Parent Workshop One

Knowledge Organisers

Mr B. Hodges - Assistant Principal

Excellence through rigour, resilience and passion

Excellence

Love

Family

Determination

Politeness

Why Knowledge is so Powerful

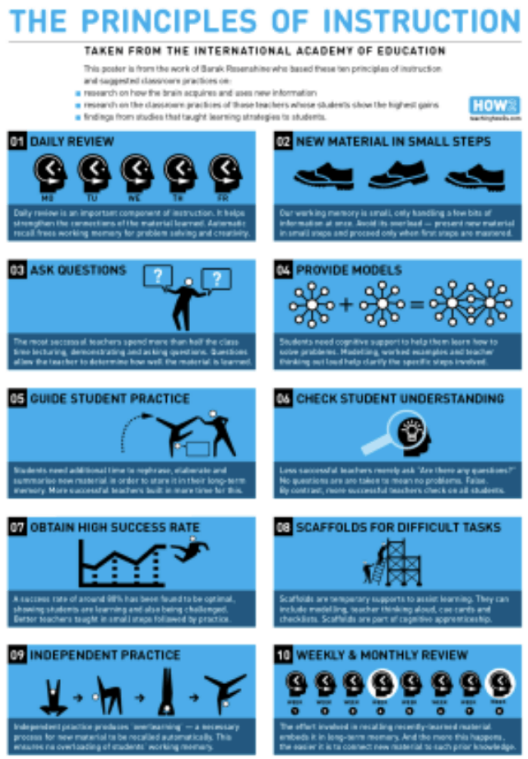
- First and foremost: confidence.
- Reflects the huge changes in assessment towards knowledge.
- Improves literacy, numeracy and analytical thinking skills.
- Increases ability to access further education.
- Increases ability to access employment sectors.
- Facilitates social mobility/increases cultural capital.

Theoretical Grounding

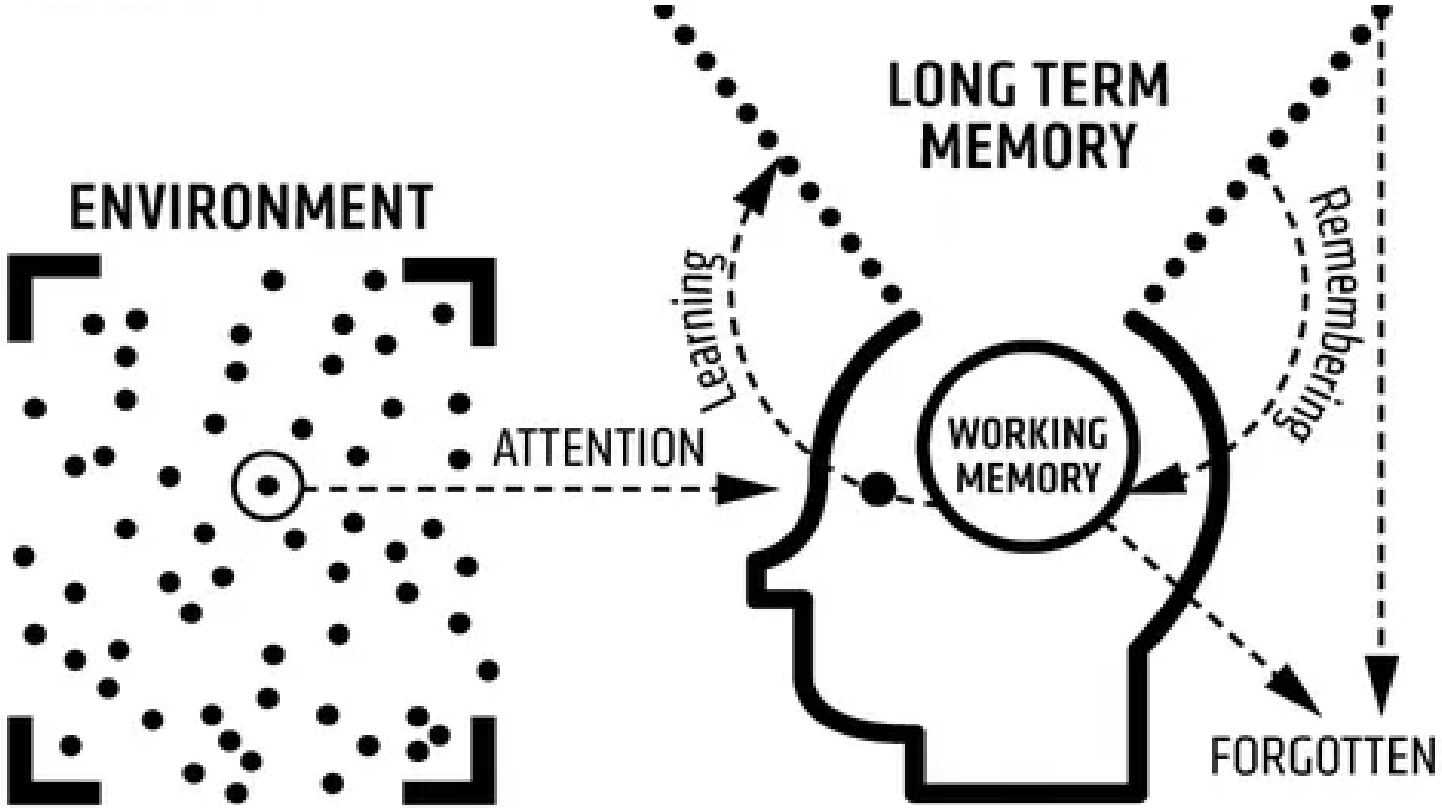
Correct use of knowledge organisers hit at least ***10 out of 17*** principles set forth by Rosenshine.

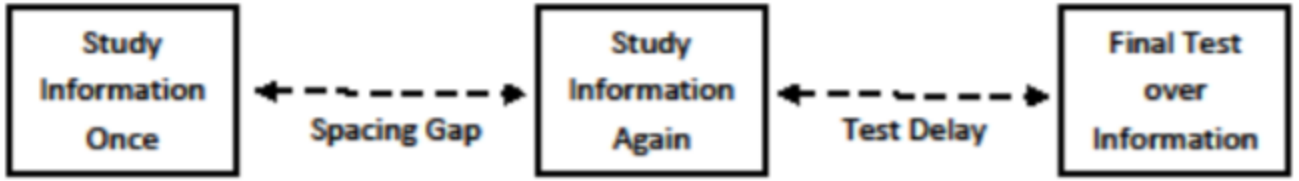
1. Begin a lesson with a short review
2. Present new material in small steps
3. Limit the amount of material students receive at one time
4. Give clear and detailed instructions and explanations
5. Ask a large number of questions and check for understanding
6. Provide a high level of active practice for all students
7. Guide students as they begin to practice
8. Think aloud and model steps
9. Provide models of worked out problems
10. Ask students to explain what they learned
11. Check the responses of all students
12. Provide systematic feedback and corrections
13. Use more time to provide explanations
14. Provide many examples
15. Re-teach material when necessary
16. Prepare students for independent practice
17. Monitor students when they begin independent practice.

Professor Barak Rosenshine



Memory and Interleaving





GCSE PHYSICAL EDUCATION - ANALYSING AND EVALUATING PERFORMANCE (AEP)

For the purpose of assessment, you are required to demonstrate your ability to analyse and evaluate your own practical performance in a sport of your choice.

The principles of training – Action Plan

The principles of training: SPORT
Specificity
Overload
Progression
Reversibility

Specificity
Making training specific to the sport being played / movements used / muscles used / energy system(s) used.

Progression
Gradual increase of the amount of overload so that fitness improves, but without potential for injury. Once adaptions have occurred make more demands of the body.

Agonist – The muscle that contracts (shortens).

Antagonist – The muscle that relaxes (lengthens).

Fixator – Stabilise the agonist muscle e.g. the rotator cuff is a fixator muscle for the movements shown above.

Reversibility
Losing fitness levels when you stop exercising. Use it or lose it.

Overload
Overload is the gradual increase of stress placed upon the body during exercise training (more than normal). Work the body harder.

Key principles of overload.
FITT: used to increase the amount of work the body does, in order to achieve overload
Frequency: how often you train
Intensity: how hard you train
Time: length of the training session
Type: specific method, used eg continuous training.

Types of training – Action Plan

Circuit training
A series of exercise stations whereby periods of work are interspersed with periods of rest. The content/demand of the circuit can be altered in order to improve different components of fitness.

Weight training
The use of weights/resistance to cause adaptation of the muscles.
Chose appropriate weight/exercise depending on fitness aim. eg strength/power training or muscular endurance

Continuous training
Sustained exercise at a constant rate (steady state) without rests, involving aerobic demand for a minimum of 20 minutes, eg running, swimming, rowing, cycling. It improves cardio-vascular fitness. Sometimes referred to as a steady state training. Appropriate to marathon runners.

Fartlek training
Swedish for 'speed play'. Periods of fast work with intermittent periods of slower work. Varying speed, terrain and work: rest ratios. Often used in running: sprint, jog, walk, jog, sprint, etc.

Interval training
Periods of training/work that are followed by periods of rest or low intensity exercise.

High intensity interval training (HITT)
Alternating periods of short intense anaerobic exercise with less intense recovery periods

Plyometric training
Use of plyometric exercises eg bounding, depth jumping, to increase power. It includes an eccentric contraction (lengthening of the muscle) followed by larger concentric contraction (shortening of the muscle).

Weight training

One rep max:
The maximal amount that can be lifted in one repetition by a muscle/group of muscles (with the correct technique).

Repetitions:
The number of times an individual action is performed. A set is a group of repetitions.

Components of fitness– Assessment & Analysing

Cardiovascular endurance / Stamina
The ability to keep exercising without getting tired. The more O2 that can be transported around the body the more the muscles can use this O2 the more cardiovascular endurance you have. Tests include the 12 min Cooper test the Multistage fitness (bleep) test. Examples of activities where it is important include Running, cycling, swimming and aerobics.

Strength
The ability of a muscle to exert a force over a short period of time. Depends on the size of and number of muscles involved. Tests for strength include the **grip strength dynamometer test** and the 1 rep max test. Good indications of strength on the 1 rep max test can include the bench press, squat or leg curl.

Agility
How quickly you can change direction under control maintaining speed, balance and power. Three main components include – core strength, balance and flexibility. Tests for agility include the **Illinois agility test.** Activities where agility is important include

Muscular endurance
The ability of the muscle or a group of muscles to contract or keep going without rest. Tests include the **press-up test and the sit-up test.** Examples of activities where it is important include cross country running, cycling, swimming, rugby and football.

Power
Used in dynamic activities such as jumps or breaking through a tackle. Power is often called fast strength. Tests include the **vertical jump test and standing long jump test.** Activities where power is particularly important include triple jump, games such as rugby, sprinting and throwing.

Balance
The ability to retain the center of mass above the base of support. Can be static (still) or dynamic (moving). The ability to stay upright and in control of body movement. Tests include the **Stork stand test.** Activities include Gymnastics, dance

Speed
The ability of the body to move quickly. Can be whole body parts (eg arms or legs) or can be the whole body. Can be seen as the maximum rate a person can move over a specific distance. Tests include the **30 meter sprint test.** Examples of activities where it is importance include athletics, swimming, squash, football and basketball.

Flexibility
The range of movement about a joint. Help to perform a sport safely and effectively. Reduces our chance of injury and reduces stress and strains to joints and muscles. Tests include the **sit and reach test.** Activities include gymnastics, dance, games such as hockey and football, tennis and table tennis.

Co-ordination
The ability to move limbs at different times to do more than one task effectively. Making a good decision and putting into action effectively. Tests include the **wall throw test.** Activities include Dance, racket sports, team games and martial arts.

Reactions
The time it takes to initiate an action or movement, or the time it takes to make a decision to move. Tests include the **meter ruler drop test.** Activities include the

Risk Assessment - Action Plan

Risk Assessments
The technique by which you measure the chances of an accident happening, anticipate what the consequences would be and plan actions to prevent it.

Examples of potential hazards:
Sports Hall – Exercise / gym equipment, walls, doors, windows, lighting, hard floor, other participants.
Fitness Centre – Equipment (broken or position), flooring, windows, free weights, other participants.
Playing field – litter (including broken bottles and dog mess), goal posts and other semi-permanent equipment, movable equipment, fencing, pitch surface, other participants.
Artificial outdoor areas – same as playing field.
Swimming pool – water, chemicals in the water, surface or surrounding area, equipment, weather (if outdoors), other participants.

Movement Analysis

Agonist – The muscle that contracts (shortens).

Antagonist – The muscle that relaxes (lengthens).

Fixator – Stabilise the agonist muscle e.g. the rotator cuff is a fixator muscle for the movements shown above.

1st class lever: The load and effort are at opposite ends of the lever. The fulcrum is in the middle. E.g. in the neck, headering a football.

2nd class lever: The fulcrum and effort are at opposite ends of the lever. The load is in the middle. E.g. standing on tiptoes, free throw in basketball.

3rd class lever: The fulcrum and load are at opposite ends of the lever. The effort is in the middle. E.g. in the elbow, doing a dumbbell curl in the gym.

Axes of rotation:

An axis of movement is an imaginary line which runs through the body.

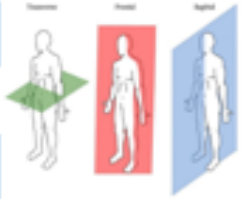
Sagittal axis: runs through body from front to back = Cartwheels

Transverse axis: runs through the body from left to right = forward rolls

Longitudinal axis: Runs through the body from top to bottom = full twist jump

S – Specific – targets must to the point.
M – Measureable – can it be measured and compared.
A – Achievable – the target must be challenging but yet reachable.
R – Realistic – matched to the performers skill level.
T – Time bound – Set for a particular time to be completed.

Transverse = Full twist jumps
Frontal = Cartwheels
Sagittal = Somersaults



Les loisirs sont passionnants	**Fan de musique ou cinéphile?**	sain - healthy	le frigo - fridge	jongler– to juggle
le film d'aventure – adventure film	commencer – to start, begin	le miel – honey	le déjeuner- lunch	le bowling – bowling alley
se détendre, se relaxer – to rest	regarder – to watch	avoir faim – to be hungry	la recette – recipe	jouer au bowling – to bowl
la course automobile – motor racing	surexcité(e) – excited	le goûter – snack	le vin rouge – red wine	le stage de cuisine – cookery cou
stupide - stupid	Tout vendu – sold out	la cafétéria – snack bar	la crème – cream	le concert– concert
Le documentaire - documentary	francophone – German speaking	le café – coffee	le sandwich au jambon – ham sandwich	la galerie d'art – art gallery
faire les courses– to shop	avoir du succès– successful	le fromage – cheese	la soupe – soup	Le moniteur/ la monitrice – coac
le billet – ticket	c'est à propos de – It's about	le biscuit – biscuit	**L'exercice c'est le mieux!**	les échecs – chess
le marchand de glaces– ice cream vendor	le rôle principal – star role	faire la cuisine – cook	le travail dur – hard work	se bronzer – to sunbathe
regarder la télé - to watch tv	sortir (film) – to release (film)	le gâteau - cake	patiner sur glace– to ice skate	participer à – to take part
les séries télévisées – tv series	apprendre à connaître – to get to know	délicieux– tasty	fatigant- tiring	tennis de table – table ten
les loisirs - freetime	la comédie – comedy	L'heure du repas – meal (time)	le gymnase – gym	le tournoi – tournament
l'énigme – plot, storyline	le membre – member	le fruit – fruit	génial – great	faire une randonnée – to hike, w
s' intéresser à – to be interested in	maison de disques – record company	les frites – chips	le netball – netball	la randonnée - hike
le club de jeunes – youth club	la batterie – drum kit	le kebab – kebab	courir– to run	**Es-tu brave?**
faire la cuisine – to cook	la tournée – tour	la moutarde – mustard	faire du cyclisme – to go cycling	La peur – fear
le drame policier – detective drama	vendre – to sell	la spécialité – speciality	patiner – to rollerskate	L'équipement– equipment
ennuyeux– boring	Mondial(e)– worldwide	les bonbons – sweets	nager – to swim	accompagner – to accomp
le film romantique – romantic film		le/la végétarien(ne) - vegetarian	faire de la voile – to sail	découvrir – to experience
l'équipe – team	**Nourriture et boisson**	le raisin- grape	skier – to ski	Le parachutage - parachuting
le journal, les info – news	la pomme– apple		s'amuser– to have fun	L'extérieur- outside
se passer – to happen	l'orange – orange	**Où voulons-nous manger?**	le type de sport – type of sport	Les empreintes – footprint
le feuilleton – soap opera	choufleur – cauliflower	la soupe à l'anguille– eel soup	**Le sport pour tous**	Le lac de montagne – mountain l
l'émission– programme	la saucisse frite– fried sausage	le repas du soir – evening meal	partir – to depart	Le défi - challenge
Excitant(e) – exciting, thrilling	le pain – bread	la vieille ville – old town	bien s'amuser – to enjoy oneself	L'exploit – achievement
quotidien(ne)– daily, every day	l'oeuf – egg	le poulet rôti – roast chicken	le voyage, excursion – trip, excursion	Avoir du courage – to have coura
répéter – to practise, rehearse	la glace – ice cream	la saucisse épicée– spicy sausage	se laver – to bathe	brave – brave, courageous
améliorer – to improve	la nourriture – food, meal, cuisine	la boulette de viande –meatball	la visite – visit	essayer – to try out
la publicité - advertisement	le poisson – fish	le petit-déjeuner - breakfast	l'enregistreur - recorder	plonger – to dive
la météo – weather forecast	la viande – meat	apprécier – to enjoy	la chose – thing	surmonter – to overcome
	le jus de fruit – fruit juice	la framboise – raspberry	l'escrime - fencing	Aventureu(x)/se - adventurous
prendre une bouffe d' air frais– to get a breath of fresh air	le restaurant – pub	la pomme de terre – potato	la visite guidée – guided tour	La nage en eau vive – white water swimming
	les légumes- vegetables	la cuisine – kitchen, cuisine	le barbecue - bbq	à un moment donné– point in tir

Macbeth, by William Shakespeare

A. Context

1597	*Daemonologie* written by James, the future king.
1599	*Basilikon Doron* (meaning royal gift) written by James, the future king.
1603	Death of Elizabeth I and the accession of James I. Beginning of Jacobean era.
1605	The Gunpowder Plot.
1606	*Macbeth* first performed.
1616	Shakespeare dies aged 52
The Great Chain of Being	
The Divine Right of Kings	

B. Vocabulary/Concepts

Protagonist	Main character.
Antagonist	Oppositional character.
Phallic	Alluding to the penis.
Sycophantic	Flattering for personal gain.
Tragic Hero	Inherently good character who falls.
Duplicitous	Two-faced.
Hamartia	A fatal flaw.
Equivocation	Purposely false statement.
Transgress	Go against.
Misogyny	Hatred of women.
Patriarchy	Male dominated society.
Emasculation	The removal of 'maleness'.
Dichotomy	Relationship between opposites.
Regicide	Killing of a king.
Id	Unconscious, instinctive desire.
Ego	Realistic, rational mind.
Super Ego	Idealistic "correct" behaviour.
Paradox	Self-contradictory statement.

C. Key Scenes

Act 1 Scene III	Macbeth and Banquo meet witches and prophecies are made.
Act 1 Scene V	Lady Macbeth read's Macbeth's letter and decides on a course of action.
Act 1 Scene VII	Macbeth ponders and worries yet is vigorously persuaded by Lady Macbeth.
Act 2 Scene II	The aftermath of the "deed".
Act 3 Scenes I/II	Banquo is suspicious. Macbeth and Lady Macbeth discuss the best course of action.
Act 3 Scene IV	Macbeth sees shocking images via hallucination.
Act 4 Scene I	Macbeth visits the Witches and receives more prophecies.
Act 4 Scene II	Lady Macduff's castle is surprised.
Act 5 Scene I	Lady Macbeth sleepwalks and hallucinates.
Act 5 Scene V	Macbeth's nihilistic soliloquy regarding time.

D. Thematic Content

Unchecked Ambition	The corrupting nature of immoral "desire".
Religion	The schema of existence in Jacobean England.
Biblical Imagery	Multiple allusions to the Bible throughout the play.
The Supernatural	The power of mysterious, unnatural forces.
Cruelty vs Masculinity	Was/Is viciousness a key aspect of being male?
Betrayal	Macbeth's levels of extreme disloyalty/treachery.
Time	Nihilistic approach to the pointlessness of existence.
Fate vs Free Will	Predetermination or choice?

E. Key Characters

Macbeth	Thane of Glamis.
Lady Macbeth	Wife of Macbeth.
King Duncan	King of Scotland.
Banquo	Loyal friend to Macbeth.
Macduff	Thane of Fife.
Three Witches	"Weird" (fate) sisters.
Malcolm	Son of Duncan.

F. Quotations

- *"Fair is foul, and foul is fair."*
- *"Stars, hide your fires. Let not light see my deep and black desires."*
- *"Look like the innocent flower but be the serpent under it."*
- *"Yet I do fear thy nature; It is too full o' the milk of human kindness..."*
- *"Unsex me here, fill me from the crown to the toe top full of direst cruelty."*
- *"I dare do all that may become a man; Who dares do more is none."*
- *"Or art thou but a dagger of the mind, a false creation..."*
- *"Macbeth doth murder sleep."*
- *"A little water clears us of this deed."*
- *"There's daggers in men's smiles."*
- *"I fear thou play'dst most foully for it."*
- *"O full of scorpions is my mind, dear wife."*
- *"I am in blood stepped in so far that... returning were as tedious as go o'er."*
- *"It will have blood, they say; blood will have blood."*
- *"Out, damn spot! Out I say!"*
- *"Yet who would have thought the old man to have so much blood in him?"*
- *"Out, out, brief candle!"*
- *"Tomorrow, and tomorrow, and tomorrow, creeps in this petty pace..."*
- *"It is a tale, told by an idiot, full of sound and fury, signifying nothing."*
- *"Despair thy charm...Macduff was from his mother's womb untimely rip'd."*
- *"This dead butcher and his fiend-like queen."*

G. Critical Approaches

Binary Opposition	The nature of opposites or dualism.
Feminist	Equality for women.
Psychoanalytic	Freudian approach to the (mainly) unconscious mind.
Historicism	Alternative approaches to history.

H. Literary Techniques

Tragedy	A text dealing with tragic occurrences and the downfall of the protagonist.
Soliloquy	Thoughts spoken aloud to the audience by one character.
Foreshadowing	Subtle prediction of later action.
Elision	Action taking place offstage.
Symbolism	One thing standing for, or representing, another.
Motifs	Recurring images/symbols within a text (blood, hallucinations, sleep, hands).
Freytag's Pyramid	Five stages of a dramatic text.
Pathetic Fallacy	Weather reflecting the mood or atmosphere.
Euphemism	A polite word or expression replacing harsh/unpleasant ones.

Paper 1 Physics equations

Average speed (m/s) = distance (m) ÷ time (s)
Distance travelled (m) = average speed (m/s) x time (s)
Acceleration (m/s^2) = change in velocity (m/s) ÷ time (s)
Acceleration = (final velocity - initial velocity) ÷ time
Final velocity^2 – initial velocity^2 = 2 x acceleration x distance

Force (N) = mass (kg) x acceleration (m/s^2)

Force = change in momentum (kg m/s) ÷time (s)
Weight (N) = mass (kg) x gravitational field strength (N/kg)

Note gravitational field strength on Earth is 10N/kg
Momentum (kg m/s) = mass (kg) x velocity (m/s)
Acceleration at free fall is 10m/s^2
Change in gravitational potential energy (J) = mass (kg) x gravitational field strength (N/kg) x change in vertical height (m)
Kinetic energy (J) = 0.5 x mass (kg) x (speed)^2 $(m/s)^2$
Efficiency = useful energy ÷ total input energy
Wave speed (m/s) = frequency (Hz) x wavelength (m)
Wave speed (m/s) = distance (m) ÷ time (s)

Paper 2 Physics equations

Work done (J) = force (N) x distance moved (m)
Power (W) = work done (J) ÷time (s)
Power (W) = energy transferred (J) ÷ time (s)
Energy transferred (J) = charge moved (C) x potential difference (V)
Charge (C) = current (A) x time (s)
Potential difference (V) = current (A) x resistance (Ω)
Density (kg/m^3) = mass ÷ volume (m^3)
Electrical power (W) = current (A) x potential difference (V)
Electrical power (W) = current squared (A^2) x resistance (Ω)

Force exerted on a spring (N) = spring constant (N/m) x extension (m)

Percentage Increase & Decrease

$$\frac{\text{New value} - \text{Original value}}{\text{Original value}} \times 100$$

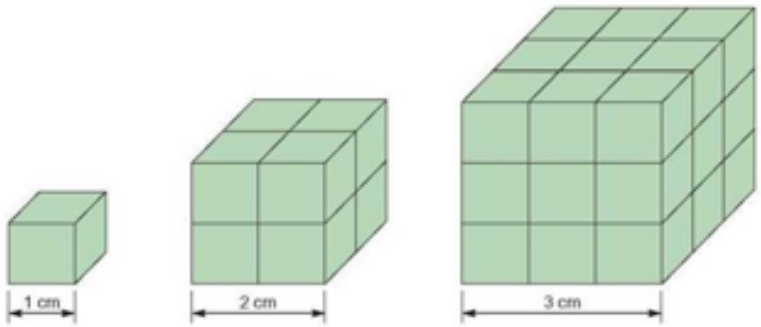
Example

The price of a plane ticket has increased from $600 to $750
Calculate the percentage increase

$$\frac{750 - 600}{600} \times 100 = 25\%$$

% Increase = 25%

$$\text{magnification} = \frac{\text{size of image}}{\text{actual size of object}}$$



6 cm^2	24 cm^2	54 cm^2	Surface area (length × width × number of sides)
1 cm^3	8 cm^3	27 cm^3	Volume (length × width × height)
6:1	3:1	2:1	Surface area-to-volume ratio

Waist:Hip ratio

A ratio above 0.85 for women indicates risk of type 2 diabetes and 1 for men.

$$BMI = \frac{\text{weight (kg)}}{\text{height}^2\ (m^2)}$$

Weight Categories	BMI (kg/m^2)
Underweight	< 18.5
Healthy Weight	18.5-24.9
Overweight	25-29.9
Obese	30-34.9
Severely Obese	35-39.9
Morbidly Obese	≥40

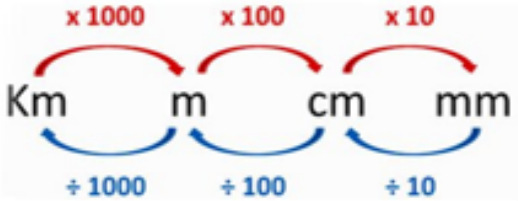
Prefix	Standard form	Number
tera (T)	10^{12}	1,000,000,000,000
giga (G)	10^{9}	1,000,000,000
mega (M)	10^{6}	1,000,000
kilo (k)	10^{3}	1000
deci (d)	10^{-1}	0.1
centi (c)	10^{-2}	0.01
milli (m)	10^{-3}	0.001
micro (μ)	10^{-6}	0.000001
nano (n)	10^{-9}	0.000000001

Converting Between Metric Units

Length:

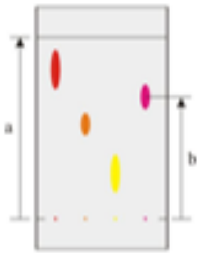
Mass:

Volume:



The R_f value for each dye is then worked out using the formula:

$$R_f = \frac{\text{distance travelled by component}}{\text{distance travelled by solvent}}$$



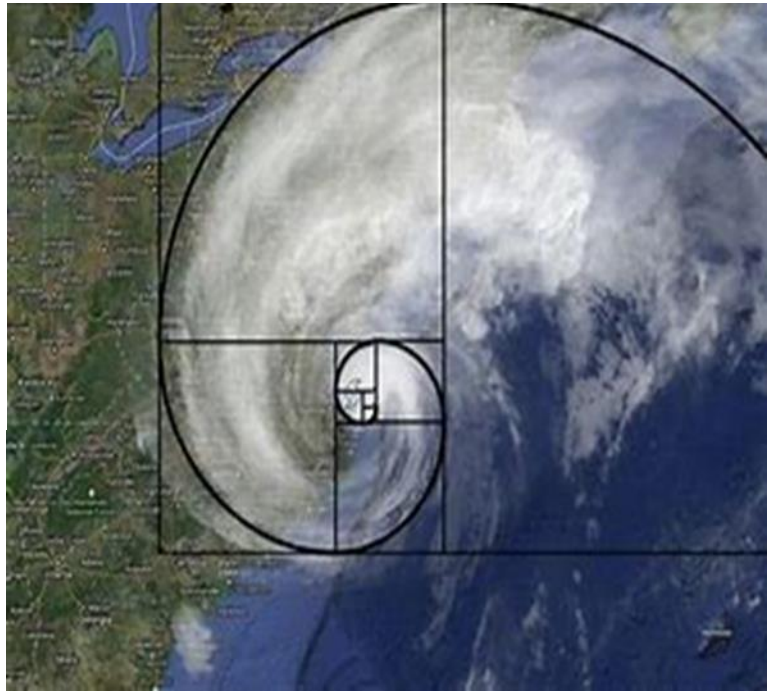
Knowledge Organiser

How to use

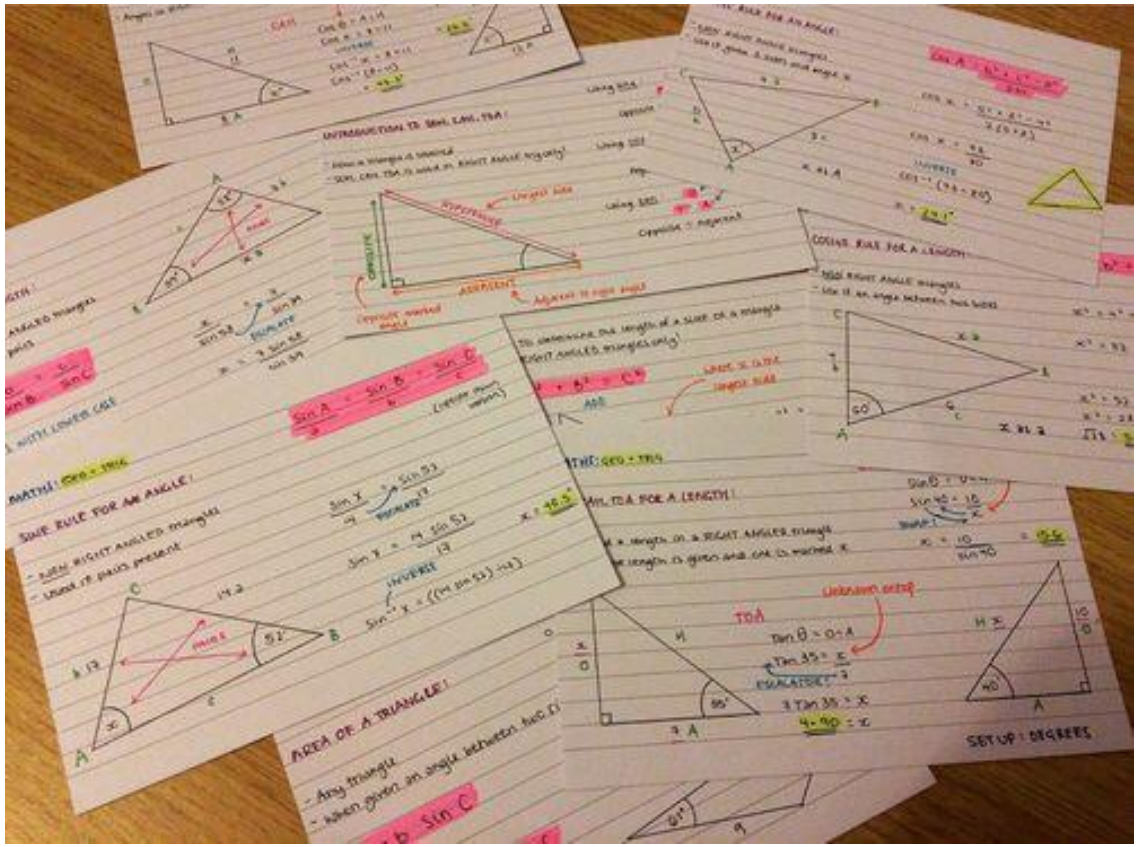
- Must allow for constant low stakes quizzing, usually via the Do it Now - making it stick via repetition and interleaving.
- Must be prevalent - they always have to be out and being used.
- Highlighting as a concept is absorbed a good visual technique for students.
- Peer assessment a cornerstone.
- Must be inextricably linked to the Oasis Independent Writing Task.
- Make one KO, *the* KO.
- Try to dual-code the concepts.

Dual-coding theory postulates that both visual and verbal information is used to represent information. Visual and verbal information are processed differently and along distinct channels in the human mind, creating separate representations for information processed in each channel.

Dual-Coding



Revision/Cue Cards



https://www.aft.org/sites/default/files/periodicals/Rosenshine.pdf

https://improvingteaching.co.uk/2017/04/23/better-planning-better-teaching-better-learning-a-template/

https://www.teachertoolkit.co.uk/2018/03/11/knowledge-stick/

https://pragmaticreform.wordpress.com/2015/03/28/knowledge-organisers/

https://mcsbrent.co.uk/category/michaela-blog/

https://jlmfl.wordpress.com/2017/04/23/michaela-french-how-we-use-knowledge-organisers/

https://teacherhead.com/2018/06/06/what-is-a-knowledge-rich-curriculum-principle-and-practice/

https://teacherhead.com/2017/09/20/teaching-fundamentals-2-be-precise-about-what-you-want-to-be-learned/