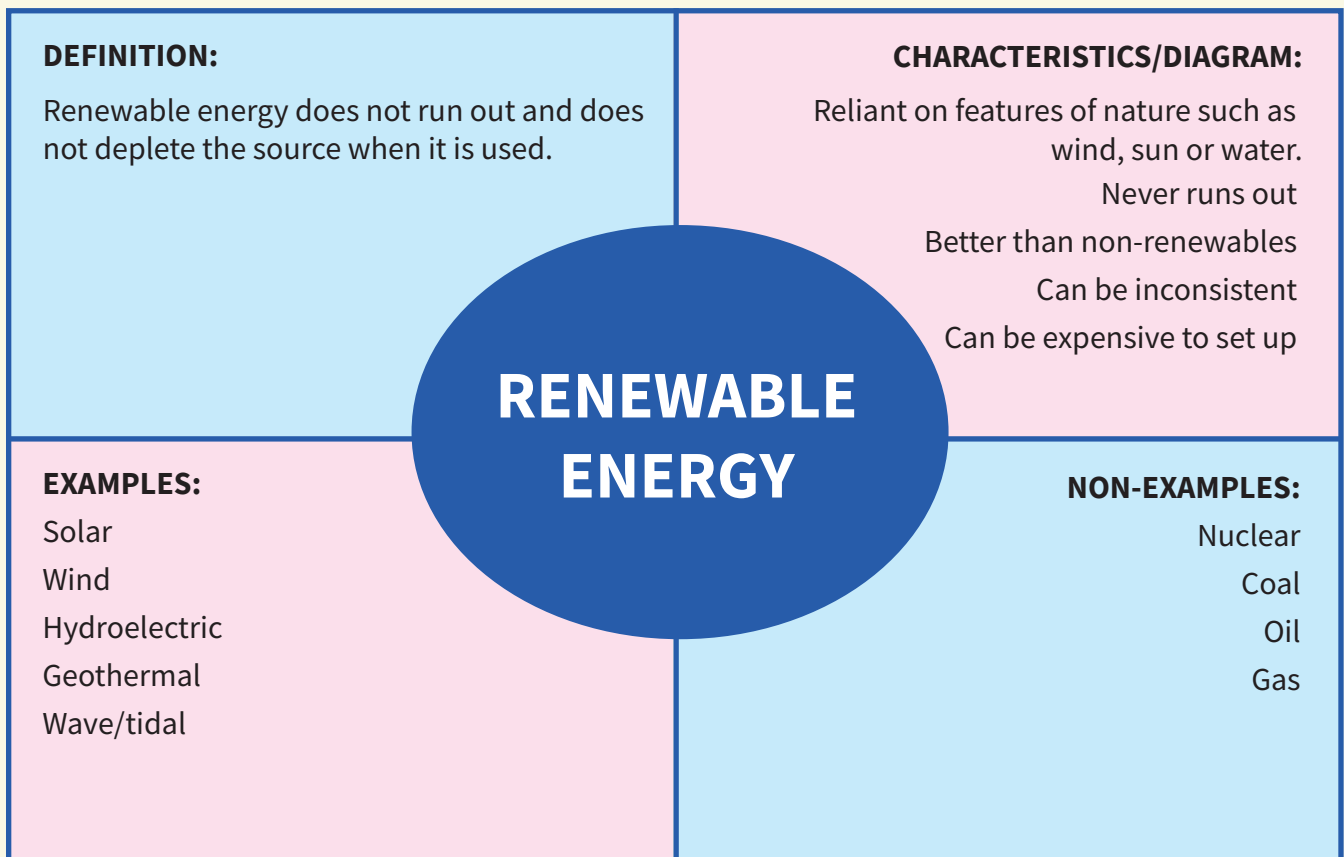


Frayer Model

How it works:

The Frayer Model is a graphic organiser you would use for **summarising**. A Frayer Model has four separate sections with the topic that you are covering in the centre. The four sections of the model are **definition**, **characteristics/diagram**, **examples**, and **non-examples**. Depending on the topic, you might want to change one of these titles. For example, you could have a **method** box, rather than a characteristics box.

The Frayer Model is extremely simple to draw: simply split your paper into four equal boxes. When you have drawn your model, you then just need to fill in each of the boxes with as much information as you can.



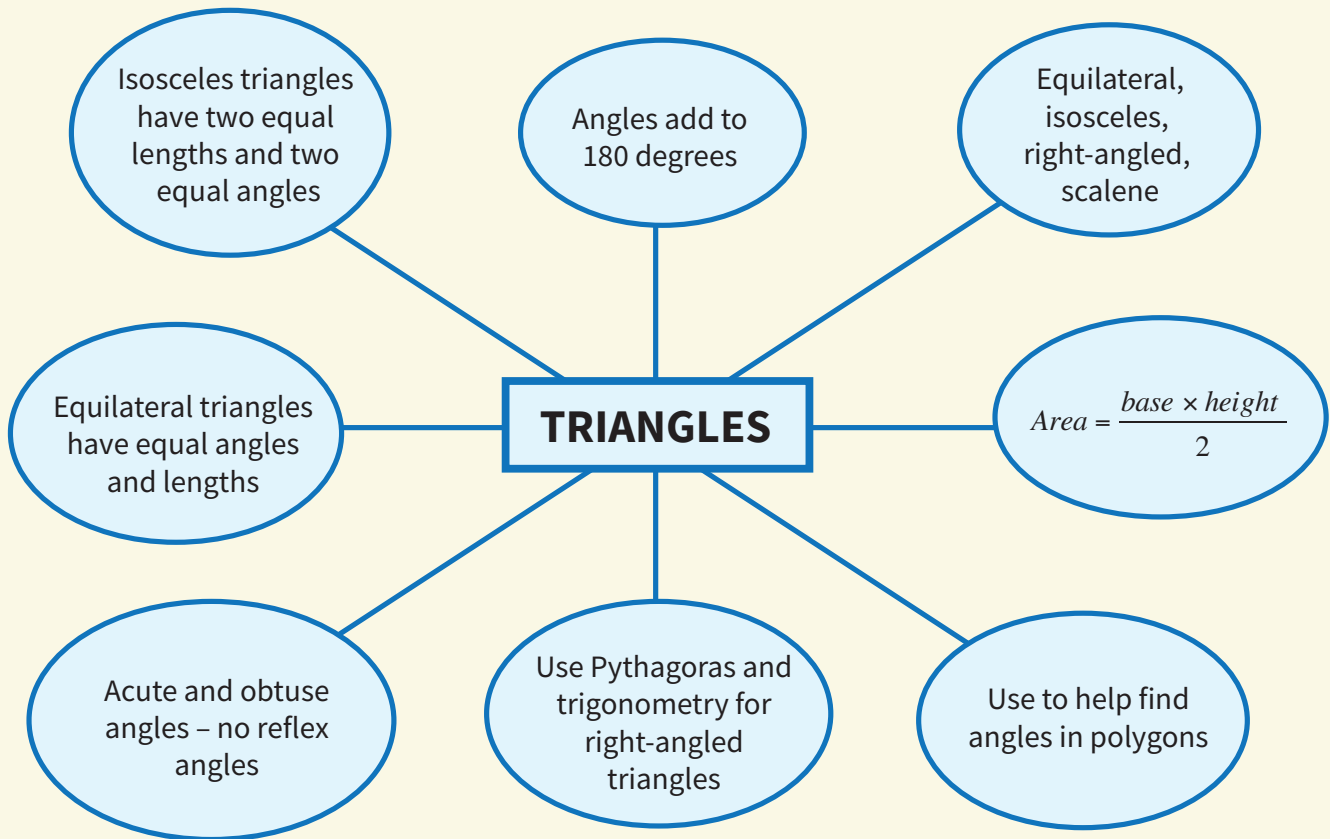
Your turn to use it:

Next time you complete a topic in one of your lessons, record the key information from that topic into a Frayer Model. The more details you add, the better. To make it more difficult, try to do this from memory. You can then double-check with your previous attempts when you are done. You could even try to re-do the model a few weeks later and compare it to your original to see how much you can still remember.

Bubble map

How it works:

The bubble map is a tool that helps you to plan for **descriptive** tasks. You use a bubble map to collect together the key words and phrases that you associate with a topic. Take the example on triangles. This bubble map records some key information about triangles.



This graphic organiser is perfect for when you need to describe an object, unit of work, or a process. It is also extremely easy to draw. Put the 'thing' that you are describing in the middle and then draw lines spreading out from this for every point you have. Just make sure that the notes you make are short (key words and phrases), rather than full and lengthy sentences. Remember, this is used to help planning and is not a complete write-up!

Your turn to use it:

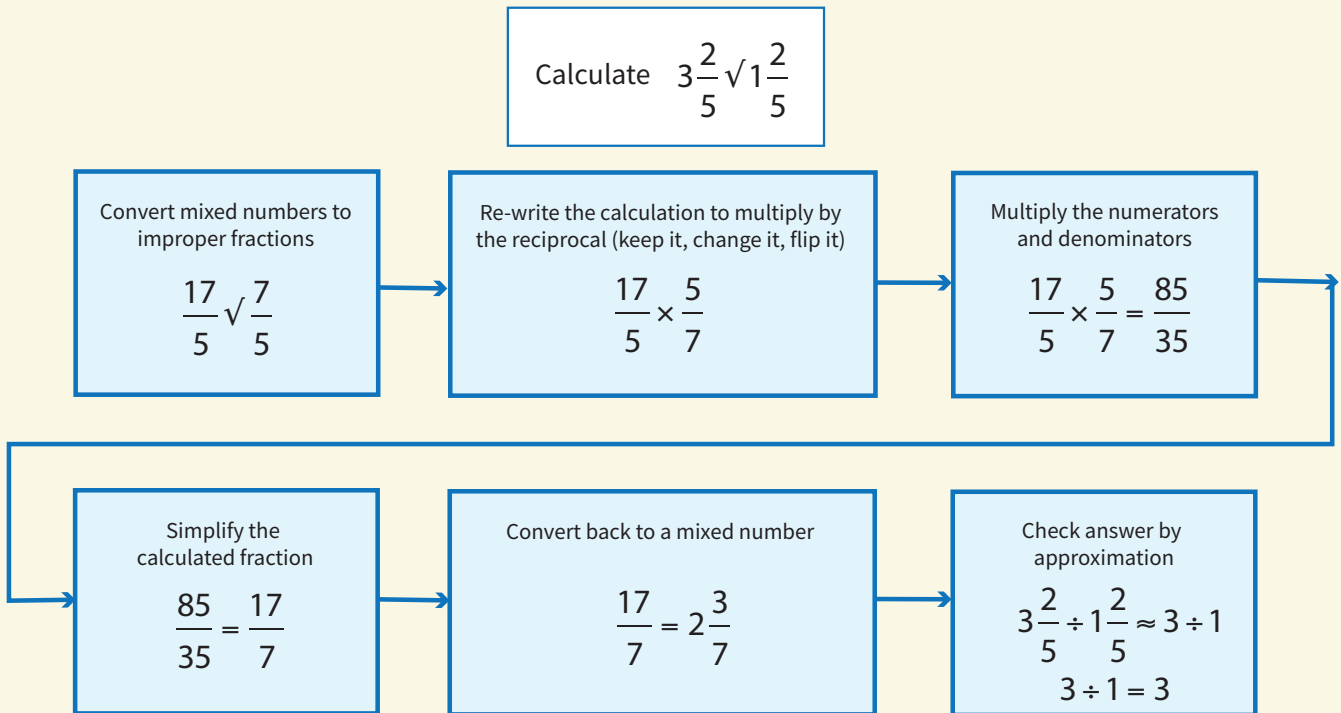
Next time you face a descriptive piece of writing, try planning your answer using a bubble map. If you are studying for exams, practise using a bubble map in a low-pressure environment so that you are confident using it when you're in real exams. As with the Frayer Model, a good idea for revision is to fill in a bubble map from memory, to test how much you have learnt.

Flow map

How it works:

A flow map is a planning tool that helps you to **sequence** your answers. It can be used to help you sequence the content of your answers or the stages that you are going to go through to answer the question.

Look at the example. The process required to divide two mixed numbers is shown. There are quite a few steps to this and trying to remember what to do and in what order can initially seem quite complicated. But by using a flow map, you can make sure that you do not miss out any stages, and that you are doing them in the correct order.



When drawing a flow map, make sure you don't write too much in each box and that each box is neat and clear. This will stop you from mixing up the order of the boxes.

Your turn to use it:

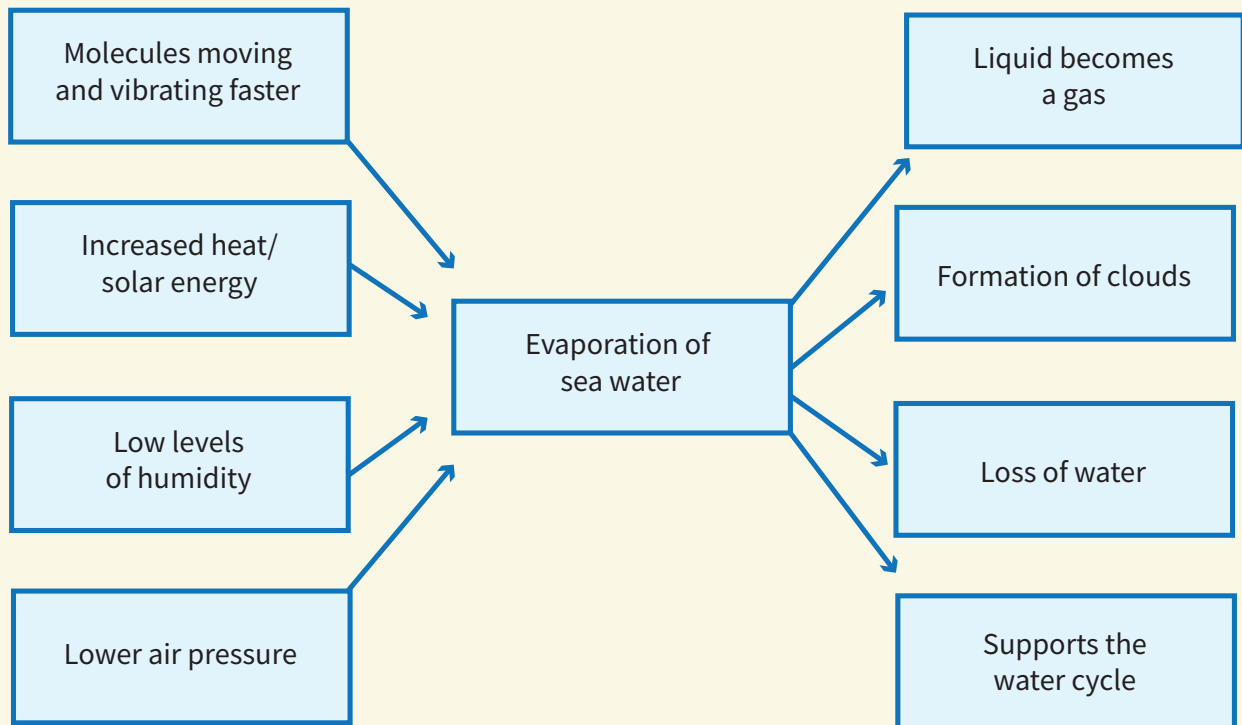
1. The next time you complete a task, use a flow map to record the stages you need to go through in order to successfully complete that task (even if it is for something simple, like making a cup of tea).
2. When you next have a piece of writing to do, complete a flow map showing the information that you need to include at each stage in your answer.
3. Next time you embark on a big project, such as revising for an exam, produce a flow map that covers all of the tasks you need to complete. Put them in order to make sure that you don't forget to do any.

Multi-flow map

How it works:

This type of graphic organiser helps you to consider the **causes** and **effects** of an event. In the centre of a page, write down an event. To the left of this, write down as many factors as you can think of that caused the event. On the right-hand side, write down as many effects of that event as you can think of.

This example shows you the event of evaporation of sea water. Causes of evaporation (or factors which increase evaporation) are on the left and effects of evaporation are on the right.



Your turn to use it:

When you next complete a project or practical experiment, consider the causes and effects of that project or experiment. Practise recording this information in a multi-flow map.



'Knowledge of' planning grid

How it works:

This strategy helps you plan for a task by considering three areas: knowledge of task; knowledge of strategies; knowledge of self.

So, what do these three things mean?

Knowledge of task – your understanding of what the task is asking you to do.

- Do you need to write a description, calculate a value, or make a hypothesis?
- What information are you being asked to include? What format are you being asked to present it in?
- Is there one specific answer that the task is looking for? Is there a range of potential answers? Do you need to justify your answer?

Knowledge of strategies – the different ways you can go about completing the task that you have been given.

- Are there multiple different strategies that you can use to complete the same task? How do these methods differ?
- What are the benefits and drawbacks of each of these strategies?

Knowledge of self – considering how confident you are with the subject knowledge that the task requires.

- What are your strengths in this topic (e.g. key formulas, characteristics, equations)?
- What are your weaknesses (e.g. applying information to problem-solving questions)?
- Which strategies are you most comfortable using when tackling tasks and questions?

This strategy is easy to set up (the tide example here demonstrates this). Simply split your page into three equal columns. Title the columns as 'knowledge of task', 'knowledge of strategies', and 'knowledge of self'.

Explain how tides occur. (4)

| Knowledge of task | Knowledge of strategies | Knowledge of self |
|---|--|---|
| <ul style="list-style-type: none">– Provide an explanation.– Need to provide the process for tides forming.– Need to include two well-explained points to get four marks. | <ul style="list-style-type: none">– Could start with a definition and then explain the reason why tides occur.– Could draw a diagram and label it.– Could explain the process of tides in chronological order. | <ul style="list-style-type: none">– Know one reason why but not how to explain it.– Confident drawing a diagram so favour that strategy. |

Once you've filled in each section as much as you can, you will be in a better position to decide how you can go about completing the task successfully.

Your turn to use it:

When you next come to a more complex task or problem-solving question, quickly sketch down a 'Knowledge of' planning grid. As you fill it in, look back to the questions discussed here to help guide you in filling it out correctly. Once you have filled it in, see whether this makes it easier to tackle the task you are faced with.

Monitoring

Monitoring is the most complicated part of metacognitive thinking. It is the area where the most mistakes are made.

Consider the following examples.

1. Have you ever been working on a task and realised after a long time of working on it that there is actually a quicker and far easier method that you could have used all along? But, you really don't want to just give up and start again (even if that would be quicker)?
2. Have you ever been completing a task and realised you have made a mistake, but you're so close to finishing? And that mistake means that you have got to go right back to the beginning? Or maybe you need to trace back the last few things that you have done to find your mistake?

These examples are incredibly common. However, you can avoid them through monitoring.

Monitoring is the process of ensuring that your work is heading in the right direction and is being done in good time and without mistakes. Monitoring helps you to avoid the two painful scenarios just discussed. This guide will now explore four different monitoring strategies.

Content checklist

How it works:

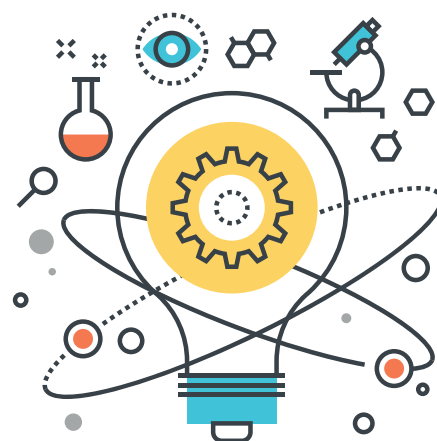
In this strategy, the focus is on your **understanding** of the task. Think about the questions you can ask yourself. What does this task want me to do? What type of answer does it want? What is the task telling me I must include?

Make a short list of all the content requirements of the task. This means all of the things that are expected to be found in your final answer, such as dates, measurements, units and so forth. This **does not** include things such as alternative strategies for answering the question, or other requirements, such as how long your answer needs to be. Focus purely on what the content of your answer needs to include.

Once you have produced your list of everything that you need to include, you can then begin writing your answer. The idea of the checklist is that it guides you through the different things you need to include and keeps you focused. As you add each of the different things to your answer, you can tick them off your checklist.

Your turn to use it:

When you next attempt a longer question or problem, take two minutes to make a list of all of the content required in your answer. This list might just contain the different lines of method you need to include when working towards your final answer. Make sure to tick off each point as you include it.



Key questions

How it works:

A question can often have lots of different parts to it. This can make it easy to lose track of which part of the question you are answering. This is where the next strategy helps. *Key questions* focuses on your **understanding** of a question. Take some time to break up the overall task or problem into a number of smaller questions or parts that you need to answer in turn. This is particularly useful for longer exam questions. Once you have made a list of the different sub-questions, you can then begin your answer.

As you complete each of the question parts, you can tick them off and then move onto the next question. The aim here is to make sure that you are addressing **all** of the parts of the task or problem. It also helps to make sure that you are not answering questions or calculating things that you don't need to.

Take a look at this example question and the student's approach to it:

John wants to purchase a car for £14 000.

The car is reduced in price by 12%.

Once John has bought the car, he then needs to pay for tax (£200) and insurance (£360).

John has £13 000. Show whether he has enough money to cover the total cost of the car, tax, and insurance.

1. *Work out 12% of £14 000.*
2. *Subtract this from £14 000.*
3. *Add on £200 and £360.*
4. *Compare to £13 000.*
5. *Conclude.*

This student has read through this multi-part maths question and broken it up into several different mini-steps or calculations that they need to work through. This will ensure that they work out each key part of the question and have a better chance of getting full marks.

Your turn to use it:

Next time you face a long problem-solving question or a complex task, break it down into a list of sub-questions that you need to answer. You could discuss this with a teacher or friend and see whether you have correctly understood the question and identified each of the different things that you are expected to answer to complete the overall task.



Flow map

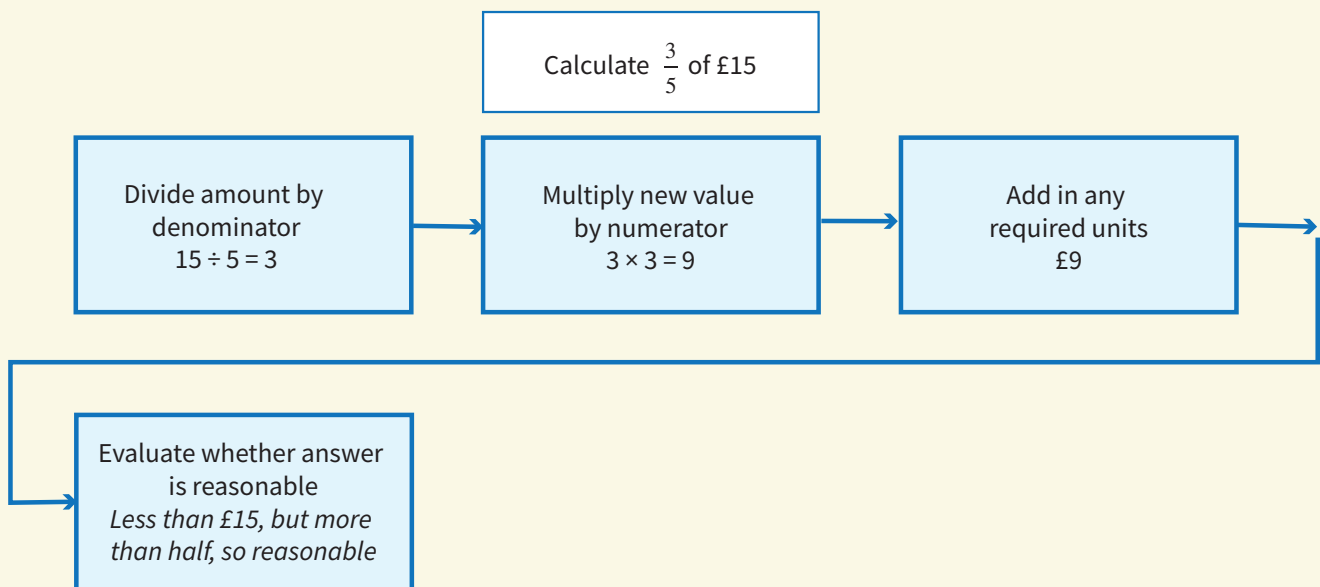
How it works:

As mentioned earlier in the pack, a flow map is a graphic organiser. As well as being a useful planning tool, it can also support with the monitoring of tasks.

A flow map is a graphic organiser that allows you to order events, processes, or stages.

So, you have decided what you need to include in your answer and the strategy you are going to use to complete the task. Now you need to decide which stages you will go through in order to complete the task. Record each of these stages down in a flow map. Then, when you begin the task or problem, you can work through each step of your flow map in turn.

Look at the example question and flow map. This question on working out a fraction of an amount has been broken down into a few stages to ensure that the question is answered correctly and is given in the required format.



Your turn to use it:

When you next begin a long project or revision task, take a moment to decide how you are going to go about doing it. Write down the key stages. Write these into a flow map. Tick them off as you complete each stage. Now watch as your answer or project gets completed in the right order and with little confusion.

Warning signs

How it works:

This final strategy for monitoring involves another type of list. When you are presented with a task and you have decided on the strategy that you are going to use, you are probably aware of some things that could go wrong. Have a look at the following question:

$$\frac{1}{7} + \frac{3}{4}$$

Some alarm bells might be ringing straight away. You might know that the answer would be incorrect if:

- a common denominator was not found first,
- the denominators were added together,
- the final answer was negative.

The idea behind this strategy is to make a quick list of as many things as you can think of that could possibly go wrong when completing a task or a problem. Once you have completed this list, you can then attempt the problem. As you do, make sure that you are not making any of the potential mistakes that you listed out (setting off any warning signs).

Knowing what could go wrong ('misconceptions') will also help you understand topics in far more depth. You will then be able to attempt more complex and in-depth tasks and problems. Another win-win strategy!

Your turn to use it:

Next time you approach a task, use a warning signs list to help you. If you've completed the task without breaking any of the warning signs you listed, there's a very good chance you have completed the task correctly.

Evaluation

You have planned your task and then you have completed it. However, you shouldn't just charge ahead to the next question. You need to evaluate your success in that task first. This is so you know how to improve for next time. If you don't take time to consider what went well and what could have gone better, you'll continue to show the same strengths and weaknesses. Evaluating is a key part of metacognitive thinking.

Sometimes an expert (e.g. a teacher) may give you feedback to help you improve. However, you won't always have an expert or teacher with you when you are learning. It is up to you to provide yourself with your own feedback so that you can improve.

This next section will provide you with six different ways that you can evaluate your own performance.

Exam wrapper

How it works:

An exam wrapper can be used to help you to identify where you might have dropped marks or gone wrong in an exam, worksheet or task. The wrapper is a multi-column table.

| QUESTION DETAILS | | | REASON FOR DROPPED MARKS | | | | | |
|------------------|-------|---------------|--------------------------------|----------------------------|-------------------------------------|--------------------------|-----------------|-----------------|
| QUESTION NUMBER | TOPIC | MARKS DROPPED | NOT READING QUESTION CAREFULLY | NOT UNDERSTANDING QUESTION | IMPRECISE ANSWER E.G. MISSING UNITS | FAILURE TO SHOW WORKINGS | RAN OUT OF TIME | OTHER (SPECIFY) |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| Total | | | | | | | | |

In the first three columns you record the question number, the topic that question covers and the number of marks you dropped. The next few columns include reasons why you might have dropped marks in that piece of work. For example, you didn't read the question correctly, or you didn't put the required units in your answer. Whatever the reason for dropping marks might be, the wrapper table gives you an opportunity to record these for each question. The most common reasons are in the example table. You can change them if you know there are other common reasons why you lose marks in your work.

Once you have gone through all of the answers from the exam, worksheet, or task, you can then tally up which reasons meant that you lost the most marks. Whichever area cost you the most marks is the area that you focus on improving for future exams or tasks.

When you have identified the area or areas that caused you to lose marks, you need to make sure that you improve on these areas as part of your future planning and revision. By doing this, you also improve overall as a learner.

Your turn to use it:

A wrapper can take quite a bit of time to make. You can draw it out by hand or by using a computer. It is worth the time it takes to set up though. Use one the next time you have a long assessment or exam. Find out which area or areas need the most improvement. You could print out your wrapper and 'wrap' it around your paper to keep them together.

Answering directed questions

How it works:

One of the best ways of evaluating your work is getting a teacher or an expert to ask you questions about it. These questions might be about how you planned your work, the strategies that you used, or the content that you included in your answers. The problem is you are not always with someone who can ask you these questions. Therefore, this strategy is all about helping you to ask yourself these important questions. This will help you to identify your strengths, weaknesses and any areas for improvement.

There are some general questions which will always be helpful to ask. These will make sure that you are thinking about the right things. The questions are split into a few different areas to help you identify which questions are the most important for you to answer.

Planning

- Which strategy did you choose to help you plan for this task? Why?
- Was the strategy you chose successful in helping you plan? Why?
- Which other strategies could you have chosen and do you think these might have worked better?
- Did you spend too much, too little, or the right amount of time planning for your task?

Monitoring

- How did you make sure that you were going in the right direction on the task?
- Did your chosen monitoring strategy actually help? How?
- Which strategy do you want to try next time to help you monitor?

Evaluation

- What went well during the task? What could have gone better?
- If you repeated the task now, what would you do the same and what would you do differently?
- Was your strategy successful? How do you know?
- Would another strategy have worked? How do you know?

Knowledge of self

- Have you identified any content areas you need to revise?
- Have you identified content or strategies that you are better at than you thought?

Knowledge of task

- Did you correctly understand what the task asked of you? How do you know?
- What were the key words in the task that helped you know what to do?
- Were there any parts of the task that you still do not understand?

Knowledge of strategies

- Are there any strategies that you are confident using now, or any that you need to get help on?
- Can you see where different strategies may suit different tasks better?

Connections

- Are there any similarities between this task and others that you have done?
- Do you see links between your answer and other answers you have previously done?
- What have you learnt from this task that you would apply to a similar task?

Your turn to use it:

Next time you complete a longer or more complex task, choose some of these questions to go through. You could write down some answers, explain it to someone else, or even get a family member or friend to talk it through with you. They don't need to be a subject expert. If you can explain your answer in a way that they understand, then it means your evaluation is clear and useful.

Informing future planning

How it works:

This strategy does what it says on the tin. The idea here is that you would use your evaluation (in whatever format this comes in) to help you plan for a task that is very similar to the one that you have just done.

As soon as you have evaluated your success on a task, use your evaluation to plan for a new task. The reason for doing this so quickly is that we often evaluate and end up doing nothing with that evaluation. Give it a few hours or days and we've forgotten all about our evaluation. That's a wasted opportunity to improve on any areas of weakness. The sooner you put your evaluation to use to make improvements, the more likely you are to learn from it. Don't end your evaluation by only having an idea on how to improve. End by actually making an improvement.

Your turn to use it:

Next time that you complete a task and evaluate it, make sure that you feed your evaluation back into planning for a new task. Complete any new tasks and make sure that you learn from your evaluation.

New strategy

How it works:

There are multiple ways that you can go about getting to the same answer for a question. You may just pick the strategy that you are used to using or the one that you are most confident using. But that is not always the best option. It is important to consider all the different strategies that are available to complete a task, and then use the one that is the most appropriate.

You should re-do a task you have just completed, but with an alternative strategy. If you have time, you should try to do it with all the alternative strategies you have available to you. Completing the task several times with different strategies has several benefits.

1. You will be able to double check your answer.
2. You will be able to see how confident you are using other strategies and will be able to improve as a learner by using strategies that you wouldn't normally use.
3. You will understand the strengths and weaknesses of the strategies you have available.
4. You will be able to see which types of tasks suit the different strategies. In future, this will mean that you will be able to see a certain task and immediately know the easiest way to tackle it.

Overall, the more strategies you know and the more confident you are using them for the right task, the better you will be at answering questions and tackling problems. The hard work using this strategy pays off.

Your turn to use it:

Next time you complete a problem or a task, ask yourself what other strategies you could have used. Complete the problem or task again using one of those alternative strategies. Then spend some time evaluating and comparing the strategies. Which strategy was easier to use? What are the strengths and weaknesses of both strategies? Which strategy would you use now if you had to do that task, or a similar task, for the first time?

PMI grids

How it works:

A PMI grid – or plus, minus, interesting grid – is a very simple and easy way for you to evaluate a lesson you have just had, a unit you have studied, or revision that you have been completing.

The example PMI grid is a page split into a few different sections. However, if you want to save time, you can just write down ‘plus’, ‘minus’, and ‘interesting’ as three headings. The focus of this strategy is on identifying something that was positive, something negative, and something interesting in the thing you are evaluating.

Something *plus* is something that went well. For example, your choice of strategy was successful. Whatever it may be, the positive section is something to celebrate.

The *minus* section is something that did not go as well as planned. For example, your monitoring didn’t go as planned and you lost track of your answer. This section is all about something that didn’t go quite right. However, don’t leave minus points as negatives. Make sure to add a point about how you can make things better now or improve in the future. A minus is good because it gives you something to improve on.

Finally, there is the *interesting* section. This is a great opportunity for you to list some things that you enjoy or find interesting about a lesson or topic. Whatever it might be, it is always good to think about what you find interesting in your learning and what you are passionate about.

| PMI Evaluation |
|-----------------|
| Evaluation of: |
| Plus: |
| Interesting: |
| Minus: |
| Future Targets: |

Your turn to use it:

Next time you go into a lesson, take some time afterwards to use a PMI grid to consider the plus, minus and interesting things from that lesson. See if this is a useful way for you to evaluate some learning that you have been doing.



Learning diaries

How it works:

A learning diary is not one specific strategy. In fact, it uses all the different strategies mentioned in this pack. There is not one specific way that it is done – you have free reign over how you would like to use it.

A learning diary is a place where you keep track of your progress as a learner. As this strategy is focusing on evaluation, this type of diary would specifically focus on your pieces of evaluation, such as:

- I struggle with topic x and need to revise it.
- I do not understand strategy y and so I need to get help with it.
- Strategy w is better than strategy v for this type of question.

You would also record down any targets that you set yourself as a result of your evaluation. For example, 'I am going to time myself using a Frayer Model to make sure I complete it in a set time.'

You may decide that your learning diary is a little notebook where you just record key pieces of evaluation when they arise. Alternatively, you might decide to record a new piece of evaluation and a new target each day.

Your turn to use it:

Decide how you would like to record your evaluation. Once you have decided, record your evaluation for one subject that you are studying for a whole month. Continue to refer back to your diary to make sure that you are trying to complete your targets and are learning from your evaluation. At the end of the month, evaluate your diary to see whether it has helped you improve at a faster rate than before.

Conclusion

Now you are at the end of this pack you will hopefully have a better idea of what self-regulation is and what metacognition is. By working through the strategies listed, you will begin to improve as a learner. Remember that learning to use the strategies in this pack will take time. You may need to repeat each one many times before you become fully confident at using them. Try all the strategies and see what works best for you.

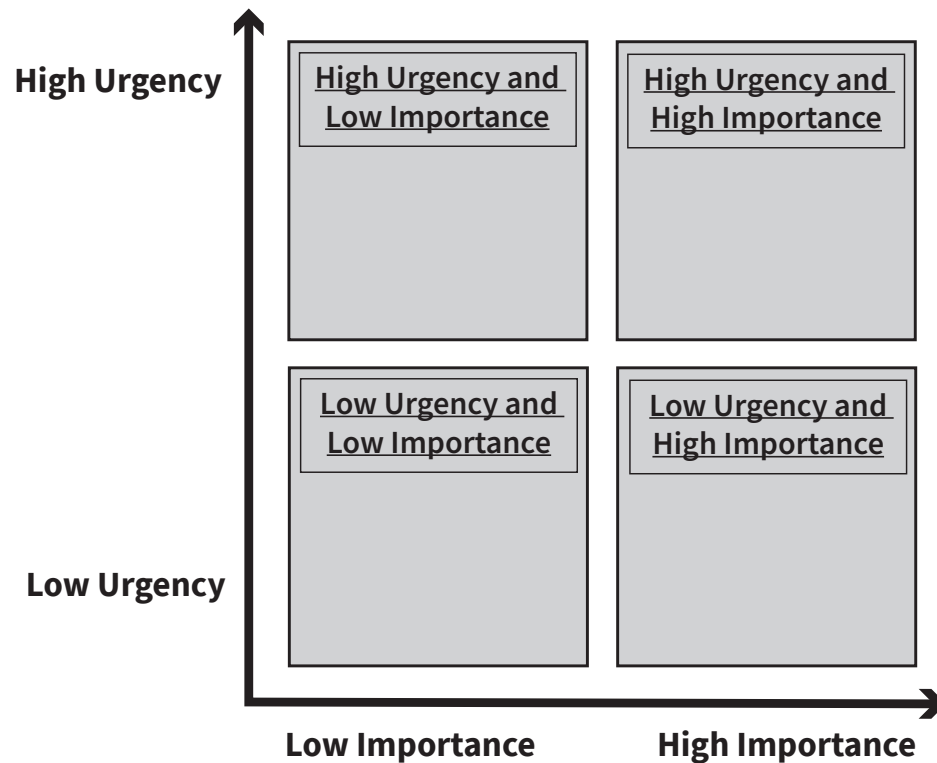
Happy learning!



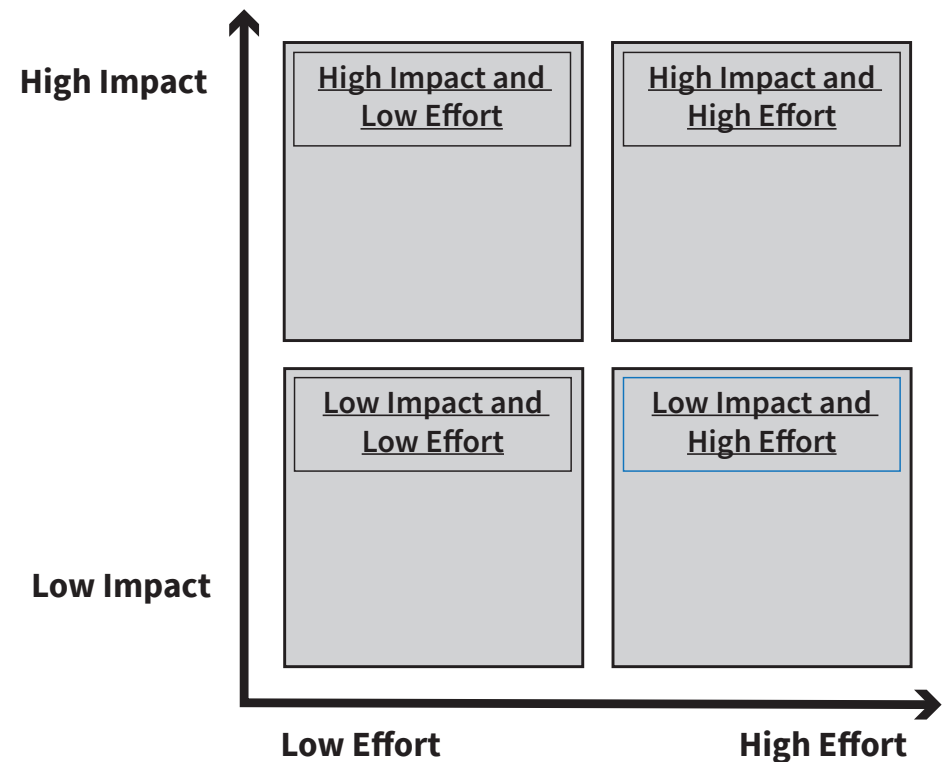
Diagram templates

Prioritisation grids

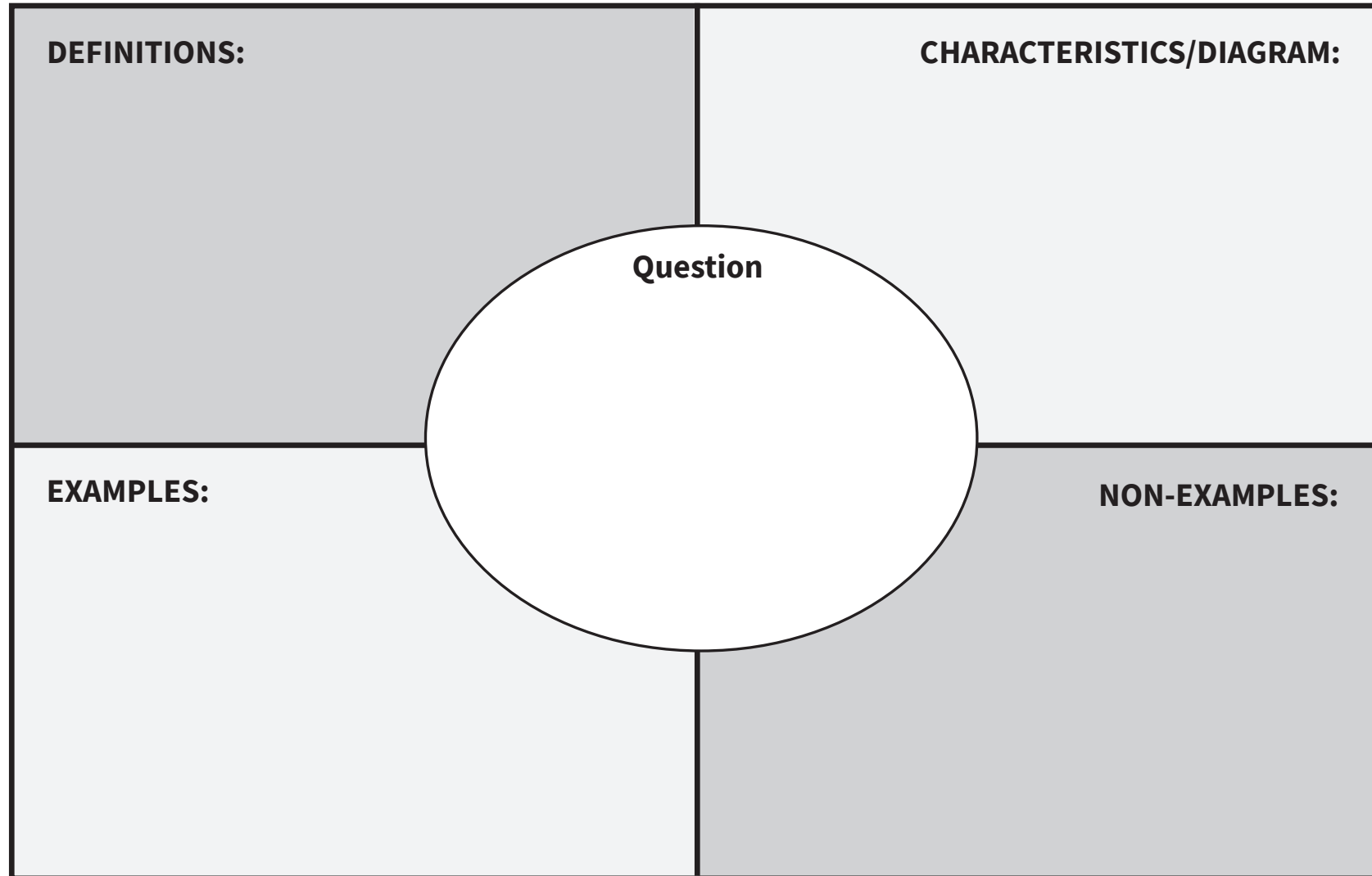
The Eisenhower Prioritisation Matrix



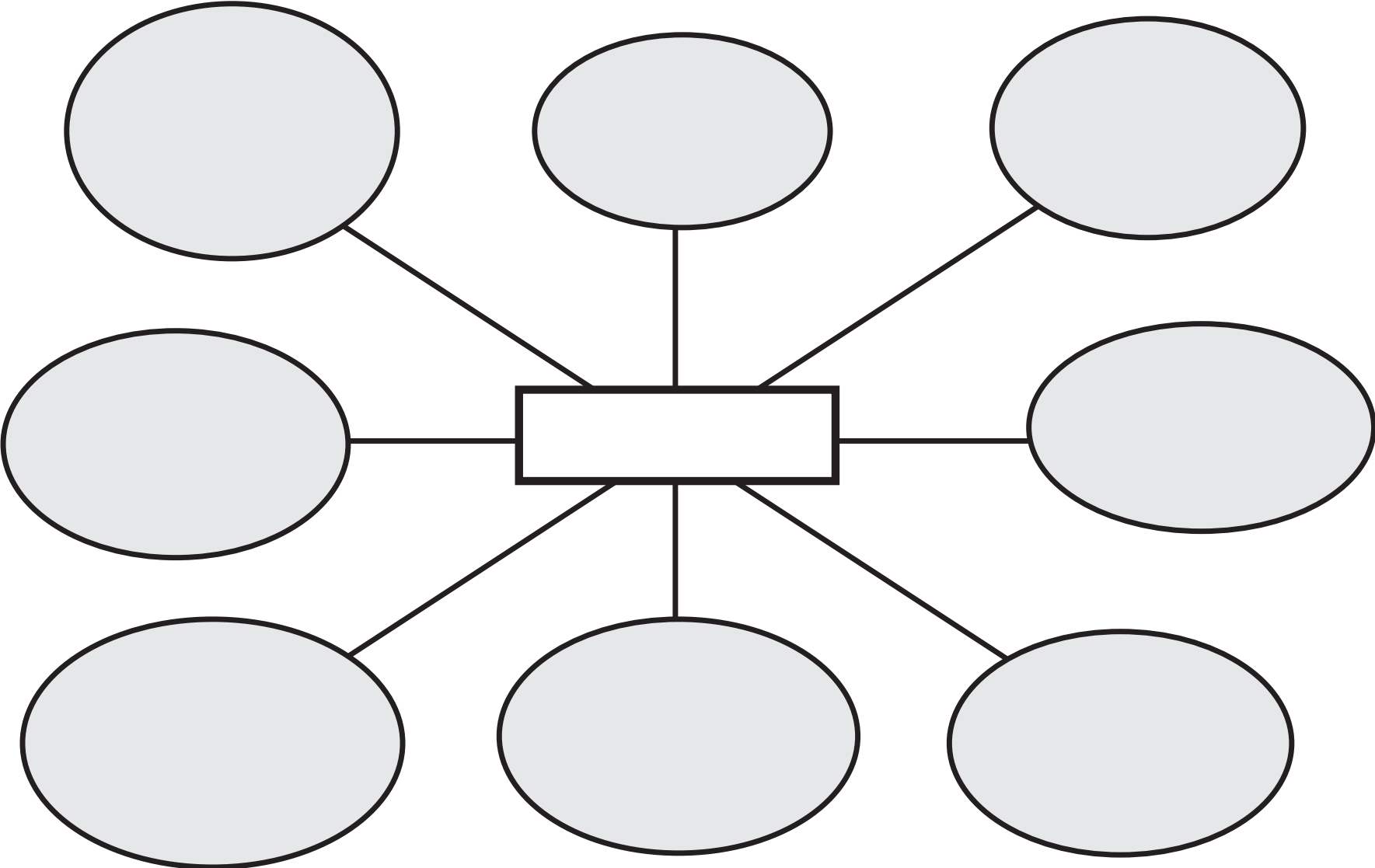
The Impact-Effort Prioritisation Matrix



Frayer Model



Bubble map



Flow map

Question

Step 1

Step 2

Step 3

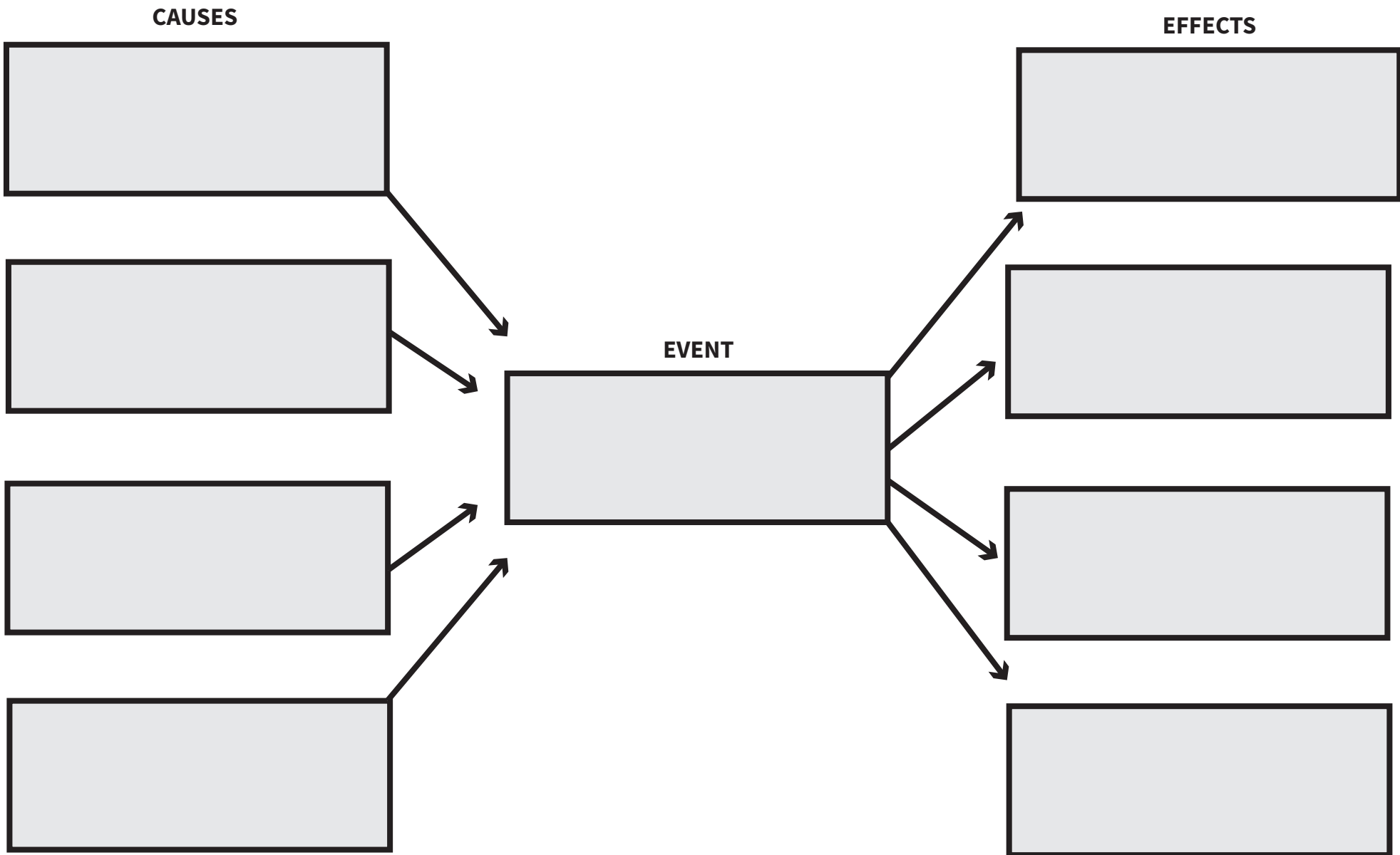


Step 4

Step 5

Step 6

Multi-flow map



PMI grid

PMI Evaluation

Evaluation of:

Plus:

Minus:

Interesting:

Future Targets: