

Year 10 Formal Assessment week – ‘a reflection of your year so far!’

Monday 5th June 2017 – Friday 16th June 2017



What you can do to help yourself out.

- **Start to revise – information to follow**
- **Use Form Time each day 20mins x 4 = 1 hour 20 minutes each week**
- **Increase your Attitude to Learning in each lesson**
- **Revision guides**
- **Except revision sessions – homework should be revision**
- **Use Study Club on a Tuesday evening**

- **LRC closed for two weeks prior to half term to accommodate Year 10's only**

Revision Technique



- **Why should you revise?**
- **Where should you revise?**
- **When should you revise?**
- **How often should you revise?**
- **How should you revise?**



Why should you revise?

- **Your brain forgets details of the work you did months ago,**

But...

- **You need these details to answer the questions in the exam,**

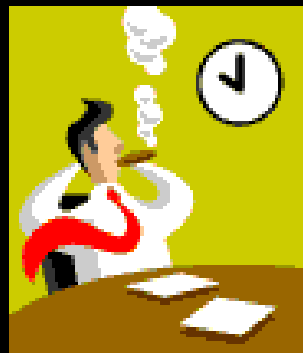
So...

- **You need to 'top-up', by using the correct revision technique.**



Where should you revise?

- In a quiet room, perhaps a bedroom,
- Warm and well-lit,
- With a table to work at,
- Ideally, with a table-lamp, to help you to focus on the page,
- With a clock for timing (as described later).



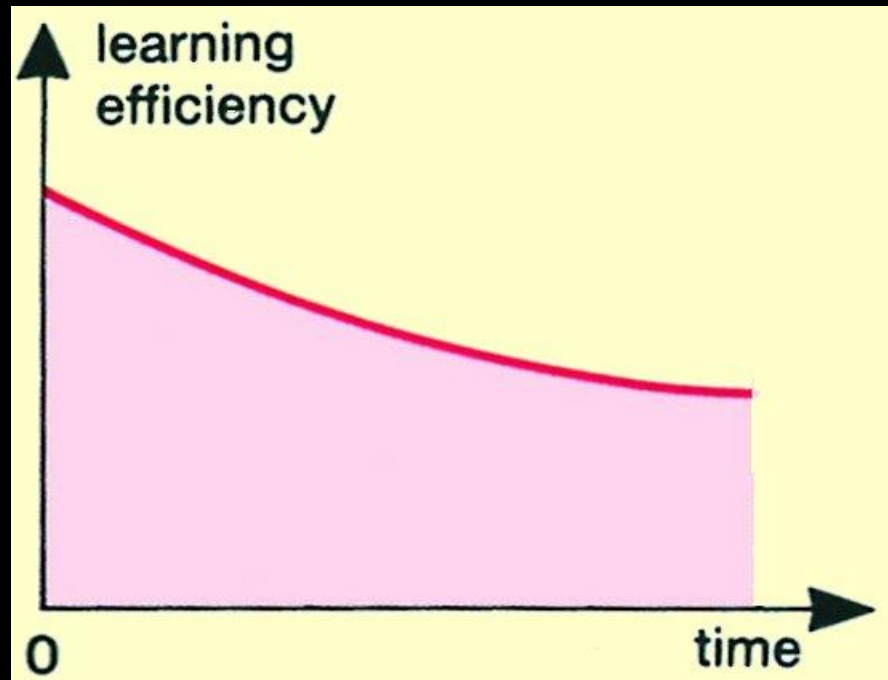
When should you revise?

**Start your revision early each evening,
before your brain gets tired.**



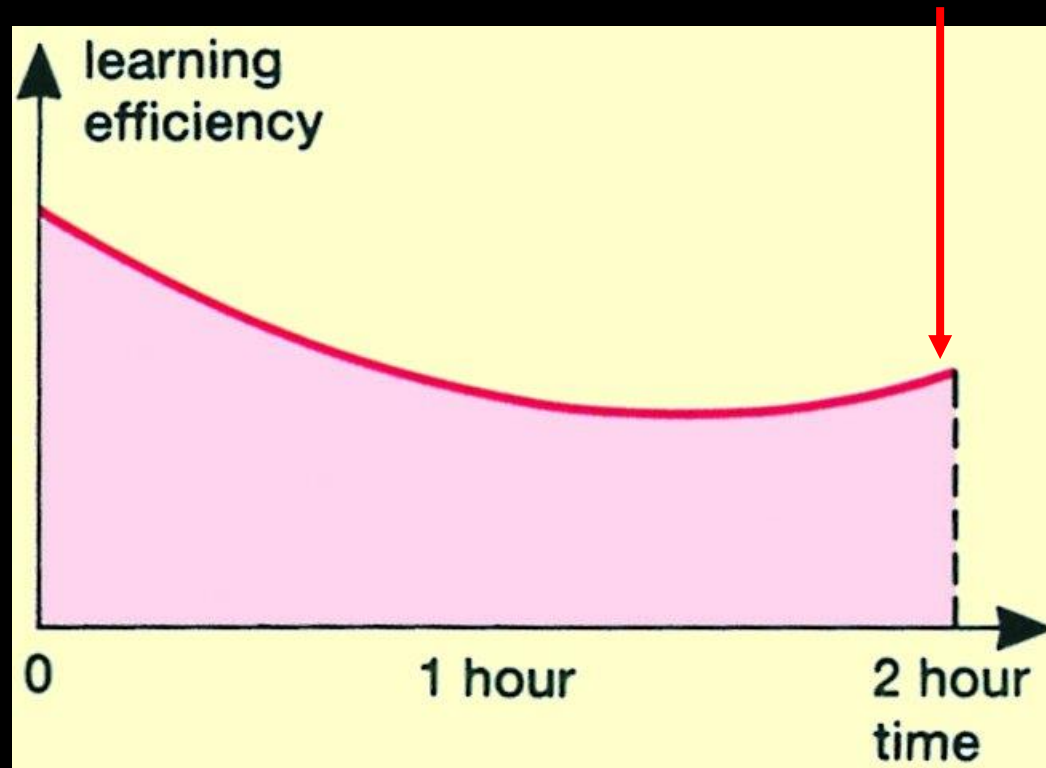
How should you revise?

If you just sit down to revise,
without a definite finishing time,
then your learning efficiency
falls lower and lower,
like this:





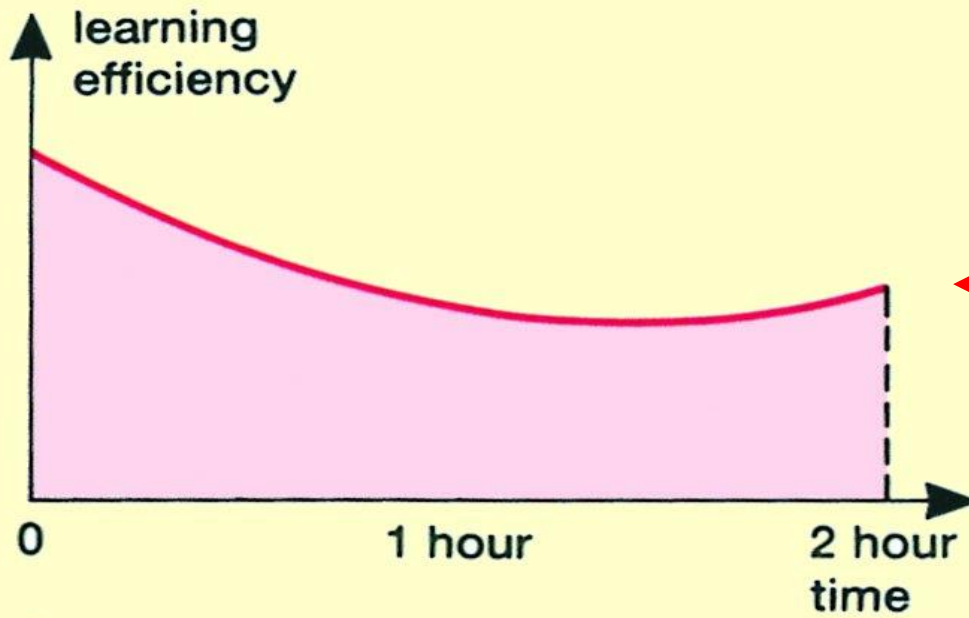
**If you decide at the beginning
how long you will work for, with a clock,
then as your brain knows the end is coming,
the graph rises towards the end**



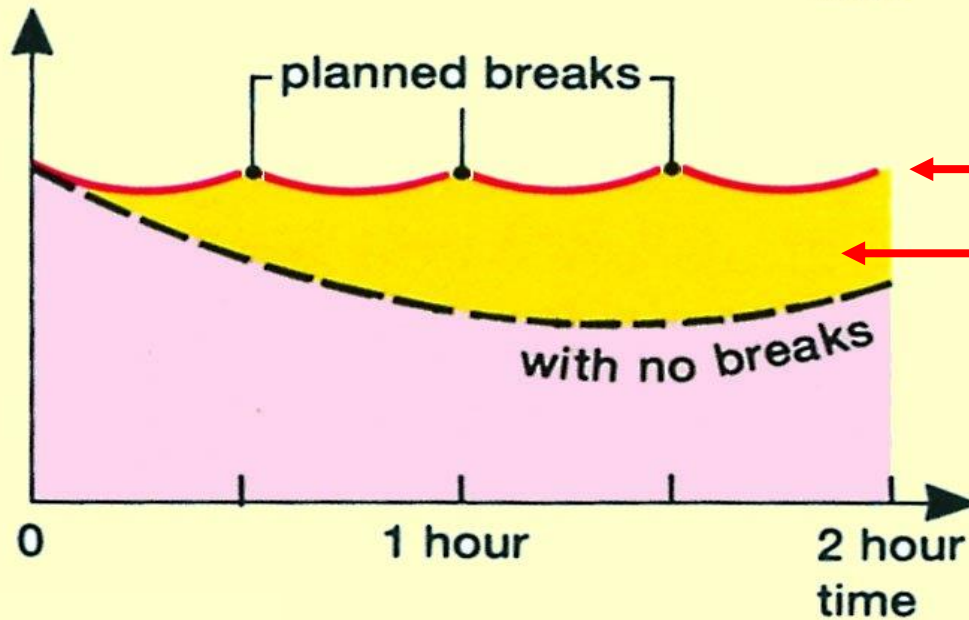
**If you break up a 2-hour session,
into 4 shorter sessions,
each of about 25-minutes,
with a short planned break between them,
then it is even better.**

Compare the next 2 graphs:





One solid session



4 shorter sessions

The yellow area shows the improvement.

For example,

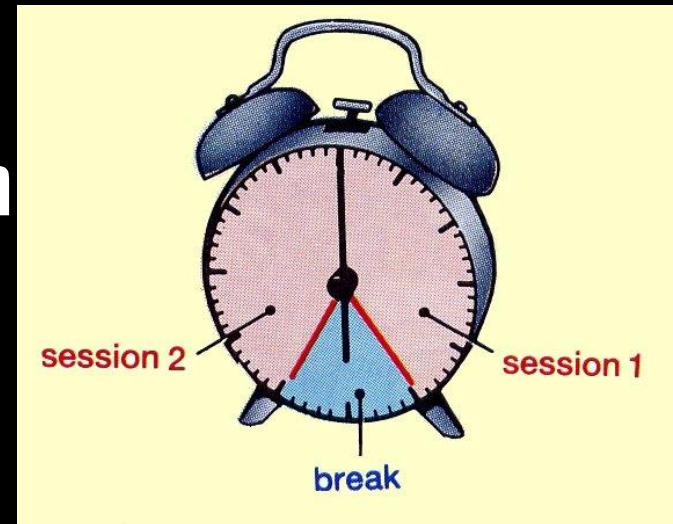
Suppose you start work at 6 pm.

You should decide, looking at your clock or watch, to stop at 6.25 pm --and no later.

Then at 6.25 pm have a break for 5-10 minutes.

When you start again, look at the clock and decide to work until 7 pm exactly, and then have another break.

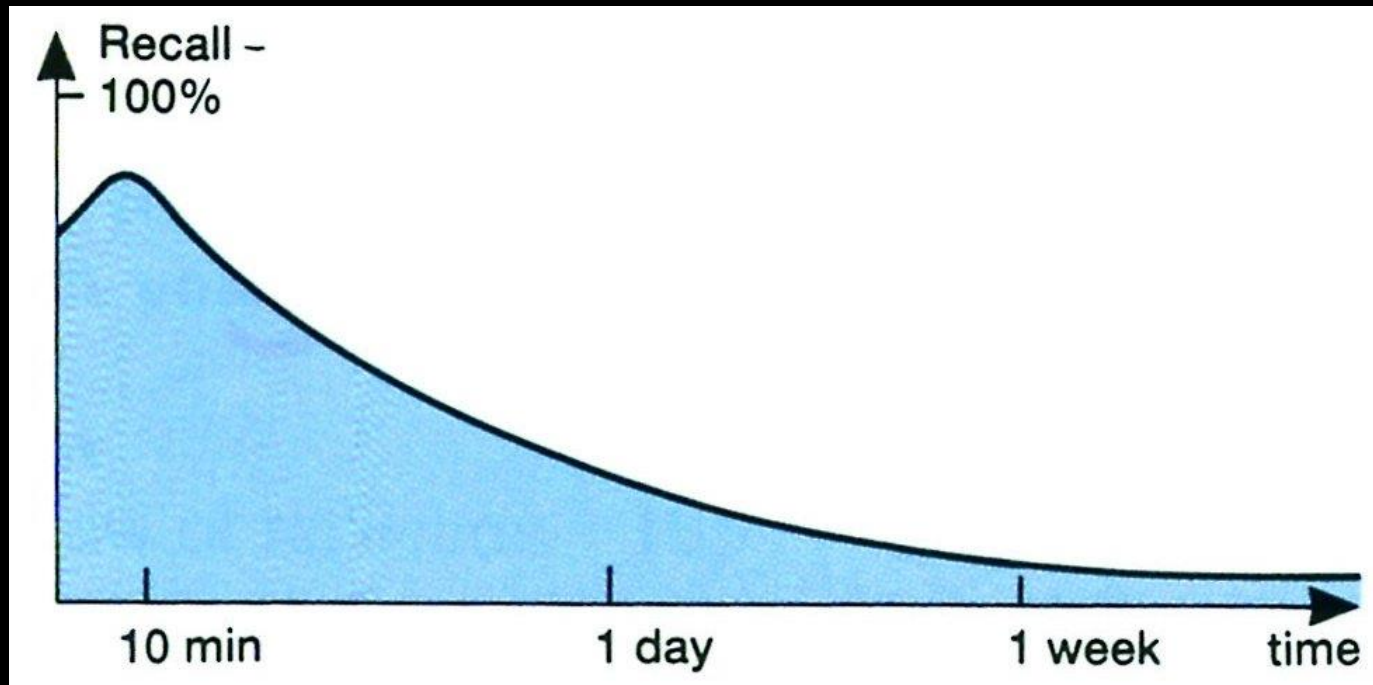
This way, you are working more efficiently, as the previous slide showed.



How often should you revise?

Look at the graph below:

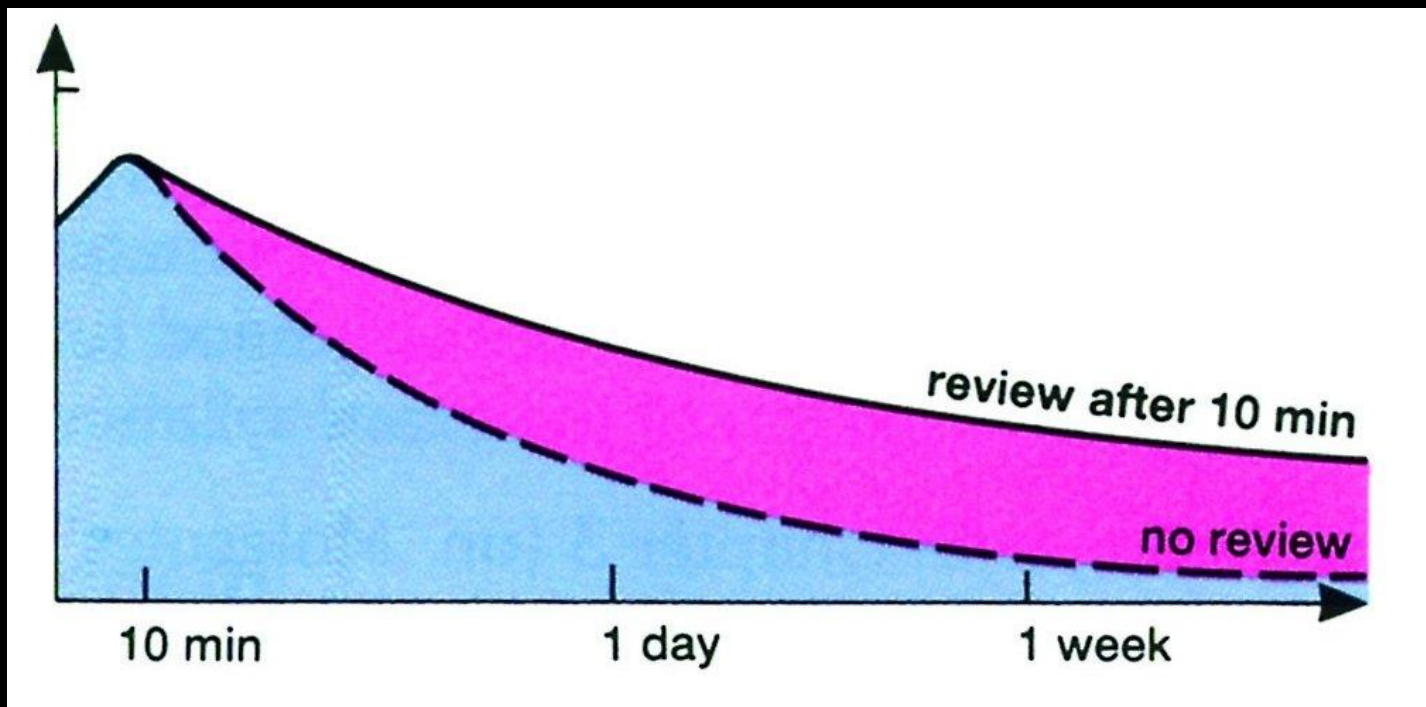
It shows how much your brain can recall later.
It rises for about 10 minutes ...and then falls.



However,

if you quickly re-revise after **10 minutes**,
then it falls more slowly! This is good.

Analyse the new graph:

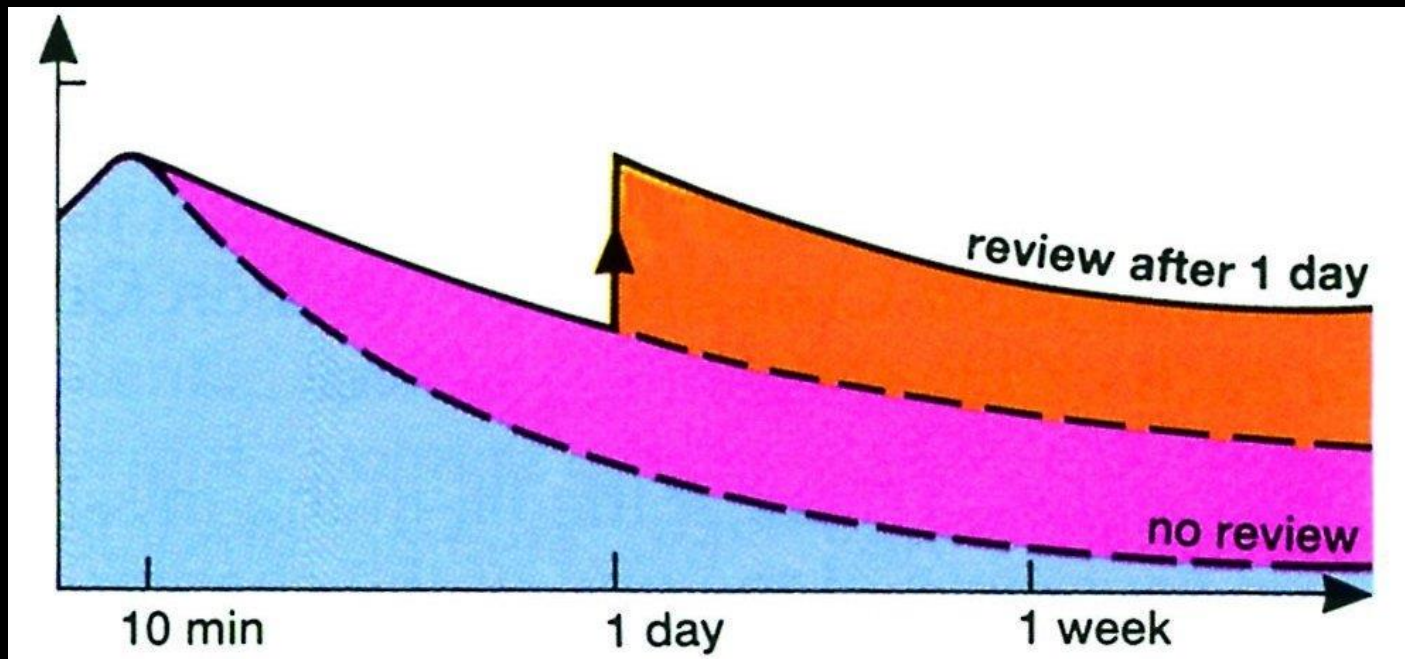


Even better,

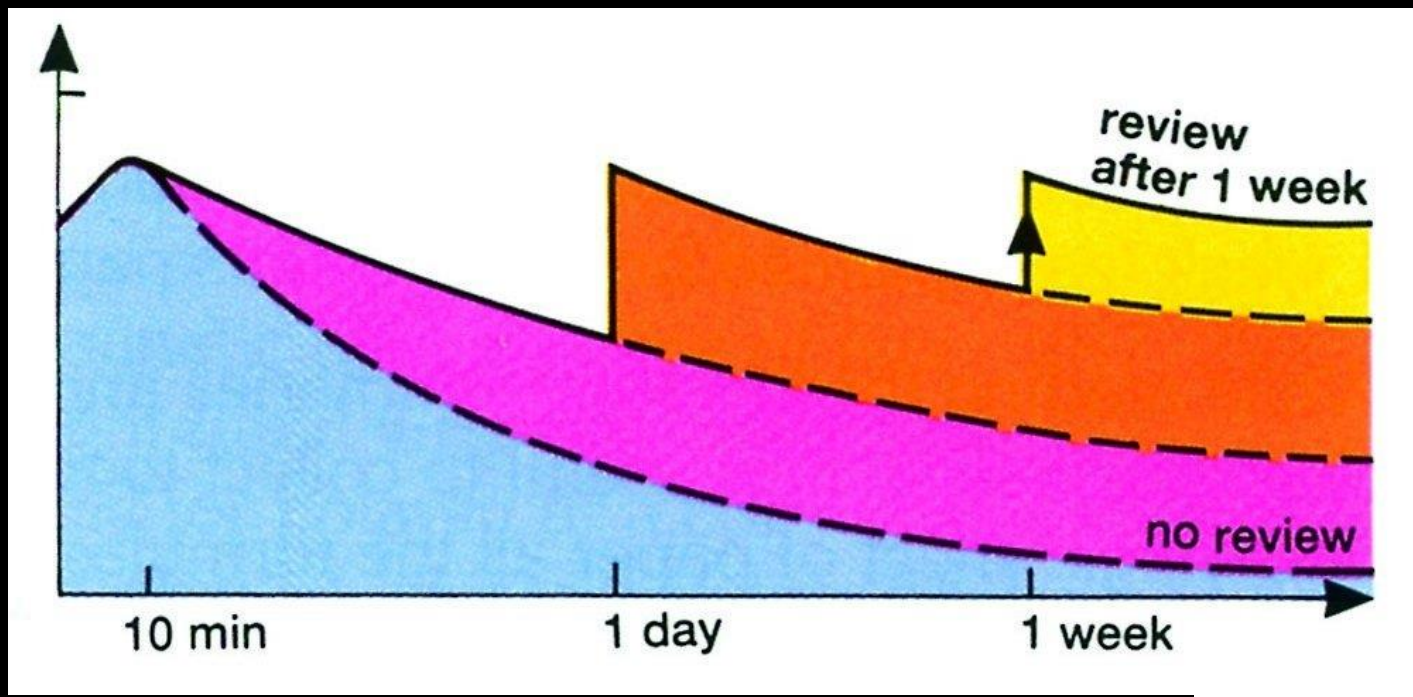
if you quickly re-revise again, after **1 day**, **this will be form time**

then it falls even more slowly! Good!

Analyse the new graph:



And even better still,
if you quickly re-revise again, after **1 week**,
then it falls even more slowly! Great!
Analyse the new graph:



**So the best intervals for ‘topping-up’,
by reviewing or briefly re-revising
are:**

- ✓ 10 minutes**
- ✓ 1 day**
- ✓ 1 week**
- ✓ ...and then 1 month.**

All this means that you must draw up a revision timetable – it is important so that your brain knows where you are going and the times you are going to be reviewing topics is clear.

Blank ones to be given in form time.



It's also a great feeling when you can cross off the work you have completed and see the countdown to the end of the exams!

Top tips on revision techniques:

- ✓ **Be realistic with your timetable**
- ✓ **Have deadlines and stick to them**
- ✓ **use revision notes – make your own!**
- ✓ **USE DIFFERENT TECHNIQUES**
- ✓ **GET HELP IF ITS NEEDED**
- ✓ **DON'T GET STRESSED!**
- ✓ **lastly make sure you know all about the exam!**

Specific Revision Technique



Revision Techniques

Different things work for different people so this is just a list of possible methods.

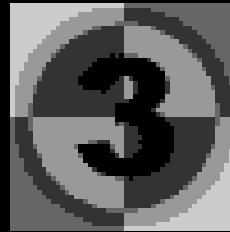
However it is rare that the best approach is to read through your notes. This is PASSIVE revision and does not engage your brain.



Revision Techniques

Remember the three main learning styles:

- ✓ **Visual (looking)**
- ✓ **Auditory (listening)**
- ✓ **Kinaesthetic (doing)**



You will learn best in a certain way – but do not completely neglect the other approaches!

Listeners:

- ✓ **Repeat things to yourself out loud**
- ✓ **Remember things by setting to tunes**
- ✓ **Record things and listen to them again**

Lookers:

- ✓ **Draw pictures and diagrams – colour code your work**
- ✓ **Highlight work**
- ✓ **Mind mapping**

Doers:

- ✓ **Highlight work**
- ✓ **Walk around whilst reading your notes**
- ✓ **Mind mapping**

Revision Techniques

Try to use revision methods that require you to think and engage in what you are doing.



A brief note: make sure you revise the things you don't like as well as those topics that you do! The ones you don't like are often the ones you find hard!

Revision Techniques

The fail safe methods!

Write your own notes. From what you have – summarise the topic.

Get some all exam questions and answer them in as much detail as possible – use your book or revision guide to help. You can even go over these **model answers again!**

Sample program for analysis
analysis is the process of
 breaking down a complex
 problem into smaller, more
 manageable parts.

Key concepts:
 - Top-down approach: start with a high-level goal and break it down into smaller tasks.
 - Bottom-up approach: start with small details and build up to the overall goal.
 - Iterative process: often involves repeating steps until a solution is found.

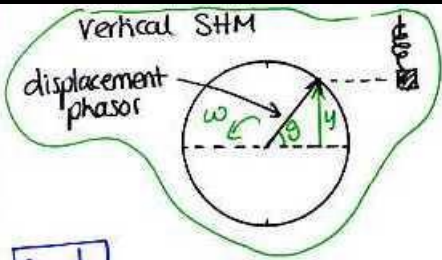
Advantages of analysis:
 - Clarifies requirements and goals.
 - Identifies potential risks and challenges early.
 - Facilitates better communication and collaboration.

Disadvantages of analysis:
 - Can be time-consuming.
 - Over-analysis can lead to decision paralysis.
 - May not account for all variables in a dynamic environment.

Additional notes on analysis:
 - Importance of defining clear objectives.
 - Regular communication and updates.
 - Flexibility to adapt to changing requirements.

Key terms and definitions:
 - Analysis: The process of breaking down information into smaller parts to understand its structure and meaning.
 - Top-down: A strategy where the whole is analyzed before the parts.
 - Bottom-up: A strategy where the parts are analyzed before the whole.

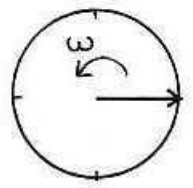
Practical application:
 - Use analysis to solve complex problems.
 - Apply analytical skills to research and decision-making.
 - Develop a structured approach to problem-solving.



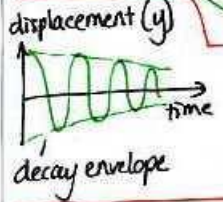
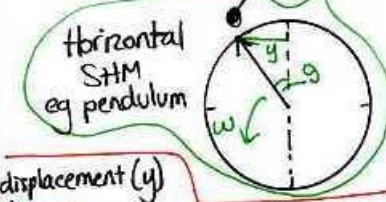
$$f = \frac{1}{T}$$

$$\omega = 2\pi f$$

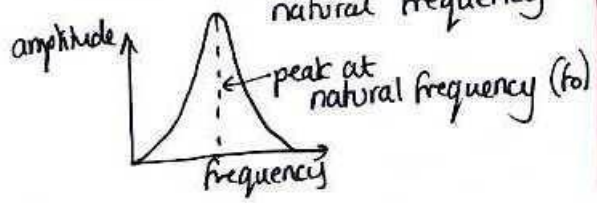
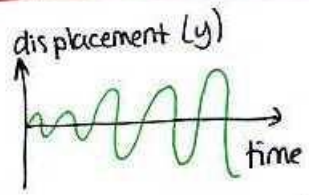
$$\omega = \frac{\Delta\theta}{\Delta t}$$



ω = angular frequency



Damping
Due to energy being converted to heat, because of friction & air resistance.



Energy is added by applying a force. Gives large amplitude if it is in time with natural frequency

Resonance

SHM

Maximums
from equations
max when $\cos\omega t$ or $\sin\omega t = 1$

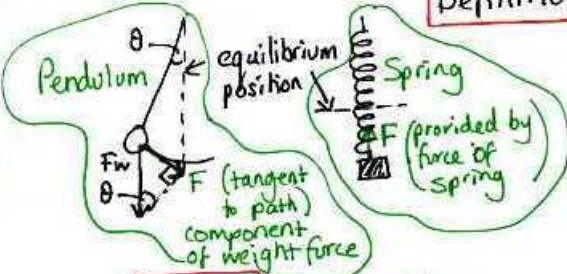
$$y = A$$

$$v = A\omega$$

$$a = -A\omega^2$$

Reference Circle

Vectors
For F, v, a, y opposite direction to y



Definitions

Motion repeats
force is proportional to displacement, and in the opposite direction (as $F=ma$ this is also true for acceleration)

$$a = -\omega^2 y$$

and as $F=ma$ also $F = -\omega^2 y \times m$

NOT SHM if the force is not changing
eg only force acting is gravity

Equations

Starting at the equilibrium position, y increasing

$$y = A \sin \omega t$$

$$v = A \omega \cos \omega t$$

$$a = -A \omega^2 \sin \omega t$$

Starting at maximum displacement

$$y = A \cos \omega t$$

$$v = -A \omega \sin \omega t$$

$$a = -A \omega^2 \cos \omega t$$

Period = time for one oscillation
(left to right and back again OR up, down and back up)

$$T = 2\pi \sqrt{\frac{L}{g}}$$

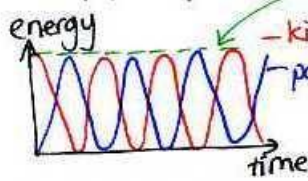
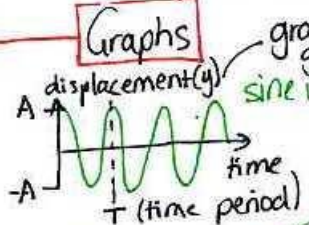
pendulum

$$T = 2\pi \sqrt{\frac{m}{k}}$$

spring

Know what affects the period of each eg. pendulum T not affected by mass

Graphs



gradient of y vs t graph gives velocity

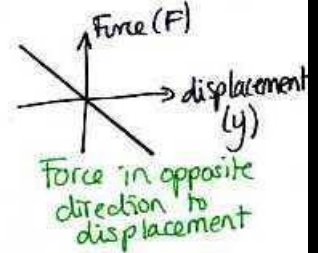
$$E_p = \frac{1}{2} k y^2$$

$$E_k (LIN) = \frac{1}{2} m v^2$$

$$\Delta E_p = m g \Delta h$$

Total energy is constant
 $E_T = E_k + E_p$

- kinetic potential
gravitational potential for a pendulum
elastic potential for a spring



Total energy = max kinetic energy = max potential energy

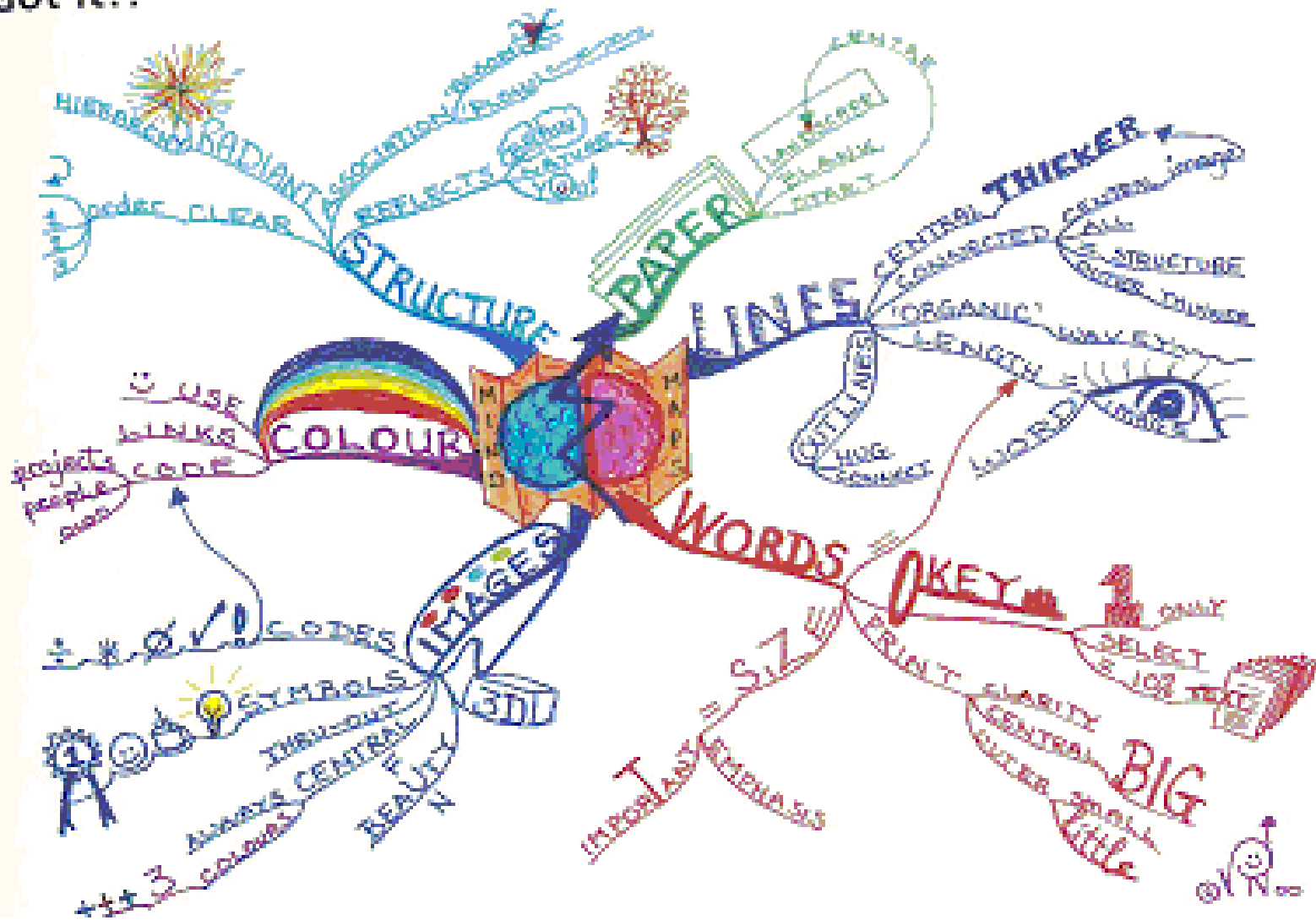
Revision Techniques

Mind mapping – mind maps are very useful for reviewing a topic and making the links between the different sections in your brain.

Colour code the branches

Use key words and images

Got it?!



Revision Techniques

Highlighting – if you are reading through some notes or looking over past **exam questions** then have a highlighter in your hand and pick out **key concepts** or **words** – again this engages your **brain** in the activity.



Revision Techniques

Lastly you could get friends or family to test you – or even try teaching some of the material to a friend or member of your family.

You can find out a lot about how much you understand when you have to teach somebody something!