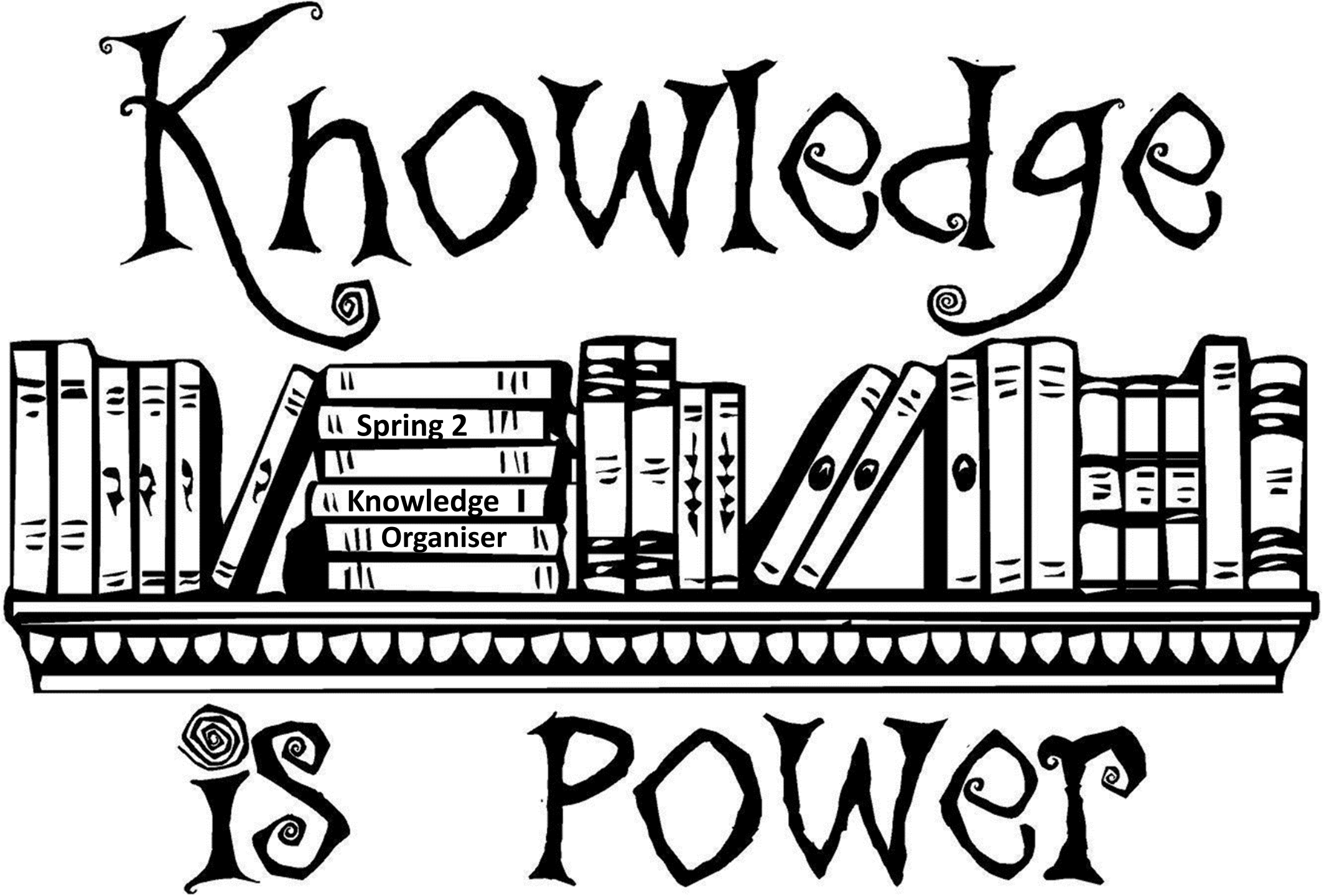
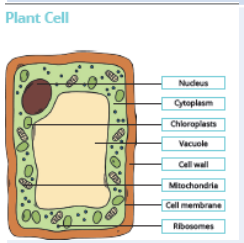
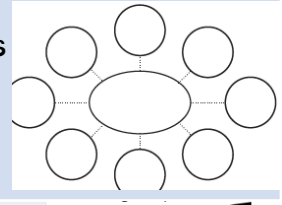
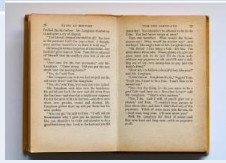

Knowledge
Spring 2
Knowledge
Organiser
IS POWER

Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.

The knowledge is evolutionary not revolutionary. Approximately half the knowledge is new and half helps you revise. Many of the activities are changing. We hope you enjoy them.

Y8 – in SKL we will build upon work covered in Year 7 on friendships and keeping safe by looking at the concept of tolerance. We will explore different kinds of relationships and try to understand why some people are intolerant and others are not.

Idea	Explanation
Make some flash cards or PowerPoint slides. Make top trumps. 	Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself.
 Make a poster.	Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last!
Draw spider diagrams, or for the adventurous mind maps. 	Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall.
Write a song or a rap. 	Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising.
 Plan a lesson	If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term.
Write a story or comic strip. 	Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it.
Write a quiz. Design a game. 	Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember.

Open Academy DARES students to leave their devices!

» Aspiration
There are no barriers to your ambition
» Leadership
Live your own life
» Teamwork
Together we achieve more
» Humility
Put others first
» Courage
Handle your fear
» Hard work
We need to make the most of our talents
» Respect
Treat others as you would like to be treated yourself
» Service
It is better to give than to receive
» Integrity
Be true to yourself
» Forgiveness
Forgiveness is a friendship preserver
» Thankfulness
Appreciate others; appreciate what you have
» Perseverance
Never give up

Core Values

www.open-academy.org.uk

Directed Activities Related to Everyday Situations / (Stuff)

ThursDares Afternoon

We will all leave our devices on Thursday afternoon to maintain our mental health

Purposes

Increase well-being by:

- Try to reduce workload in the long term for staff
- Try to reduce screen time for all staff
- Support more flexible working for staff who are multitasking
- Try to reduce screen time for students
- Enable the curriculum to still work effectively
- Increase engagement with all learners
- Bring joy into learning
- Share best practice reducing workload

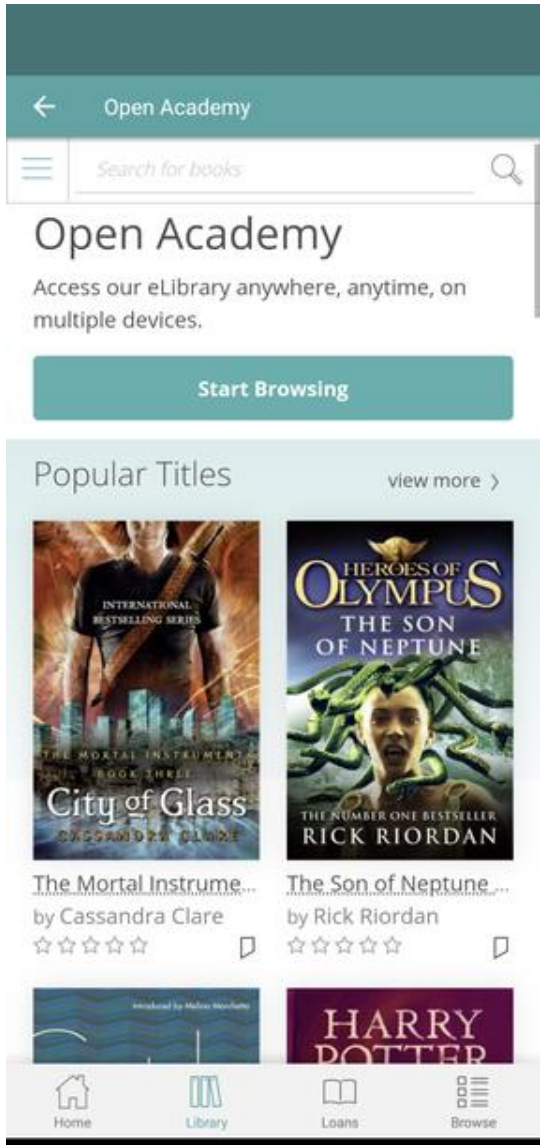
Stuff in Rooms

1. Projects on i.e. estimating… volumes of rooms, furniture, other items – then checking by measuring
2. Finding and counting things – angles, colours, shapes or patterns in a given room ie the living room – then graphing / comparing to other rooms / describing
3. Eye spy – with curriculum links – as usual but student has to say where it connects to current lessons…
4. Exercise using living room 'equipment'
5. Time lapse photo story what happens in a room – or out of the window as the story of what can be see outside – e.g. over an hour, day or week…
6. Meditation introduction
7. Beginners yoga exercises e.g. from YouTube
8. Beginners Tai Chi exercises from YouTube
9. Relaxation techniques and time
10. Sorting / categorising / counting / graphing / objects in the room
11. Listen to a documentary / science prog / history etc on radio 4
12. Listen to your favourite album / playlist / radio prog for 30 mins – try to think about why you like it so much – what does it make your feel

GoggleBox Stuff

1. Watch a documentary with someone else and discuss it. Try to summarise THEIR view of it at the end
2. Create an animated version of a film story using playdoh, Lego mini-figures or stick people
3. Watch a football/ cricket match on TV and try to work out where the cameras are situated – draw them on a sketch of the stadium
4. Watch a specific BBC Learning broadcast program and write a summary – (Weekly Secondary Program guide available her) https://bam.files.bbci.co.uk/bam/live/content/zmbyp4j/pdf
5. Exercise (Jump /jog, sit-ups etc) every time adverts appear on the tv
6. Watch their favourite show and try to watch it like a critic might – what could be improved
7. Watch something they wouldn't usually watch like a news program or documentary on something outside their interest
8. Plan a family viewing diary for the week – then get everyone to rate their shows after they watch them – they could then try to analyse those plans with charts and graph
9. When watching an interview on TV pretend they are answering the question or interview those around they to see what they think of what they are watching
10. Complete workouts with a TV trainer or follow a TV chef recipe

READING AT HOME

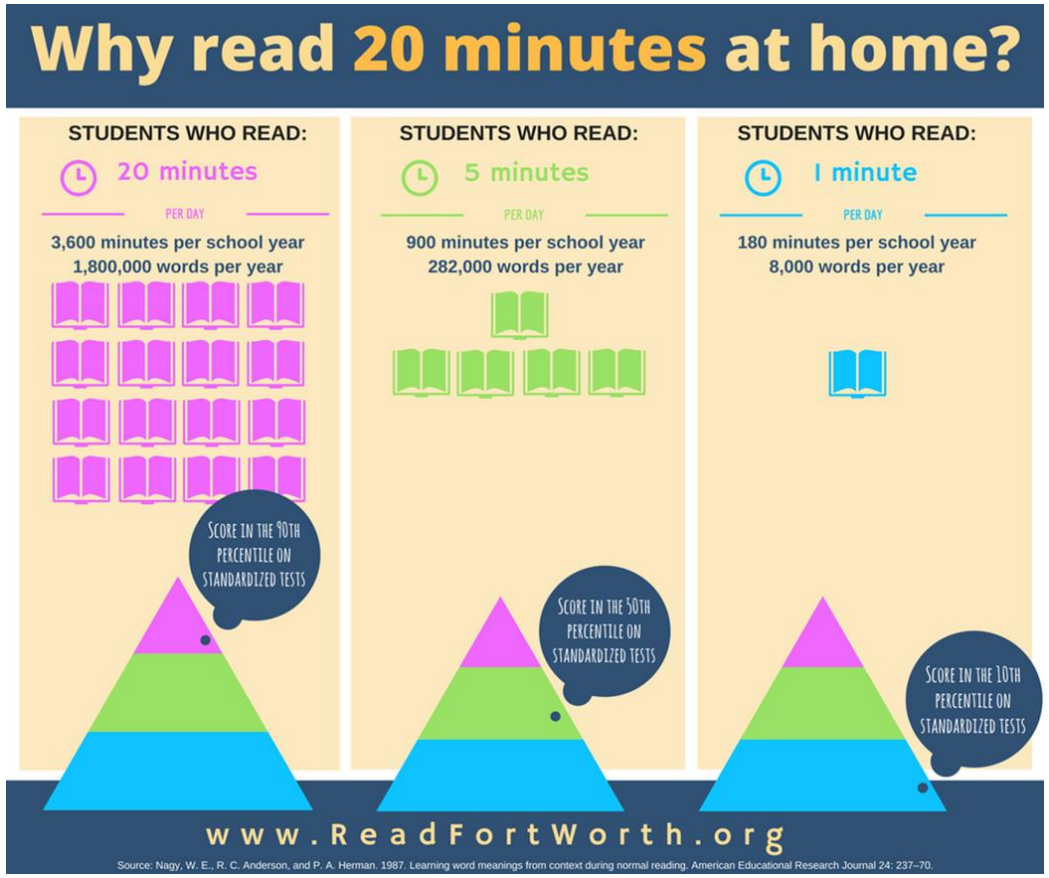


Access eBooks anytime, anywhere with our school eBook platform.

Scan this QR code to be taken to the website and start borrowing today:

SCAN ME

Please contact Miss Ling if you are unsure of your log in details.

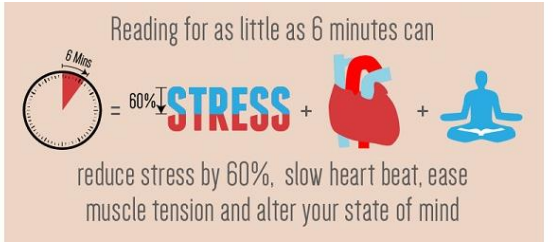


https://openacademy.eplatform.co/

Reading has a number of benefits:

- Success at school
- Mental health & wellbeing
- Better sleep
- Develop empathy
- Escapism (books can take you anywhere)

...and more!



ReadFit

A workout for your brain!

Read More ● Build Reading Stamina ● Make Reading a Daily Habit

To be a good reader, much like a marathon runner, you need to put in time and practice to be successful. Runners train over time, gradually increasing the difficulty by increasing the amount of time they run, the distance they run and the speed at which they run.

You can apply a similar idea to reading. To train to be a great reader, you can start by reading easier books, for a short period of time, and by breaking your book into small chunks (i.e. a few pages at a time). As you continue your reading training, you can gradually build up to reading more difficult texts, reading for longer and reading bigger sections of your book in one go.

ReadFit is a programme designed to help you on your reading journey. With beginner and hero challenges, each week there will be daily "reading workouts" to help you read more and reach 20 minutes of daily reading. Complete the "workouts" to unlock digital badges and rewards.

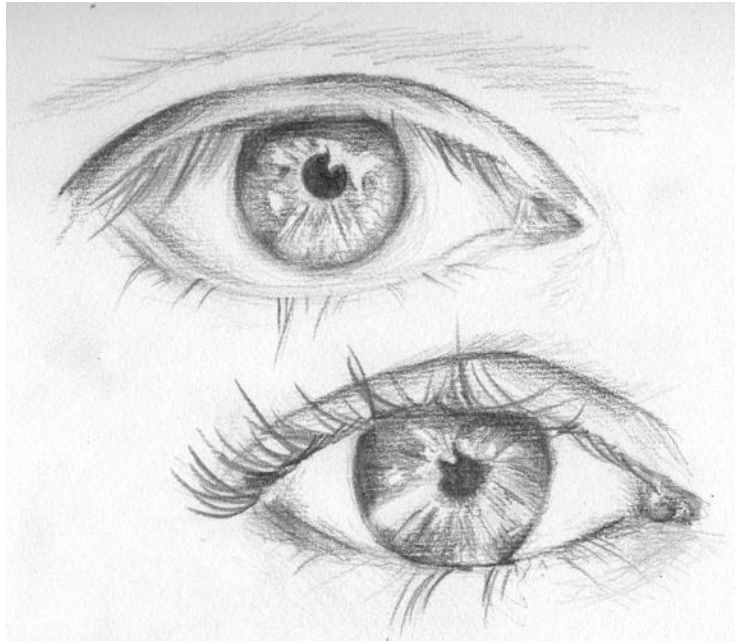
WEEK 1 ReadFit LOG

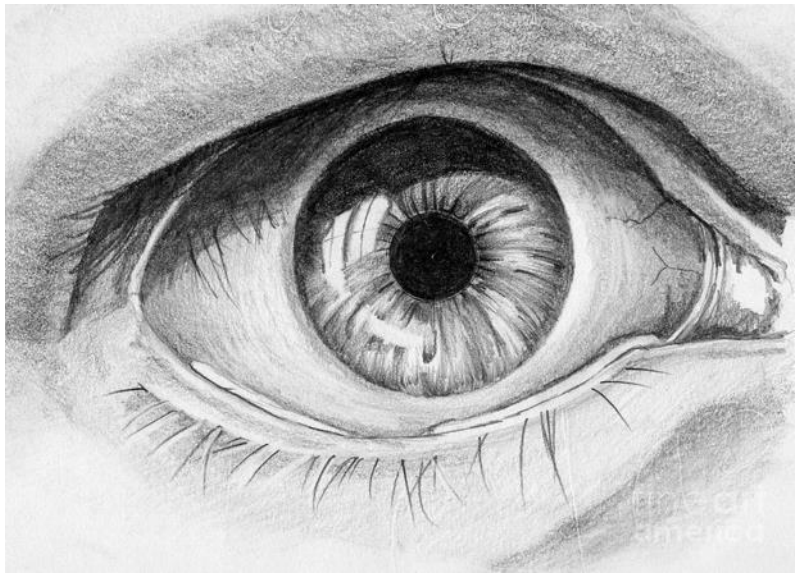
Title of the book I am reading:

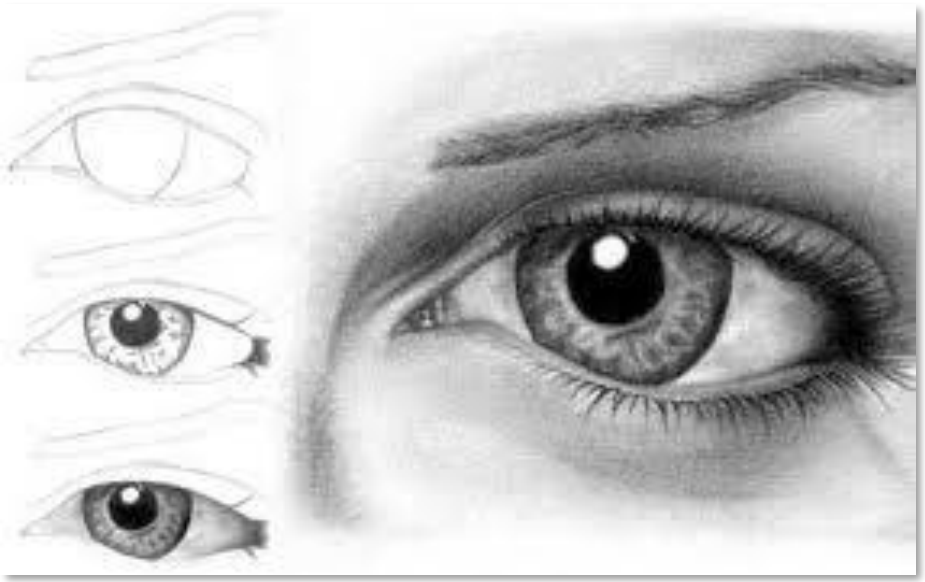
Day 1 Page to	Day 2 Page to	Day 3 Page to	
Day 4 Page to	Day 5 Page to	Main characters	Tricky words
I thought the book was (what are you enjoying or disliking about the book, share your thoughts here):		I found the book: Easy Okay Hard Very Difficult I would recommend this book to others: Yes No	

View the weekly challenges in Teams, or scan the QR code to take part

Drawing Eyes

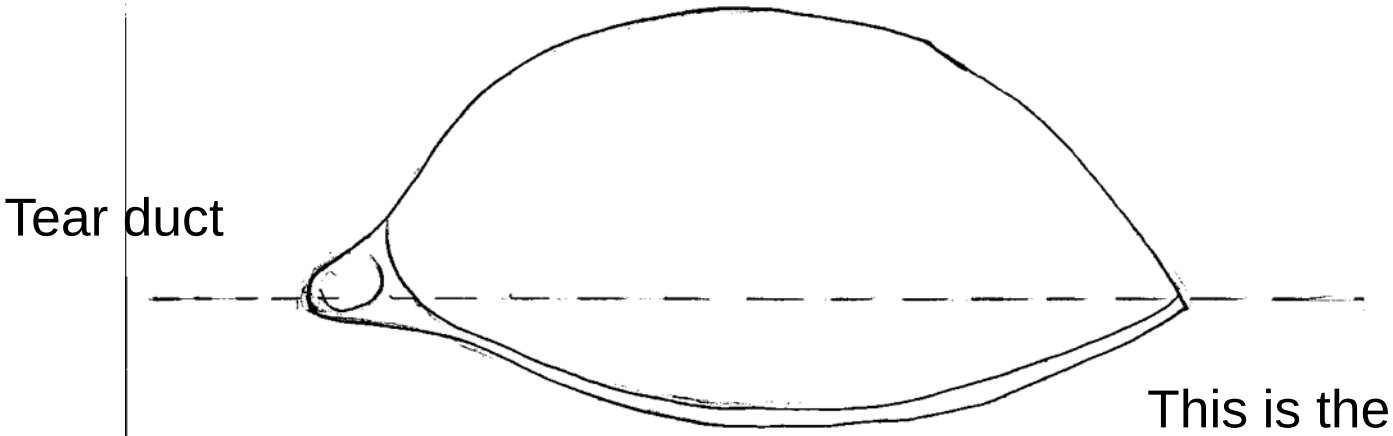






Drawing Eyes

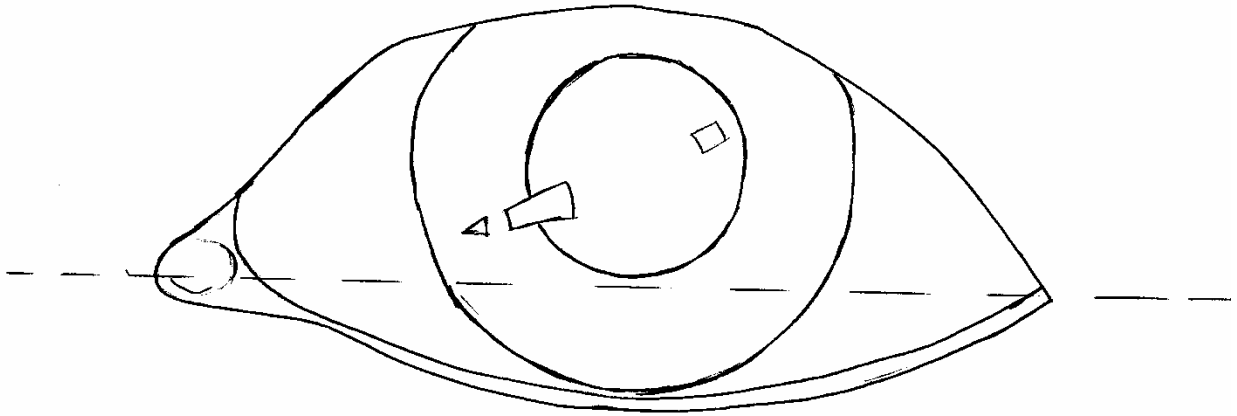
Notice the top of the eye is more arched than the bottom curve



At this stage the eye looks a little like a squashed lemon!

Use the Guide sheets to help you to draw an eye using PENCIL

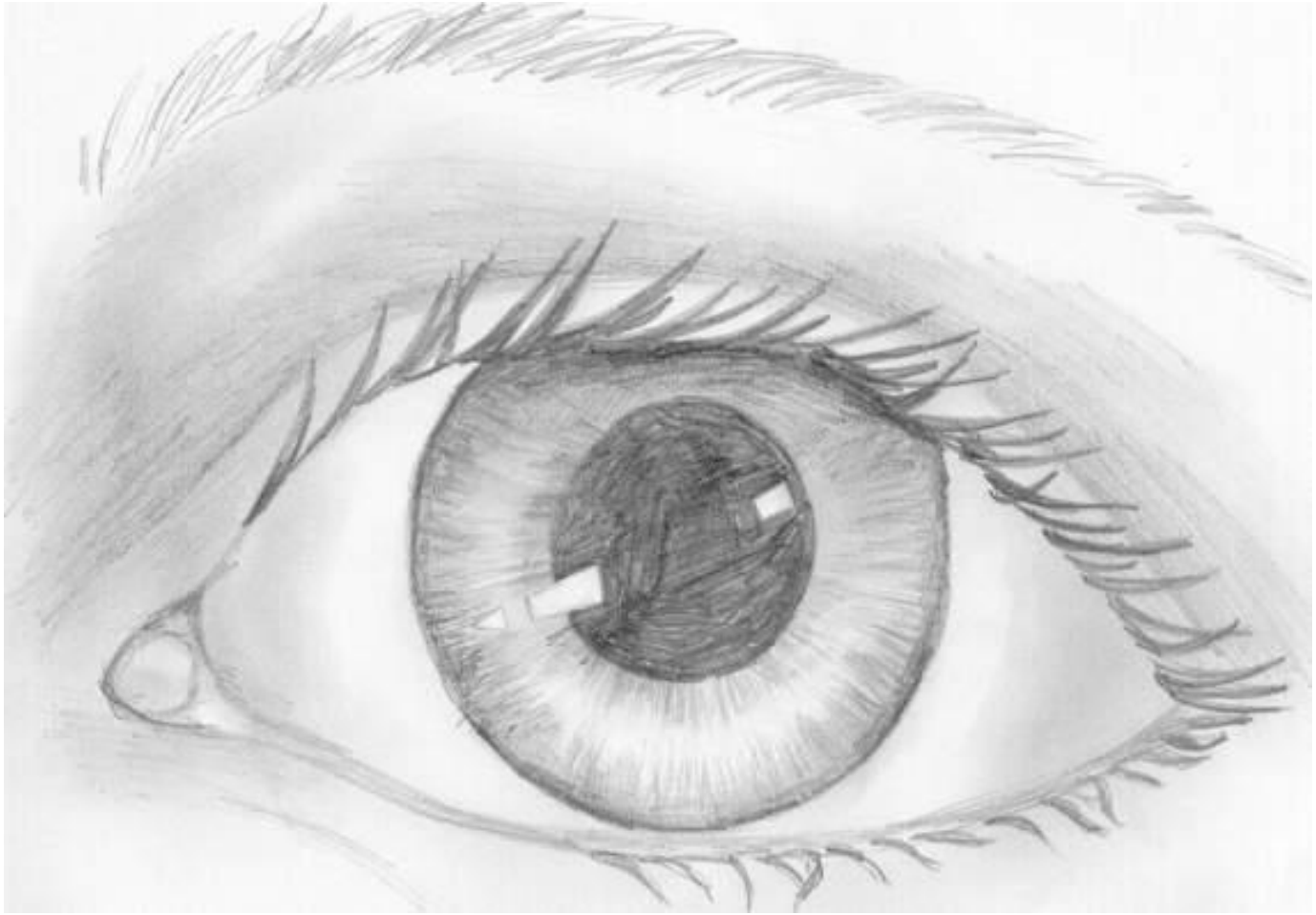
Notice the top of the iris is covered by the eyelid



The pupil should be placed right in the centre of the iris

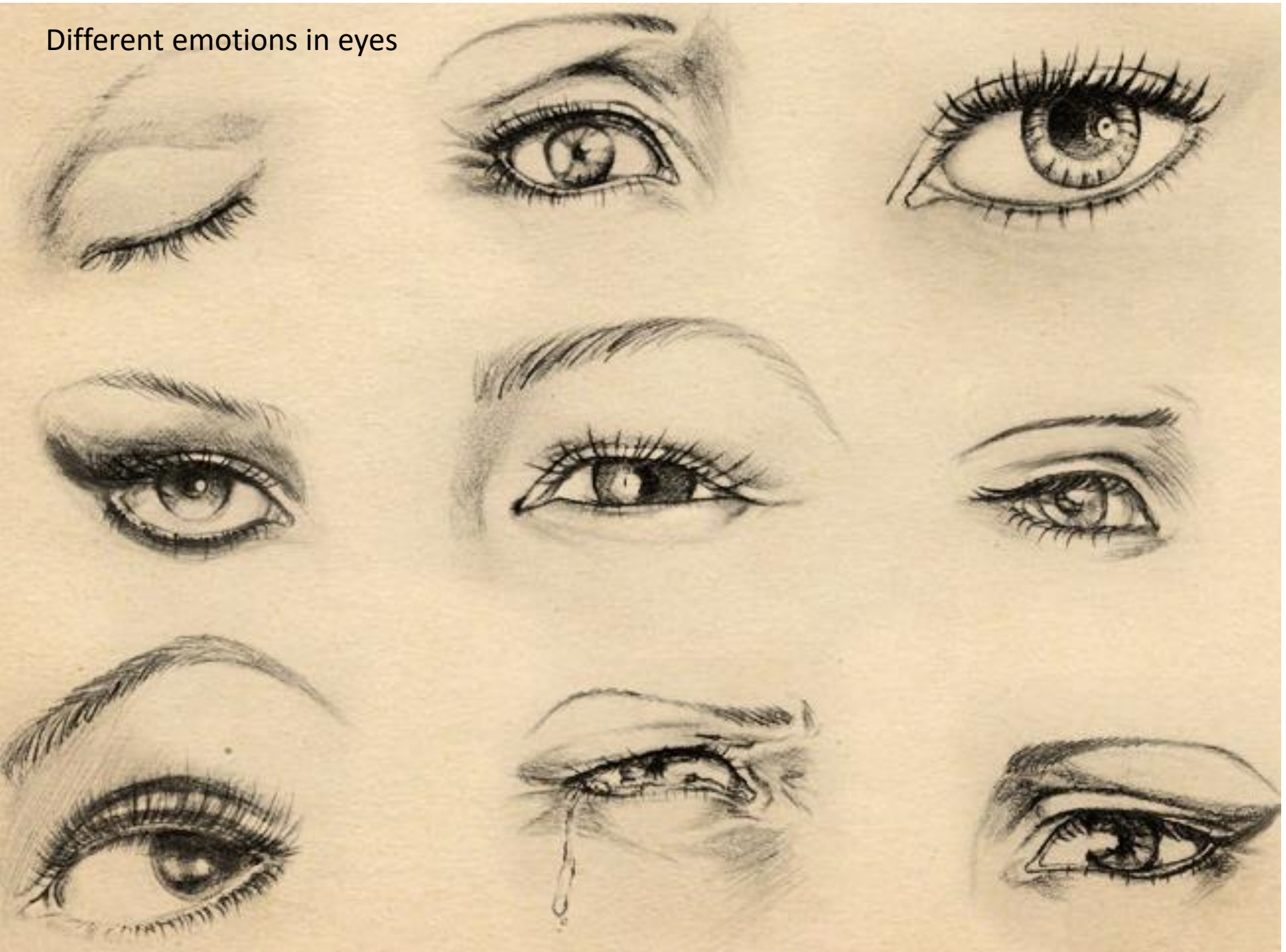
Add the pupil and iris

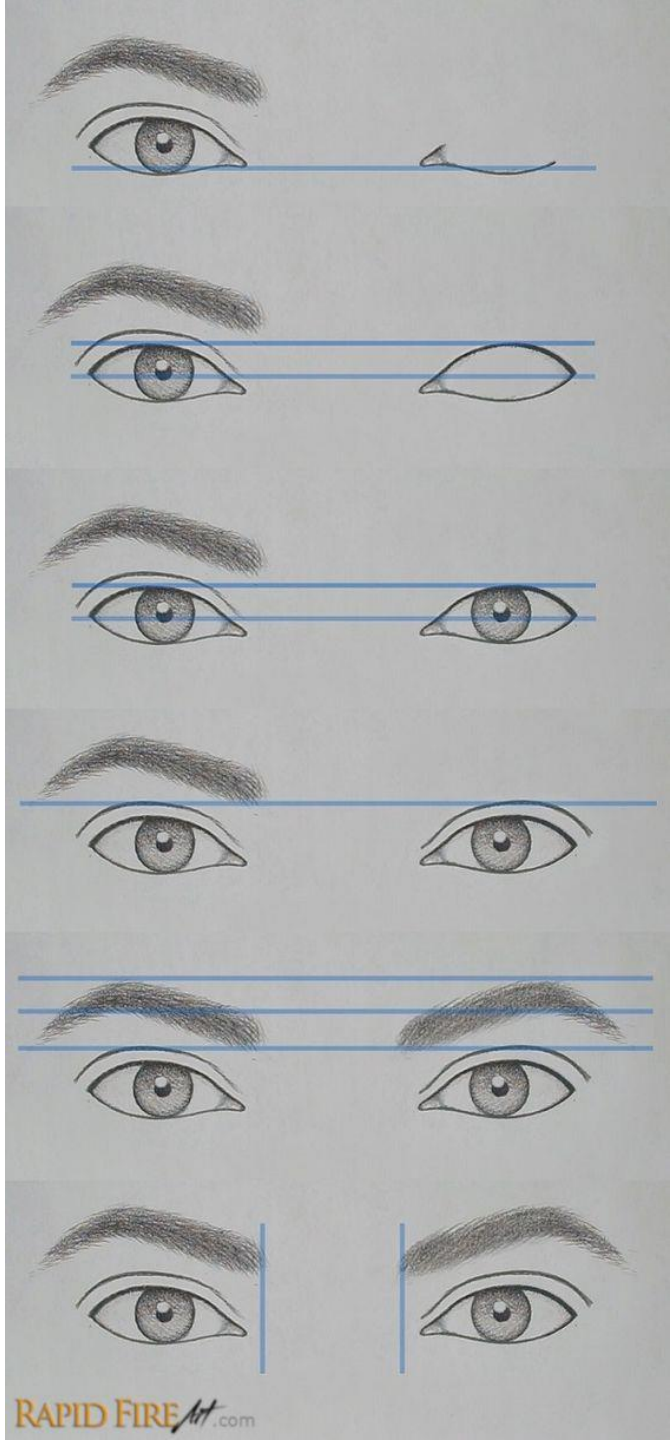
Rub out your guideline and add tone to make the eye look more realistic



The iris should have a variety of tones and tends to get darker towards the outer ring. Even the white part of the eye has tone towards the edges, giving the eye form.

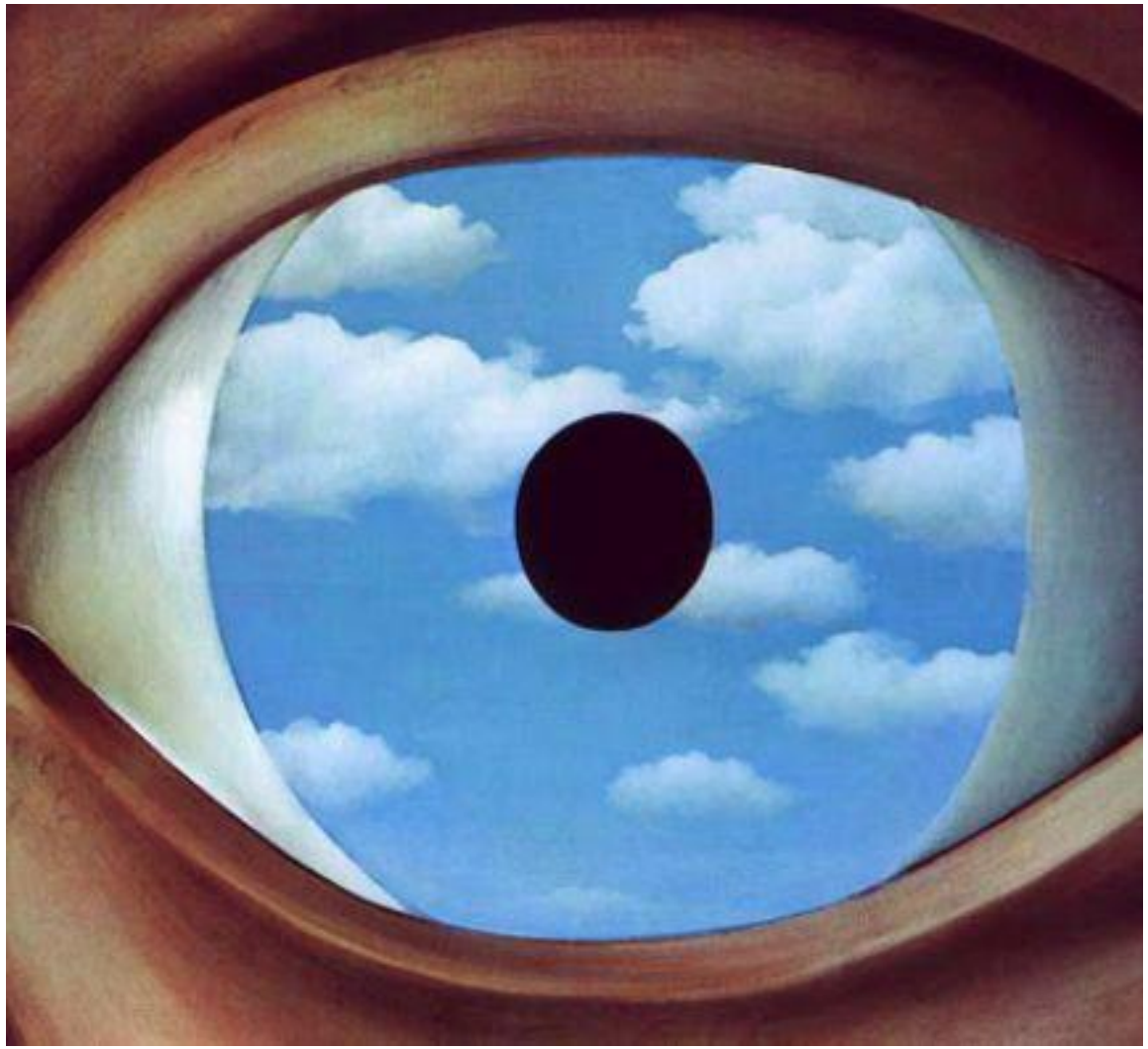
Different emotions in eyes





Van Gogh- eye from self portrait

Rene Magritte- “The False Mirror”



Year 8 Spring Term Knowledge Organiser

Rock 'n' Roll Music 1950's -

- ✓ Played in a 4/4 time signature
- ✓ Played at a fast tempo
- ✓ Uses the 12-bar blues structure for its chord progression
- ✓ Uses instruments such as the electric guitar, drums and bass
- ✓ Famous artists include Chuck Berry, Buddy Holly and Elvis Presley

Motown Music 1960's

- ✓ A strong, steady four-beat drum tempo.
- ✓ Frequent use of strings and horns.
- ✓ Pop vocal stylings with gospel-influenced chorals
- ✓ Complex chord changes and sophisticated melodies.
- ✓ Famous artists and bands include Stevie Wonder, the Jackson 5 and The Supremes

The Beatles

The Beatles were an English rock band from Liverpool, who became the most successful act in popular music history. They contributed to music, film, literature, art, and fashion, made continuous impact on popular culture and the lifestyle of several generations.

The band was formed in 1957 by John Lennon and a few school friends. Paul McCartney joined the group shortly afterwards along with a younger guitarist called George Harrison. The group performed under the name *'The Quarrymen'* and went through a number of different names before settling on *'The Beatles'*.

The band recruited drummer Pete Best, and bassist Stuart Sutcliffe completed the line-up as the group performed for a two-year spell in Hamburg, Germany. Sadly, Sutcliffe died of a brain haemorrhage in 1962, shortly before the band signed to EMI's record label *'Parlophone'*. Pete Best was replaced at that same time by Ringo Starr. The most famous line-up of the group comprised of John on vocals and guitar, Paul on vocals and bass guitar, George playing the lead guitar and Ringo on drums, under the guidance of manager, Brian Epstein.

'Love Me Do', the group's first single, reached number 17 in the charts, while the follow-up, *'Please Please Me'*, went to number 2. The band's debut album which was also entitled *'Please Please Me'* was recorded in one day and went straight to number 1 in the album chart. The group's first number 1 single was their third release *'From Me To You'* in 1963. The band's fourth single *'She Loves You'* sold over a million copies and became the biggest-selling record in the UK for 15 years. As their popularity spread, the riotous enthusiasm by screaming fans was dubbed *'Beatlemania'*. Before one concert in Plymouth, police had to use water hoses to control the frantic crowds.

The band conquered the US record market in 1964, thanks in a big way to their performance of single #5 *'I Want To Hold Your Hand'* on the popular *'Ed Sullivan Show'* which broadcast to a record 73 million people. The song went on to become their biggest-selling worldwide hit, shifting a staggering 12 million copies. In the same year, The Beatles released their first film *'A Hard Day's Night'* alongside a single and album of the same name. Another film followed a year later, which also shared its name with an album and single, *'Help!'*

Over the next two years, The Beatles toured non-stop and every album and single they released went to number 1 including the songs *'I Feel Fine'*, *'Day Tripper'* and *'Eleanor Rigby'* as well as the albums *'Beatles for Sale'* and *'Rubber Soul'*. Tired of the pressures of performing and eager to explore new styles of music, in 1966 the group played their final live gig at the *'Candlestick Park'* in San Francisco as they gave up touring in favour of spending more time developing their sound in the studio.

The group's sound changed dramatically as they recorded 3 classic albums over the next 3 years. 1966's *'Revolver'* marked the start of their new sound as the group experimented with reverse tape looping and several aspects of World Music. Their most famous album *'Sgt Pepper's Lonely Hearts Club Band'* which is one of the biggest selling albums of all time and is considered to be the band's masterpiece was released in 1967. This album incorporated a vast array of musical styles and influences, including the group's major interest in Indian music. Dozens of different and diverse instruments were included into their songs such as the Sitar, Tabla and Darbouka. It was in this same year that the timeless classic, *'Strawberry Fields Forever'* was recorded. This was arguably The Beatles' finest hour.

The third of these outstanding albums was the self-titled, double-album widely known as *'The White Album'* which followed in 1968. Throughout this time, the group composed more and more impressive and challenging songs and were ably assisted by their genius record producer George Martin who was responsible for the writing of the group's string and orchestral parts. In the same year, The Beatles founded their own record label *'Apple Records'* which was a creative outlet for the band and a selection of other artists.

The Beatles' third and final film *'Let it Be'* was recorded in 1969, alongside the album of the same name, however this album was not released until the following year, after the group's 'final' studio album *'Abbey Road'* was recorded. This album was named after the *'Abbey Road Recording Studio'* where the band recorded all of their albums.

Following unprecedented success, The Beatles split up in 1970. All four members went on to have successful solos careers, especially Paul McCartney and John Lennon, who also became a high-profile anti-war protestor. Tragically, Lennon was shot dead by a crazed 'fan' in 1980.

In total, The Beatles sold an estimated 1 billion records which is more than any other group or solo artist in history. Furthermore, they achieved 17 number one singles and 11 number one studio albums in just 8 active years between 1962 and 1970 which is also more than any other group. The Beatles are widely considered to be the most influential group in popular music history.

Suggested listening:-

- *'She Loves You'*
- *'Can't Buy Me Love'*
- *'I Feel Fine'*
- *'Strawberry Fields Forever'*
- *'Come Together'*

Can you guess The Beatles songs or band members from these pictograms?

1. 

Answer.....

2. 

Answer.....

3. 

Answer.....

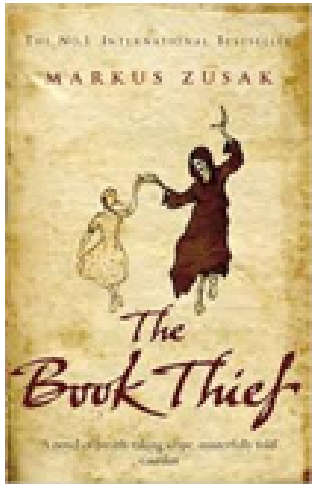
4. 

Answer.....

Vocabulary to learn

Conflict
Courage
Inspire
Relevant
Anxiety
Protagonist
Synonym
Emphasis
Omniscient narrator

Suggested Reading



Structure analysis - methods:

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
  - inside to outside (and vice versa)
  - focus
  - time
  - topic
  - setting/place
  - mood/atmosphere
  - description to dialogue (and vice versa)

Language analysis Checklist:

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings
- Aim higher: layers of meaning

Sentence Form	Definition	Example
Fragment sentence	*An incomplete idea.*	*Rolling thunder.*
Simple sentence	*Contains one complete idea in an independent clause.*	*The lightning flashed.*
Compound sentence	*Contains two independent clauses linked by a conjunction or a semi-colon.*	*The lightning flashed **and** the rain fell.* *The lightning flashed; the rain fell.*
Complex sentence	*Contains an independent clause and at least one dependent clause.*	*Despite the thunder and lightning, there was no rain.*

Evaluate — weigh up, form a judgement

This question asks you to **evaluate** the **extent** to which you agree with a given statement about a text. — how much

You will need to consider:

- The impressions (**opinions**) you have of the text in relation to the statement
- The methods the writer has used to create these impressions
- How the particular methods create these impressions

Words/phrases
Linguistic devices
Structural features
Sentence forms

Literary devices and word class

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass danced in the wind*
- Simile – as/like/as if – *he was like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds - *really rather raucous*
- Lists – to emphasise many reasons
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote **neatly**
- connotations of words – associations – night-time = mystery

The Book Thief

Task 1: How does the writer use language and structure to create an atmosphere in this extract? Use the red, green and blue boxes to help you to answer.

The last time I saw her was red. The sky was like soup, boiling and stirring. In some places, it was burned. There were black crumbs, and pepper, streaked across the redness.

Earlier, kids had been playing hopscotch there, on the street that looked like oil-stained pages. When I arrived, I could still hear the echoes. The feet tapping the road. The children – voices laughing, and the smiles like salt, but decaying fast.

Then, bombs.

This time, everything was too late.

The sirens. The cuckoo shrieks in the radio. All too late.

Within minutes, mounds of concrete and earth were stacked and piled. The streets were ruptured veins. Blood streamed until it was dried on the road, and the bodies were stuck there, like driftwood after the flood.

They were glued down, every last one of them. A packet of souls.

Was it fate? Misfortune?

Is that what glued them down like that?

Of course not.

Let's not be stupid.

It probably had more to do with the hurled bombs, thrown down by humans hiding in the clouds.

Yes, the sky was now a devastating, home-cooked red. The small German town had been flung apart one more time. Snowflakes of ash fell so beautifully you were tempted to stretch out your tongue to catch them, taste them. Only, they would have scorched your lips. They would have cooked your mouth.

Clearly, I see it.

I was just about to leave when I found her kneeling there.

A mountain range of rubble was written, designed, erected around her. She was clutching at a book.

Apart from everything else, the book thief wanted desperately to go back to the basement, to write, or to read through her story one last time. In hindsight, I see it so obviously on her face. She was dying for it – the safety of it, the home of it – but she could not move. Also, the basement didn't even exist anymore. It was part of the mangled landscape.

Task 2: A Student said: 'the destruction in this extract is described as impressive and beautiful'. To what extent do you agree? Write an essay to explain. Use the 'Evaluate' box to help you.

Evaluate — weigh up, form a judgement

This question asks you to **evaluate** the **extent** to which you agree with a given statement about a text. — how much

You will need to consider:

- The impressions (**opinions**) you have of the text in relation to the statement
- The methods the writer has used to create these impressions
- How the particular methods create these impressions

Words/phrases
Linguistic devices
Structural features
Sentence forms

Task 3. Spend 5 minutes planning and then create a piece of descriptive writing as suggested by the image.

Planning

- plan for at least simile, alliteration and varied vocabulary
- try to add metaphor, personification and sophisticated vocabulary

Aim Higher: plan to use a cyclical structure so your end revisits your beginning; plan to write from an unusual perspective, e.g. falling ash.

Individually self-assess your response:
- tick and label where you have used 'varied', 'sophisticated' and 'ambitious' vocabulary in your response;
- tick and label where you have used successful simile, alliteration, metaphor and personification;
- set a target for improvement.

YEAR 8 - DEVELOPING NUMBER...Fractions & Percentages

What do I need to be able to do?

By the end of this unit you should be able to:

- Convert between FDP less than and more than 100.
- Increase or decrease using multipliers.
- Express an amount as a percentage.
- Find percentage change.

Keywords

Percent: parts per 100 – written using the % symbol

Decimal: a number in our base 10 number system. Numbers to the right of the decimal place are called decimals.

Fraction: a fraction represents how many parts of a whole value you have.

Equivalent: of equal value.

Reduce: to make smaller in value.

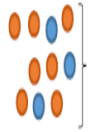
Growth: to increase/ to grow.

Integer: whole number, can be positive, negative or zero.

Invest: use money with the goal of it increasing in value over time (usually in a bank).

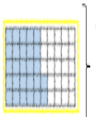
Express as a % - Non-calculator

Percent – per hundred



7 per every 10 are orange → $\frac{7}{10}$

This means that 70 per every 100 are orange → $\frac{70}{100}$ → 70%



27 per every 50 shaded → $\frac{27}{50}$

54 per every 100 shaded → $\frac{54}{100}$ → 54%

Denominator 100 | Equivalent fractions

Express as a % - Calculator

$\frac{13}{30}$ → □ → $\frac{13}{30}$ → × 100 → 43.3333...% → 43%

Can't use equivalence easily to find 'per hundred'

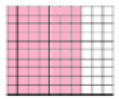
This the same as 13 ÷ 30

Decimal percentages are still a percentage

Convert FDP

R

$\frac{70}{100}$ → This also means 70 ÷ 100 → 70 out of 100 squares → 70 "hundredths" = 7 "tenths" = 0.7 → 70 hundredths = 70%



Using a calculator

□ → S⇌D → Convert to a decimal

This will give you the answer in the simplest form

× 100 converts to a percentage

Be careful of recurring decimals

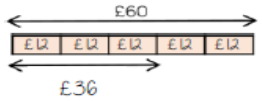
e.g. $\frac{1}{3}$ = 0.3333333 = $0.\dot{3}$

The dot above the 3

Fraction/ Percentage of amount

R

Find $\frac{3}{5}$ of £60



Remember $\frac{3}{5}$ = 60%

10% of £60 = £6

50% of £60 = £30

60% of £60 = £36

Remember $\frac{3}{5}$ = 60% = 0.6

60% of £60 = 0.6 × 60 = £36

Percentage change

100%

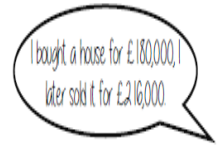
£200

£125

All values of change compare to the ORIGINAL value

Percentage loss

$\frac{75}{200} \times 100 = 37.5\%$



100%

£180,000

Percentage profit

Money made (profit value) → $\frac{36000}{180000} \times 100 = 20\%$

Difference in value / Original value × 100

Choose appropriate method

Have you represented the question in a bar model?

Can you use a calculator?

Convert FDP < and > 100%

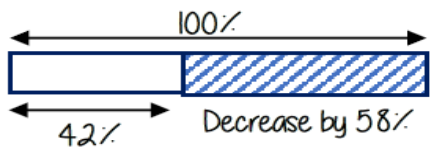
100 hundredths
10 tenths
100%

40 hundredths
4 tenths
40%

140 hundredths
14 tenths
140%

100% + 40%
1 + 0.40
= 1.40

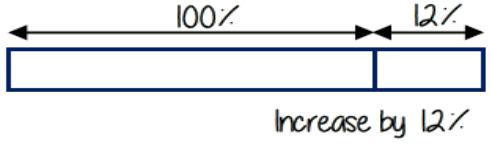
Percentage decrease: Multipliers



100% − 58% = 42%

100 − 0.58 = 0.42 ← Multiplier Less than 1

Percentage increase: Multipliers



100% + 12% = 112%

100 + 0.12 = 1.12 ← Multiplier More than 1

YEAR 8 - DEVELOPING NUMBER...

Standard Form

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Write numbers in standard form and as ordinary numbers
- Order numbers in standard form
- Add/ Subtract with standard from
- Multiply/ Divide with standard form
- Use a calculator with standard form

Keywords

Standard (index) Form: A system of writing very big or very small numbers
Commutative: an operation is commutative if changing the order does not change the result.
Base: The number that gets multiplied by a power
Power: The exponent – or the number that tells you how many times to use the number in multiplication
Exponent: The power – or the number that tells you how many times to use the number in multiplication
Indices: The power or the exponent
Negative: A value below zero

Multiplication and division

$\frac{1.5 \times 10^5}{0.3 \times 10^3}$ ← Division questions can look like this

For multiplication and division you can look at the values for A and the powers of 10 as two separate calculations

$(1.5 \times 10^5) \div (0.3 \times 10^3)$

$1.5 \div 0.3 \times 10^5 \div 10^3$

Revisit addition and subtraction laws for indices – they are needed for the calculations

$= 5 \times 10^2$

Addition law for indices	Subtraction law for indices
$a^m \times a^n = a^{m+n}$	$a^m \div a^n = a^{m-n}$

Positive powers of 10

1 billion = 1 000 000 000
$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^9$

Addition rule for indices $10^a \times 10^b = 10^{a+b}$

Subtraction rule for indices $10^a \div 10^b = 10^{a-b}$

Standard form with numbers > 1

Any number between 1 and less than 10 → $A \times 10^n$ ← Any integer

Example

3.2×10^4
$= 3.2 \times 10 \times 10 \times 10 \times 10$
$= 32000$

Non-example

0.8×10^4

$5.3 \times 10^{0.7}$

Negative powers of 10

	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
0.001	10^1	10^0	10^{-1}	10^{-2}	10^{-3}
$1 \times \frac{1}{1000}$	0	0	0	0	1
1×10^{-3}					

Any value to the power 0 always = 1

Negative powers do not indicate negative solutions

Numbers between 0 and 1

0.054
$= 5.4 \times 10^{-2}$

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
10^0	10^{-1}	10^{-2}	10^{-3}
0	0	5	4

A negative power does not mean a negative answer – it means a number closer to 0

Order numbers in standard form

10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}

6.4×10^{-2}	2.4×10^2	3.3×10^0	1.3×10^{-1}
0.064	240	1	0.13

Look at the power first will the number be = > or < than 1

Use a place value grid to compare the numbers for ordering

Using a calculator

$1.4 \times 10^5 \times 3.9 \times 10^3$

Use a calculator to work out this question to a suitable degree of accuracy

Input 1.4 and press [×10^x] Then press 5 (for the power)
Press [×]
Input 3.9 and press [×10^x] Then press 3 (for the power)
Press [=]

This gives you the solution

Click calculator for video tutorial

To put into standard form and a suitable degree of accuracy
Press [SHIFT] [SETUP] and then press 7 for sci mode.
Choose a degree of accuracy so in most cases press 2

Answer: 5.5×10^8

Mental calculations

$6.4 \times 10^2 \times 1000$ Not in Standard Form
$= 6.4 \times 10^2 \times 10^3$ Use addition for indices rule
$= 6.4 \times 10^5$

$(8 \times 10^5) \times 3$
$= 24 \times 10^5$ Not in Standard Form
$= 2.4 \times 10^1 \times 10^5$ Use addition for indices rule
$= 2.4 \times 10^6$

$(2 \times 10^3) \div 4$ Divide the values
$= (2 \div 4) \times 10^3$
$= 0.5 \times 10^3$

Remember the layout for standard form

Any number between 1 and less than 10 → $A \times 10^n$ ← Any integer

Addition and Subtraction

Tip: Convert into ordinary numbers first and back to standard from at the end

$6 \times 10^5 + 8 \times 10^5$

Method 1
$= 600000 + 800000$
$= 1400000$
$= 1.4 \times 10^5$

More robust method
Less room for misconceptions
Easier to do calculations with negative indices
Can use for different powers

Method 2
$= (6 + 8) \times 10^5$
$= 14 \times 10^5$ ← This is not the final answer
$= 1.4 \times 10^1 \times 10^5$
$= 1.4 \times 10^5$

Only works if the powers are the same

YEAR 8 - DEVELOPING NUMBER...

Number Sense

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Round numbers to powers of 10 and 1 sf
- Round numbers to any dp
- Estimate solutions
- Calculate using order of operations
- Calculate with money, units of measurement and time

Keywords

Significant: Place value of importance
Round: Making a number simpler but keeping its value close to what it was.
Decimal: Place holders after the decimal point.
Overestimate: Rounding up – gives a solution higher than the actual value
Underestimate: Rounding down – gives a solution lower than the actual value.
Metric: A system of measurement.
Balance: The amount of money in a bank account.
Deposit: Putting money into a bank account.

Round to powers of 10 and 1 sig figure

R

If the number is halfway between we "round up"

5495 to the nearest 1000

5475 to the nearest 100

5475 to the nearest 10

370 to 1 significant figure is 400
37 to 1 significant figure is 40
3.7 to 1 significant figure is 4
0.37 to 1 significant figure is 0.4
0.00037 to 1 significant figure is 0.0004

Round to the first non-zero number

Round to decimal places

2.46192 ← Focus on the numbers after the decimal point

"To 1dp" – to one number after the decimal
"To 2dp" – to two numbers after the decimal

2.46192 (to 1dp) - Is this closer to 2.4 or 2.5

2.46192 This shows the number is closer to 2.5

2.46192 (to 2dp) - Is this closer to 2.46 or 2.47

2.46192 This shows the number is closer to 2.46

Estimate the calculation

Round to 1 significant figure to estimate

$4.2 + 6.7 \approx 4 + 7 \approx 11$ This is an overestimate because the 6.7 was rounded up more

The equal sign changes to show it is an estimation

$21.4 \times 3.1 \approx 20 \times 3 \approx 60$ This is an underestimate because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths – it helps you identify calculation errors.

Order of operations

R

Brackets Operations in brackets are calculated first
Other operations e.g. powers, roots,
Multiplication/ Division
They are carried out in the order from left to right in the question
Addition/ Subtraction
They are carried out in the order from left to right in the question

Calculations with money

Debit - You have £0 or more in an account
Credit - You have less than £0 in an account

Money calculations are to 2dp

Using a calculator – ensure you are working in the correct units.
£1.30 + 50p = 130 + 50 (in pence)
= 1.30 + 0.50 (in pounds)

£1 = 100p

Metric measures of length

Kilo = 1000 x meter
Centi = $\frac{1}{100}$ x meter
Milli = $\frac{1}{1000}$ x meter

Units of weight/ capacity

Weight = g, kg, t
Capacity (volume of liquid) = ml, L

Time and the calendar

1 Year – the amount of time it takes Earth to go around the sun 365 (and a quarter) days
Leap Year – 366 days (every 4 years)

12 Months = one year = 52 weeks
31 days – Jan, March, May, July, Aug, Oct, Dec
30 days – April, June, Sept, Nov
28 days – Feb (29 leap year)

1 week – 7 days
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

1 day – 24 hours
1 hour - 60 minutes
1 minute – 60 seconds

Use a number line for time calculations!

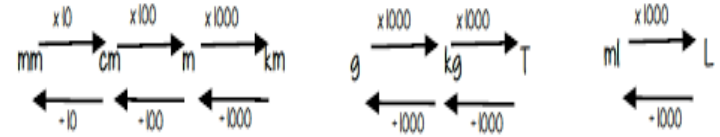
Analogue Clock

12-hour clock
- Use am (morning) and pm (afternoon)
- Only use hour times up to 12

Digital Clock (24-hour times)

24-hour clock
- 0-11 (morning hours)
- 12-23 (afternoon hours)

Units are important: Useful Conversions



Year 8 History: The Industrial Revolution

Key words	
Industrial revolution	A time of great change in Britain between 1750 to 1900
Population	The number of people living in a particular place
Invention	Something new which is created, can be an object or an idea
Economy	The system of how money is used within a particular country
Agriculture	The process of producing food, and fibres by farming of certain plants or raising animals
Urbanisation	The increase in the proportion of people living in towns and cities
Sanitation	The system that disposes of human waste
Mass production	The production of many products in one go e.g. textiles
Industry	The process of making products by using machines and factories

From 1750 Britain went through a process of change:

- Agriculture – New tools, fertilizers and harvesting techniques were introduced, resulting in increased productivity and agricultural prosperity.
- Industry – Factories sprung up all over the country creating more efficient ways to produce goods such as wool, cotton and coal. The increase in factories brought thousands of new jobs.
- Transport and communications – Thomas Telford built roads and canals in the 1700s and George Stephenson and Isambard Kingdom Brunel oversaw the 'Railway Mania' of the 1800s. There had previously been no very fast way of transporting goods and people around the country.
- Technology – There were many scientific discoveries and technological inventions that changed society and industry. Changes to sanitation and medical treatment such as the work of John Snow and Edward Jenner improved people's quality of life.

KEY INVENTIONS: The Steam Engine, Water Frame, Spinning Jenny and Locomotive

Factory working conditions

Long working hours: normal shifts were usually 12–14 hours a day, with extra time required during busy periods

Low wages: a typical wage for male workers was about 15 shillings (75p) a week, but women and children were paid much less, with children three shillings (15p). For this reason, employers preferred to employ women and children

Cruel discipline: Frequent "strapping" (hitting with a leather strap). Other punishments included nailing children's ears to the table, and dowsing them in water butts to keep them awake

Accidents: forcing children to crawl into dangerous, unguarded machinery led to many accidents and deaths

Health: The air was full of dust, which led to chest and lung diseases and loud noise made by machines damaged hearing.

Living conditions

Overcrowding: There were not enough houses in the cities

Disease: Typhus, typhoid, tuberculosis and cholera. low standard housing and poor-quality water supplies all helped spread disease.

Waste disposal: gutters were filled with litter. Human waste was discharged directly into sewers, into rivers

Poor quality housing: Built very close together so there was little light or fresh air inside. Houses did not have running water and people found it difficult to keep clean

Lack of fresh water: People could get water from streams, wells and stand pipes, but this water was often polluted

Factory owners such as Robert Owen argued improving conditions for workers would bring better profits. This influenced parliament to pass Factory Acts but many workers still lacked protection and a political voice

Year 8 History: Slavery

Key words	
Slavery	A relationship where one person has absolute power over another. They control their life, freedom and wealth
Trade Triangle	The name of the system for trading slaves across the world
Middle Passageway	The names used to describe the journey from Africa to America for slaves, it took up to 2 months
Plantation	A large farm that slaves worked on to produce cotton, tobacco and sugar
Abolition	Is the act of putting an end to something by law e.g. slavery
The Slavery Abolition Act 1833	The Act passed in Britain that abolished slavery.

During the 19th century Britain saw its **empire** grow significantly. It was regarded as a great source of wealth and status for Britain, however this came at a terrible human cost in the **Transatlantic Slave Trade.**
Slaves were traded across the world. Ships were loaded in England with goods such as guns, cloth and salt. This was taken to Africa and traded for slaves. The ships then went on a 2-month journey known as the **Middle Passageway** to the Caribbean. Here the slaves were sold to work in the **cotton plantations** and farms. The ship was then loaded with sugar and cotton, to be taken back to England to be sold for huge profits.

Slaves suffered through terrible conditions and many died during the journey. They were packed into the ship tightly and laid down for most of the journey. They were severely punished should they disobey orders. Slaves were chained up for the entire journey; diseases spread quickly. Many threw themselves overboard.

Who benefitted from the slave trade?

Plantation Owners – Grew 'cash' crops of sugar, tobacco, coffee, spices and cotton for sale back in Europe

African Tribal Leaders – Captured slaves through war between rivals over land. They would then trade their captures for weaponry and gunpowder to increase their power in their native land

British Business Men – Areas such as Liverpool and Bristol where the ships were built and goods imported got extremely rich

African Slaves – Some slaves worked in the plantation owner's house as butlers, cooks or housemaids. They were able to learn new skills, such as cooking and cleaning. They were often dressed in finer clothing and given a better diet than those that worked in the fields

Why was Slavery abolished?	**Abraham Lincoln** was against slavery. It was abolished on the 31st January 1865 but this did lead to a civil war in the USA	**Economics**: Sugar plantations closed as cheap sugar could be bought from Brazil and Cuba
Slave rebellions such as Nat Turner's Revolt	**Key Individuals**: Granville Sharp and Thomas Clarkson fought freedom cases in court. Olaudah Equiano sold his story. Press and publicity influenced attitudes against slavery	**Religion** – Christian groups, such as the Quakers, thought that slavery was a sin. William Wilberforce used his position as MP to campaign for change

Components of *Physical* Fitness

Aerobic Endurance – The ability of the cardiorespiratory system to work efficiently, supplying nutrients and oxygen to working muscles during sustained physical activity.

Muscular Endurance – The ability of the muscular system to work efficiently, where a muscle can continue contracting continuously against a light to moderate fixed resistance load.

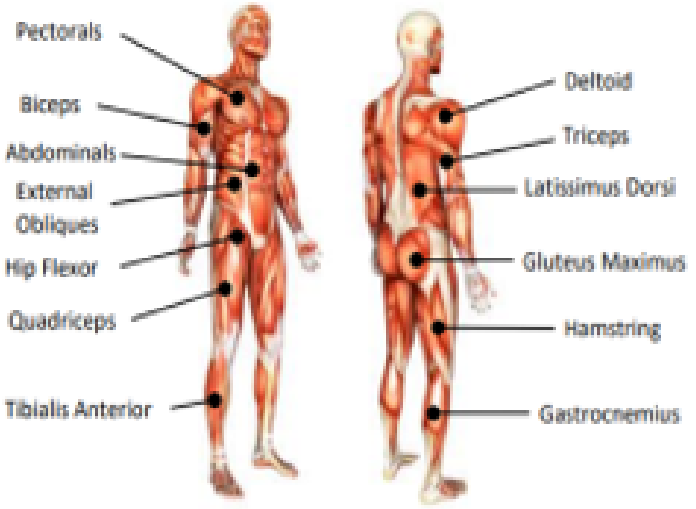
Speed – The ability to cover a distance quickly. There are 3 types of speed (Accelerative speed, Pure speed and Speed Endurance. This is calculated by Distance travelled divided by the time taken.

Muscular Strength – The maximum force, measured in kilograms (Kg) or newtons (N) that can be generated by a muscle or group of muscles.

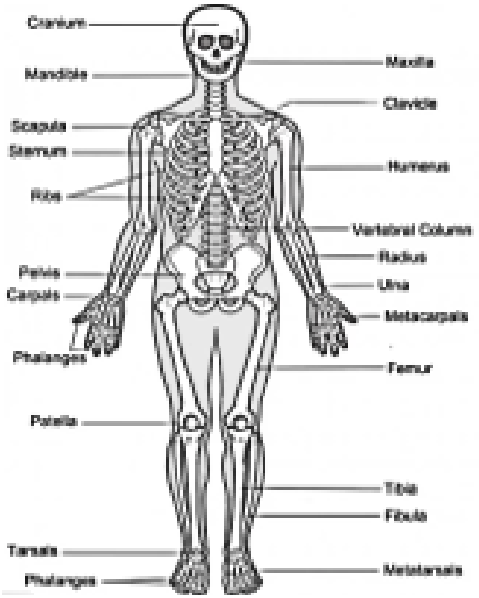
Flexibility – The adequate range of motion in all joints of the body and the ability to move a joint fluidly through its complete range of movement.

Body Composition – The ratio of fat to fat-free muscle mass. Sporting success is a combination of body composition and athletic ability.
https://www.youtube.com/watch?v=KycE8YJeaEI

Structure of the Muscular system



Structure of the Skeletal system



Components of *Skill-related* Fitness

Agility – The ability of a sports performer to quickly and precisely move or change direction without losing balance or time

Balance – The ability to maintain your centre of mass over a base of support. There are two forms of balance (static which is maintaining balance in a stationary position and Dynamic which is maintaining balance while in motion)

Co-ordination – The ability of the body to work together to move smoothly and accurately

Power - The ability to use strength and speed. It is the work done in a unit of time and is calculated in the following way Power- = Force (Kg) x Distance (m) / time (mins or seconds)

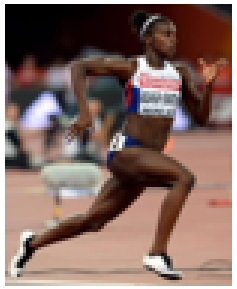
Reaction time – The time taken for a sports performer to respond to a stimulus, for example, the time taken for a sprinter to react to the starter gun.

https://www.youtube.com/watch?v=nJleyUBesI8

DID YOU KNOW…?

The recommended safe heart rate for an individual during exercise is called your **Maximum Heart Rate (HR max)**. To estimate your HR max you need the following formula: **MAXIMUM HEART RATE = 220 – Your AGE**. For example, if you are 20 Years old your HR max would be 220 - 20 = 200 beats per minute (bpm)

It is important to understand that different sports and sports performers require different aspects of fitness. Many sports need the same types of physical and skill related fitness, however some a unique and require specific components.



Dina Asher-Smith is a British and World Champion sprinter. She needs to have **speed, power and reaction time** to cover as much distance as possible, respond to the starter's pistol and move powerfully out of the blocks to get a good start. It is also important for sprinters to have excellent **muscular strength and muscular endurance**

Harry Kane will require similar components of fitness in order to be successful. **Speed and agility** will be essential to move quickly into position avoid defenders when he has possession of the ball. He will also need a very high-level of **aerobic endurance and muscular endurance.**

Can you think of other sports performers who would require different components of fitness?

Warming up and cooling down

Components of a warm up:

- Pulse raiser
- Stretches
- Skill related

5 reasons why we must warm-up

1.) Increases the temperature of the muscles, tendons and ligaments, which reduces the chances of injury.
2.) Increases heart rate and body temperature safely, which reduces chances of injury.
3.) Increases flexibility, which aids flexibility.
4.) Mentally prepares you for exercise, which can help improve performance.
5.) Increases oxygen delivery to the working muscles, which supports performance

6 reasons why we must cool down

1.) Gradually returns body temperature, breathing and heart rate back to their resting rate.
2.) To mentally unwind.
3.) To remove lactic acid, helping to prevent DOMS (Delayed Onset Muscle Soreness)
4.) To remove carbon dioxide and waste products.
5.) Improves flexibility.
6.) Avoids blood from gathering in muscles (pooling), which can cause dizziness

https://www.nhs.uk/live-well/exercise/how-to-warm-up-before-exercising/
https://www.nhs.uk/live-well/exercise/how-to-stretch-after-exercising/

Some key terminologies to learn and remember

Aerobic Endurance	**Muscular Endurance**	**Muscular Strength**	**Speed**	**Flexibility**	**Body Composition**
Pulse Raiser	**Stretches**	**Skill related**	**Gastrocnemius**	**Hamstring**	**Quadriceps**
Gluteus Maximus	**Pectorals**	**Biceps**	**Triceps**	**Pectorals**	**Oblique**
Tibia	**Fibula**	**Humerus**	**Femur**	**Radius**	**Ulna**
Scapula	**Clavicle**	**Vertebral Column**	**Cranium**	**Ribs**	**Sternum**
Agility	**Power**	**Balance**	**Co-ordination**	**Reaction Time**	**Maximum Heart Rate**

Principles of training

F – **Frequency – How often you train**

I – **Intensity – How hard you train**

T – **Time – How long you train**

T – **Type – How specific your training should be**

Think back to a sport you have played and consider the training you would need to complete in order to perform to your best. The FITT principle ensures you are working at a level that will challenge you. If you are not working hard enough, your body will not adapt and your fitness will not improve.

An example of the FITT principle in action….

Katarina Johnson-Thompson is a Team GB athlete and competes in the Heptathlon. Katarina has begun circuit training to improve her fitness to be able to compete in her seven different events. After 2 weeks, she feels her sessions should last longer. **Which principle is this focusing on?**

After one month, Katarina increases the number of sessions she takes part in. **The amount of sessions over a period of time is known as what?**

Katarina is now benefiting from her circuit training but is now looking to add more variation to her sessions. **Which principle would she be using if she wanted to change the training programme?**

One year before the next Olympic games, Katarina needs to step up her training programme. **Name the component of the FITT principle she would use to increase the difficulty of the training.**

Exercise intensity: The Borg scale (RPE – Rating of Perceived Exertion)

RPE	Intensity
6	No exertion
7	
8	
9	
10	
11	Light exertion
12	
13	Somewhat hard
14	
15	Hard (Heavy)
16	
17	Very Hard
18	
19	
20	Maximal Exertion

This scale measures how hard performers think they are working. It can also be used to measure Heart Rate and training zones.

(RPE x 10 = Heart Rate)

Additional Principles of training

S – **Specificity**

P – **Progressive Overload**

A – **Adaptability**

R – **Reversibility**

V – **Variation**

I – **Individual Needs**

R&R – **Rest and Recovery**

Methods of training

Circuit training – This involves a number of different activities that can be sport-specific or tailored to help improve certain levels of fitness.

Continuous training – This is training at a steady pace, moderate intensity to develop aerobic endurance. At least 30 minutes of steady running is an example of continuous training.

Fartlek training – This is a form of continuous training but the intensity is changed by running at different speeds over different terrains.

Interval training – This method requires periods of exercise followed by rest and recovery periods.

Plyometric training – This training develops sport-specific explosive power and strength.

Flexibility training – The method to develop flexibility at a joint. This is conduction using stretching. The three stretching categories are Static, Ballistic and Proprioceptive Neuromuscular Facilitation (PNF)

Speed training – Speed training can take many forms and can be sport specific. The three types of sprints are Acceleration, Interval and Hollow sprints.

Weight training – Weight training is a form of interval training and involves using reps and sets of reps.

Things to consider

Think about the methods of training and consider which sporting activities would require each method. Consider, football, badminton, rugby, netball, gymnastics and athletics. **When would you require each method of training?**

Now consider the principles of training. **Can you explain how one of the methods of training could use the FITT or additional principles of training?**

Your turn

Attempt to answer the following questions to help you understand.

1. Why is variation important in training for a sporting activity?
2. Give three examples of the circuit training sessions you could include to improve your muscular endurance
3. Which type of Olympic athlete is most likely to use continuous training?
4. Why would a 100m sprinter feel like they are at maximal exertion on the RPE scale?
5. Can you name 2 advantages and disadvantages of interval training?
6. What method of training would be best suited to a footballer and why?
7. Give an example of how a weight lifter could increase the intensity of their training.
8. How long would you need to exercise for to be taking part in continuous training?
9. Can you find at least one difference between hollow and acceleration sprints?
10. You are planning to train for a 10k fun run. Plan a training programme which includes methods of training and the FITT principle.

Can you challenge yourself to complete the beginner's push-up challenge?

Simply complete the amount of push-ups for each day, until you complete the challenge.

What did you feel when completing the challenge?

How has your muscular strength improved?

Some key terminologies to learn and remember

Frequency	**Intensity**	**Time**	**Type**	**Continuous training**	**Interval training**
Speed training	**Fartlek training**	**Weight training**	**Circuit training**	**Plyometric training**	**Specificity**
Progressive Overload	**Adaptation**	**Individual needs**	**Rest and Recovery**	**Reversibility**	**Variation**

Extension activities

Consider joining a club or team with in the Open Academy.
Join a club or team outside of the Open Academy and tell your teacher of your experiences.
Watch online clips of sporting skills and games for the sports you take part in at the Open Academy.
Create posters or informational material to promote your favourite sport and fitness activities.

German

Module 1: Ich liebe Ferien! (I love holidays!)

Here is the vocabulary you will need for Stimmt 2, Module 1.
Remember to listen to the German by copying and pasting the blue codes next to the speaker icons here. The full address is: https://www.activeteachonline.com/view

Früher und heute • Then and today	
Die Stadt ist/war ...	*The town is/was ...*
alt/modern	*old/modern*
klein/groß	*small/big*
schön/industriell	*beautiful/industrial*
historisch/touristisch	*historic/touristy*
laut/ruhig	*noisy/quiet*
Die Stadt hat/hatte ...	*The town has/had ...*
Es gibt/gab ...	*There is/was ...*
einen Strand	*a beach*
einen Marktplatz	*a town square*
einen Olympiapark	*an Olympic park*
einen Hafen	*a harbour*
eine Arena	*an arena*
eine Skatehalle	*a skate hall*
ein Einkaufszentrum	*a shopping centre*
ein Stadion	*a stadium*

vS9GME3o

In this Module you will learn how to:

- compare places in the past and now
- talk about what you did on holiday
- talk about how you travelled
- talk about the weather
- talk about holidays
- talk about problems on holiday

www.textivate.com
Username: openacademy
Password: surname123
Go to 'my resourses' to find your work.

Keep practising your German vocabulary on www.quizlet.com
• *Either*:
click on this link: https://quizlet.com/_8ievl8?x=1qqt&i=25q2il
• *Or*:
use your class link to go directly to your Quizlet class.

German

Was hast du gemacht?

• What did you do?

Ich habe viele Sachen gemacht.	*I did a lot of things.*
Ich habe/Wir haben ...	*I/We ...*
Musik gehört.	*listened to music.*
Volleyball gespielt.	*played volleyball.*
einen Bootsausflug gemacht.	*did a boat trip.*
viele Souvenirs gekauft.	*bought lots of souvenirs.*
viel Fisch gegessen.	*ate lots of fish.*
die Kirche gesehen.	*saw the church.*
ein Buch gelesen.	*read a book.*
Ich bin zu Hause geblieben.	*I stayed at home.*

swsCWRjP

Wohin bist du gefahren?

• Where did you travel to?

Ich bin ... gefahren.	*I travelled ...*
nach Deutschland	*to Germany*
nach Wien	*to Vienna*

n1lsGCzo

Wie bist du gefahren?

• How did you travel?

Ich bin ... gefahren.	*I travelled ...*
mit dem Auto	*by car*
mit dem Reisebus	*by coach*
mit dem Schiff	*by boat*
Ich bin geflogen.	*I flew.*
Ich bin zu Fuß gegangen.	*I walked.*

5IS5rvQ0

VEUcyfzI

Wo hast du gewohnt?

• Where did you stay?

Ich habe ... gewohnt.	*I stayed ...*
in einem Hotel	*in a hotel*
in einem Ferienhaus	*in a holiday house*
in einem Wohnwagen	*in a caravan*
in einer Jugendherberge	*in a youth hostel*
auf einem Campingplatz	*on a campsite*
bei Freunden	*with friends*

8CjrAPVZ

Mit wem bist du gefahren?

• Who did you travel with?

Ich bin ... gefahren.	*I travelled ...*
mit meiner Familie	*with my family*
mit Freunden	*with friends*

German

Was hast du noch gemacht? • What else did you do?

Ich bin ... gegangen.	*I went ...*
an den Strand	*to the beach*
in die Stadt	*into town*
windsurfen	*windsurfing*
kitesurfen	*kite surfing*
schwimmen	*swimming*
Ich bin ... gefahren.	*I went ...*
Wakeboard	*wakeboarding*
Snowboard	*snowboarding*
Ski	*skiing*
Banane	*banana boating*
Ich habe Snowtubing gemacht.	*I went snowtubing.*
Ich habe Eistennis gespielt.	*I played ice tennis.*

swsCWRjP

Wie ist/war das Wetter? • How is/was the weather?

Es ist/war ...	*It is/was ...*
sonnig	*sunny*
kalt	*cold*
heiß	*hot*
wolkig	*cloudy*
windig	*windy*
neblig	*foggy*
Es regnet.	*It is raining./It rains.*
Es schneit.	*It is snowing./It snows.*
Es donnert und blitzt.	*There is thunder and lightning.*

7TNSg1fL

Oft benutzte Wörter • High-frequency words

nur	*only*
dort	*there*
zu	*too*
nicht	*not*
gar nicht	*not at all*
sehr	*very*
ungefähr	*approximately*
viel	*a lot*
viele	*lots, many*

nbPzaz9A

Wann war das? • When was that?

in den Ferien	*in the holidays*
im Sommer/Winter	*in summer/winter*
letzten Sommer/Winter	*last summer/winter*
heute	*today*
gestern	*yesterday*
früher	*then, previously*

Strategie 1

Partnerarbeit

Two heads are often better than one when it comes to learning vocabulary. Working with someone else helps you to concentrate for longer and makes learning fun. Here are some activities to try with a partner:

- Play word association. Your partner says a word from Chapter 1 and you say a word that is related to it in some way. Be prepared to justify your thinking!
  - *Winter*
  - *Es schneit.*
- Play hangman or pictionary with the words from these ***Wörter*** pages.
- Beginnings and endings. Your partner says a word and your next word must start with the final letter of his/her word. Make the longest words you can!
  - *war*
  - *ruhig*
- Syllables. Say the first syllable of a word with two or more syllables. Your partner has to finish the word. Make the longest chain of words you can!
  - *win ...*
  - *... dig*
- Tandem testing. Take a section of words from these ***Wörter*** pages and test your partner. Begin by testing German into English and then say the English and ask for the German.

Look at page 132 to remind yourself of the five ***Strategien*** you learned in *Stimmt! 1*.

Read the Strategy Box for ideas on learning German vocabulary.

F8C6R2wT

Strategien

Strategie 1

How do you know if you really know a word? Ask yourself:

1 Do I know what it means when I see it?
2 Can I pronounce it?
3 Can I spell it correctly?
4 Can I use it in a sentence?

Look, Say, Cover, Write, Check

Use these five steps to learn the meaning, pronunciation and spelling of new words.

1 Look carefully at the word. Close your eyes and try to picture the word in your mind. This uses your visual memory.
2 Say the word out loud to yourself. This uses your auditory memory.
3 Cover the word – say it and 'see' the word in your mind.
4 Write the word out from memory.
5 Check your word against the original. Did you get it right? Combining seeing, listening and doing strategies makes memorising more effective.

Extra: If you find these steps easy, try to create sentences with the new words you learn.

Strategie 2

Cognates

You can use your knowledge of English to help you work out the meanings of German words. Cognates are words that look the same or similar in German and English, and they often mean the same too (but not always!). However, watch out for pronunciation because they usually sound slightly different. Here are some examples of cognates and near-cognates: *Hotel, Arena, Tourismus.*

Compound words

Long words can be difficult to remember, but they are usually made up of shorter ones, so it helps to break down these compound words into more manageable chunks – for example: *Liebes/komödie* (love/comedy = romantic comedy).

Strategie 3

Oft benutzte Wörter

High-frequency words, for example *gern, sehr, wenig*, are words that come up again and again, no matter what you are talking about. All of the *Wörter* pages have a list of these words, but there are many more.

Strategie 4

Memory room

To help you remember vocabulary, try associating it with places in a room, such as your bedroom. In your mind, place the words you want to remember in different parts of the room. For example, to learn breakfast items, you might put *Eier* by your computer, *Milch* on top of the wardrobe, etc. Then you look round the room and say *Eier* when you get to the computer and so on.

Mnemonics

If the spelling of a particular word just doesn't seem to stick, you could invent a mnemonic – a rhyme or saying that sticks easily in your mind. For example:

Snow
Can
Hurt
Noses
Even
If
Tiny

Strategie 5

Using your key phonics words

You learned the key sounds of German in *Stimmt! 1* (see page 133). One good strategy for remembering new words is to group them together with others with the same sound-spelling pattern. For example:

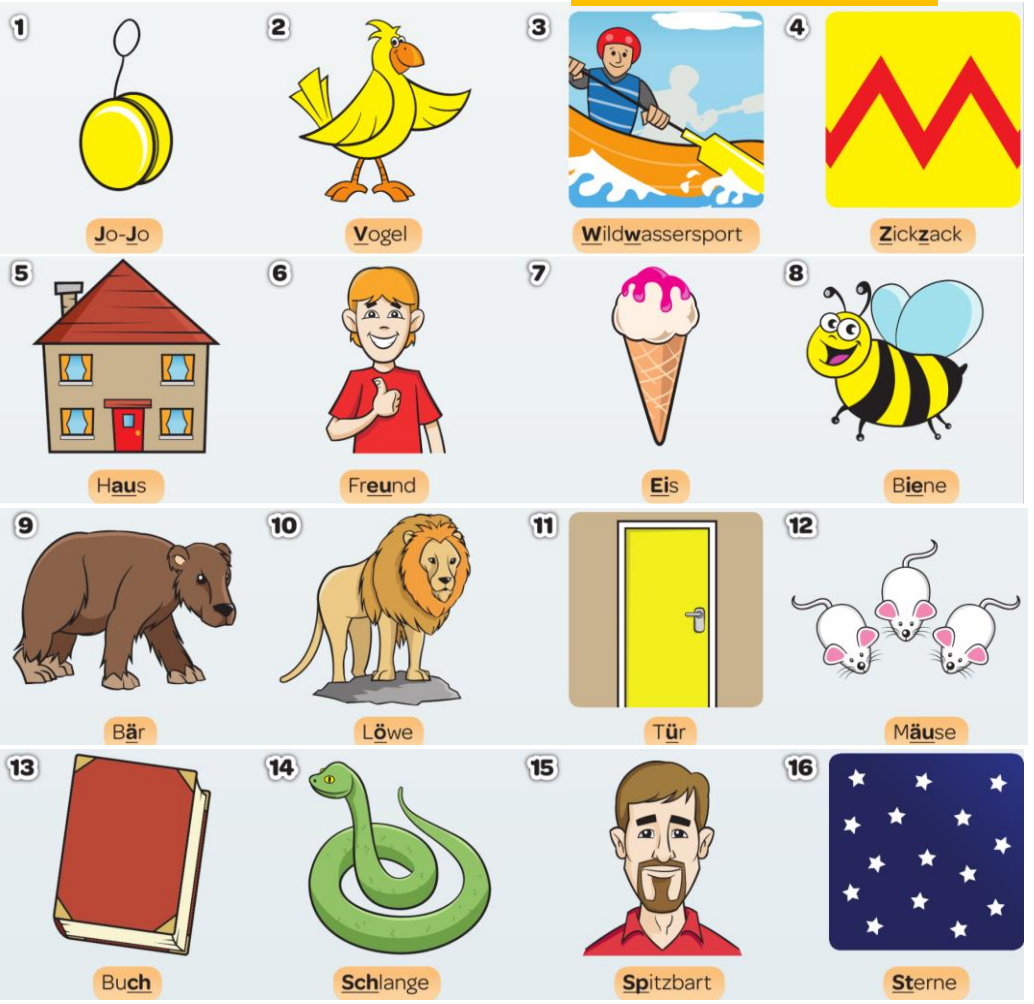
***J**ugendherberge* ➜ ***J**o-**J**o*
*W**o**hn**w**agen* ➜ ***W**ild**w**assersport*

Look back at the *Wörter* pages and add to your lists.

German key sounds

Sieh dir das Video auf ActiveTeach an. Hör zu und mach mit. (1–16)
Watch the video on ActiveTeach. Listen and join in.

Click on the links below to revise the sounds



ejJebkAW

NsDIUwgJ

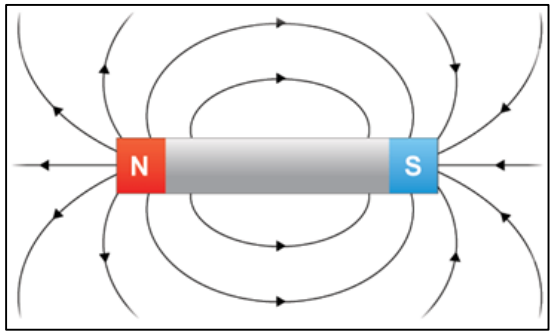
MAGNETS AND ELECTROMAGNETS

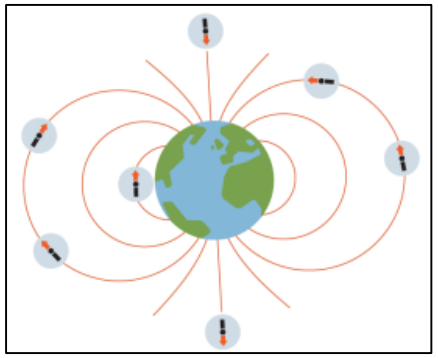
Bar Magnets
Bar magnets have two poles, a North pole (N) and a South pole (S), **opposite poles attract and like poles repel.**
Magnets create magnetic fields. These cannot be seen. They fill the space around a magnet where the magnetic forces work, where they can attract or repel magnetic materials.
Although we cannot see magnetic fields, we can detect them using iron filings. The tiny pieces of iron line up in a magnetic field. We can draw simple magnetic field line diagrams to represent this. In the diagram, note that:

- **field lines have arrows on them**
- **field lines come out of N and go into S**
- **field lines are more concentrated at the poles.**

The **magnetic field is strongest at the poles**, where the field lines are most concentrated.
The Earth has a magnetic field because the core rotates, it acts like a giant bar magnet.

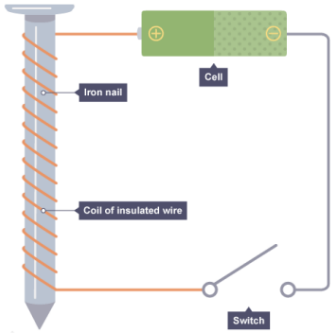
Key Terms	Definitions
Electromagnet	A magnet created by the flow of electricity in a wire
Magnetic Field	The area around a magnet, where the magnetic field acts

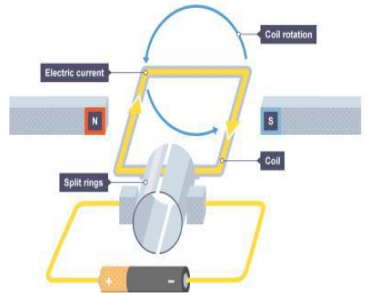




Electromagnets

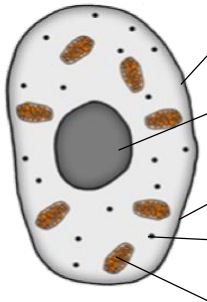
When an electric current flows through a wire, it creates a magnetic field, this can be used to make **an electromagnet**, by making the wire into a coil.
You can increase the strength of an electromagnet by doing three things:
1. Increase the number of coils
2. Increase the current
3. Add a soft iron core





The motor effect: A simple electric motor can be built using a coil of wire that is free to **rotate between two opposite** magnetic poles. When an electric current flows through the coil, the coil experiences a force and moves. This is called the motor effect.

Microscopes and cells

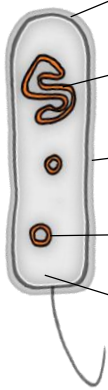


animal cell

cytoplasm	*site of chemical reactions in the cell*	gel like substance containing enzymes to catalyse the reactions
nucleus	*contains genetic material*	controls the activities of the cell and codes fro proteins
cell membrane	*semi permeable*	controls the movement of substances in and out of the cell
ribosome	*site of protein synthesis*	Where proteins are made
mitochondrion	*site of respiration*	where energy is released for the cell to function

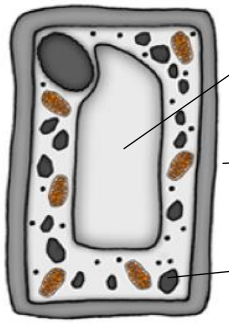
Eukaryotes complex organisms with nucleated cells

Prokaryotes – simple unicellular organisms with DNA present but not in a nucleus



cell membrane	*site of chemical reactions in the cell*	gel like substance containing enzymes to catalyse the reactions
bacterial DNA	*not in nucleus floats in the cytoplasm*	controls the function of the cell
cell wall	*NOT made of cellulose*	supports and strengthens the cell
plasmid	*small rings of DNA*	contain additional genes
cytoplasm	*semi permeable*	controls the movement of substances in and out of the cell

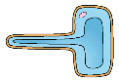
Bacterial cells are much smaller than plant and animal cells



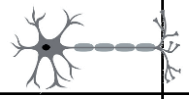
plant cell

permanent vacuole	*contains cell sap*	keeps cell turgid, contains sugars and salts in solution
cell wall	*made of cellulose*	supports and strengthens the cell
chloroplast	*site of photosynthesis*	contains chlorophyll, absorbs light energy

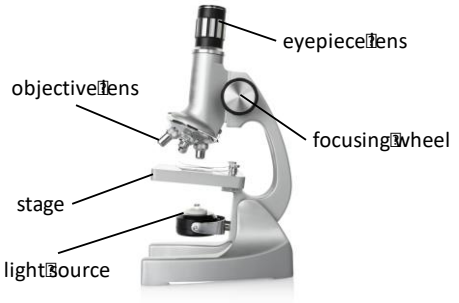
Honey I shrunk the kids (cells)

root hair		*absorb water and minerals from soil*	hair like projections to increase the surface area
xylem		*carry water and minerals*	**TRANSPIRATION** – dead cells cell walls toughened by lignin flows in one direction
phloem		*carry glucose*	**TRANSLOCATION** – living cells cells have end plates with holes flows in both directions

specialised plant cells

nerve		*carry electrical signals*	long branched connections and insulating sheath
sperm		*fertilise an egg*	streamlined with a long tail acrosome containing enzymes large number of mitochondria
muscle		*contract to allow movement*	contains a large number of mitochondria long

specialised animal cells



Feature	Light (optical) microscope	Electron microscope
Radiation used	Light rays	Electron beams
Max magnification	~ 1500 times	~ 2 000 000 times
Resolution	200nm	0.2nm
Size of microscope	Small and portable	Very large and not portable
Cost	~£100 for a school one	Several £100,000 to £1 million plus

magnification M = size of image / real size of the object

POND LIFE (COMMUNITIES AND DISTRIBUTION OF SPECIES

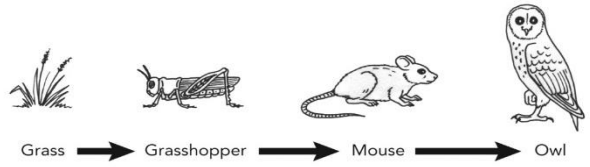
Environment	The conditions surrounding an organism; abiotic and biotic.
Habitat	Place where organisms live e.g. woodland, lake.
Population	Individuals of a species living in a habitat.
Community	Populations of different species living in a habitat.

Plants	*Animals*	*Extremophiles*
Cactus in dry, hot desert	Polar bear in extreme cold artic	Deep sea vent bacteria
No leaves to reduce water loss, wide deep roots for absorbing water.	Hollow hairs to trap layer of heat. Thick layer of fat for insulation.	Populations form in thick layers to protect outer layers from extreme heat of vent.

Organisms adaptations enable them to survive in conditions where they normally live.

Feeding relationships in a community

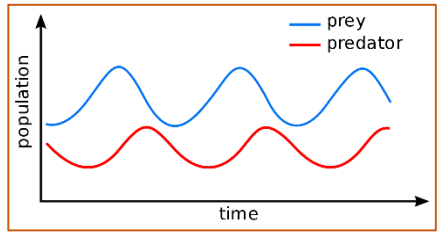
Producer	Primary consumer	Secondary consumer	Tertiary consumer



All food chains begin with a producer e.g. grass that is usually a green plant or photosynthetic algae.

Consumers that kill and eat other animals are predators and those eaten are prey.

In a stable community the numbers of predators and prey rise and fall in cycles.



Non-living (ABIOTIC) factors that affect a community	*Living factors (BIOTIC) that affect a community*
Living intensity.	Availability of food.
Temperature.	
Moisture levels.	New predators arriving.
Soil pH, mineral content.	
Wind intensity and direction.	New pathogens.
Carbon dioxide levels for a plant.	One species outcompeting so numbers are no longer sufficient to breed
Oxygen levels for aquatic organisms.	

Competition	Plants in a community or habitat compete with each other for light, space, water and mineral ions.
	Animals compete with each other for food, mates and territory.
Interdependence	Species depend on each other for food, shelter, pollination, seed dispersal etc. Removing a species can affect the whole community

MORE METAL MORE MONEY

(CHEMICAL CHANGES)

Increasing reactivity

Potassium	Please
Sodium	Send
Calcium	Charlie's
Magnesium	Monkeys
Aluminium	And
CARBON	**CRAZY!**
Zinc	Zebras
Iron	In
Lead	Lead
Copper	Cages
Silver	Securely
Gold	Guarded

The reactivity of a metal determines the method of extraction. Metals **above** carbon must be **extracted** using **electrolysis**. Metals **below** carbon can be extracted by **reduction** using **carbon**, coke, or charcoal. **Gold** and **silver** do not need to be extracted. They occur **native** (naturally).

	Reactions with water	Reactions with acid
Group 1 metals	*Reactions get more vigorous as you go down the group*	*Reactions get more vigorous as you go down the group*
Group 2 metals	*Do not react with water*	*Observable reactions include fizzing and temperature increases*
Zinc, iron and copper	*Do not react with water*	*Zinc and iron react slowly with acid. Copper does not react with acid.*

Displacement reactions

Displacement reactions involve a metal and a compound of a different metal. In a displacement reaction:
a more reactive metal will <u>displace</u> a less reactive metal from its compounds
Displacement reactions are easily seen when a salt of the less reactive metal is in the solution. During the reaction:
the more reactive metal gradually disappears as it forms a solution
the less reactive metal coats the surface of the more reactive metal

You can investigate the reactivity of metals using displacement reactions. The table shows the results from a series of experiments involving four metals and solutions of their salts. A tick shows where there is a visible reaction and a cross shows where there is no visible reaction.

	Magnesium	Zinc	Iron	Copper
Magnesium sulfate	✗	✗	✗	✗
Zinc sulfate	✓	✗	✗	✗
Iron sulfate	✓	✓	✗	✗
Copper sulfate	✓	✓	✓	✗
Reactions seen	3	2	1	0

MORE METAL MORE MONEY

(CHEMICAL CHANGES)

The reactivity of a metal determines the method of extraction. Metals **above** carbon must be **extracted** using **electrolysis.** Metals **below** carbon can be extracted by **reduction** using **carbon,** coke, or charcoal. **Gold** and **silver** do not need to be extracted. They occur **native** (naturally).

During electrolysis: In a solution or molten compound when electricity is passed through it **positive metal** ions move towards the **negative electrode. Negative non metal** ions move towards the **positive electrode.**

Low Grade Copper Ores: Small amount of copper.
1. Phytomining: Plants absorb **copper** ions from low-grade ore. **Plants** are **burned.** Copper ions dissolved by adding **acid. Use displacement** or **electrolysis** to extract pure Copper.
2. Bioleaching: Bacteria feed on low-grade ore Produce a **waste product** that contains **copper** ions
Use **displacement** or **electrolysis** to extract pure copper.

A **metal compound** within a **rock** is an **ore.** The metal is **often combined** with **oxygen.** Ores are **mined** and then **purified.**

Copper-rich Ores: Large amounts of copper.
1. Smelting: 80% of copper is produced this way. **Heat copper ore in a furnace with air.**
Then use electrolysis to purify the copper. **Expensive** as needs lots of heat and power.
2. Copper Sulphate: Add **sulphuric acid** to a copper ore. Produces copper sulphate. Extract copper using electrolysis or displacement.

Knowledge Organiser: Year 8 January – June Design and make an automaton

Automata

An automaton generally refers to a moving, mechanical device, usually constructed to look like a human or animal figure. Automatons are built to give the illusion of acting as if by their own power, despite comprising only of mechanical systems. Sometimes referred to as Mechanical Toys or Kinetic Art, they are marvellous small machines that utilize most of the mechanical processes which can be found in almost every modern machine employing cams, gears, ratchets and cranks.

Mechanisms

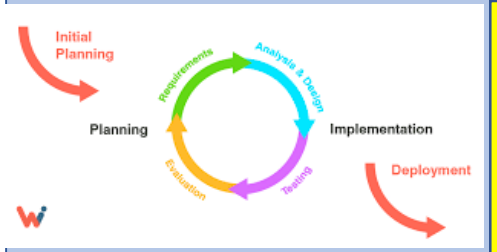
Mechanical devices all have an input motion, which transforms into force to make an output motion. The four types of motion are:

Linear **rotary** **reciprocating** **oscillating**

Designers and makers are often influenced by past or current designers and art movements They can start with a design context which leads to a design brief. The context is explored and a design brief is written. The designer needs to carry out research to help them to design and make a successful product.

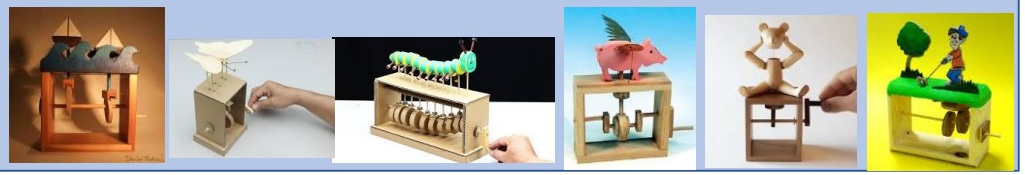
The Iterative Design Process

This is the process of prototyping, testing and refining your product, acting on feedback from your primary users and stakeholders.



Questions to think about when designing and making?
Who is going to use it? When and where will it be used?
What material(s) could I use to make it? How can I make it so that it is as environmentally friendly as possible? What impact will it have on the users life? Can it be recycled easily? How long will it last?

These are examples of mechanical toys.



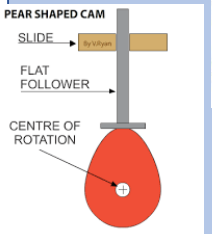
Pine and MDF

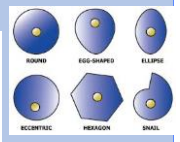
Wood comes in 3 categories: soft wood, hard wood and manufactured wood. They have different properties and are used for many things.

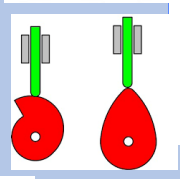
Measuring, marking out and cutting wood and plastic

- Use a ruler to measure accurately, use a set square to mark accurate angles, a ruler to draw a straight line and use a tenon saw, coping saw or fret saw to cut wood. Use a junior hacksaw to cut acrylic.
- MEASURE TWICE – CUT ONCE! Why do we say this in D&T?
- Use wood PVA glue to join wood. Use epoxy resin to join wood to plastic.

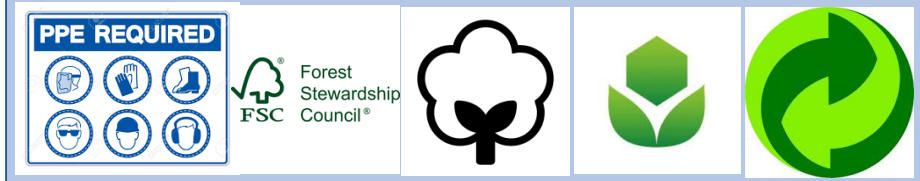
You will be using cams and gears to add the movement to your toy







When you are in the Academy workshop it is so important you are safe. We will show you what tools to use and how to use them safely. You must listen to and respond first time to all instructions.
Can you think of any more workshop rules? Why is it so important to follow these?
What does COSHH stand for and why is it important in D&T?



What PPE did you wear in the Academy workshop and why?
Can you name and explain the logos on the left?

Seasonal Produce and Air Miles

Seasonal produce

Seasonality of **food** refers to the times of year when the harvest or the flavour of a given type **food** is at its peak. This is usually the time when the item is the cheapest and the freshest on the market.
The **food's** peak harvest time usually coincides with when its flavour is at its best.

Advantages of local, seasonal foods foods

- Often cheaper as it is not imported and there is a larger quantity of the food available
- Fresher as it has taken less time to travel and less storage time.
- High in nutrients – fruit and vegetables lose nutrients over time after being picked. With less travel and storage time, they lose less nutrients.
- Tastes better as it is fresher and higher in nutrients.

Disadvantages of local, seasonal foods

- There is a smaller range of foods available
- Not importing foods means not supporting farmers in developing countries.

Examples of UK grown produce

Autumn	Winter	Spring	Summer
Apples Mushrooms Beetroot Pears Potatoes Pumpkin Garlic	Cauliflower Sprouts Suedes Sweet potato Broccoli Oranges Cabbage	Strawberry Carrot Lettuce Leeks Asparagus Peas Spring onion	Cucumber Aubergine Tomato Raspberry Courgette Onion Corn on the cob

Food miles

- If we're not eating fresh, seasonal food grown in the UK, the food has travelled from abroad to reach us.
- Food miles are clocked up by the fresh fruit and vegetables arriving by plane from across the globe.
- Then the fruit gets loaded in to lorries and driven across various parts of the country to supermarkets
- Then once on a shelf the products are then bought by people who then drive it back home.

Food miles are the measure of the distance a food travels from field to plate. This travel adds substantially to the Carbon Dioxide emissions that are contributing to climate change. The amount of food being flown into the UK doubled in the 1990s and is predicted to rise further each year. Consumers are also directly responsible for increased food miles. We now travel further for our shopping and use the car more often to do it.

Advantages of importing foods

- A wide range of foods are available in our shops all year round e.g. strawberries at Christmas.
- Less energy is used growing certain crops in poorer countries as there is no need for heating glasshouses etc. (less damage to the environment)

Disadvantages of importing foods

- Its harder to monitor food production standard and conditions for workers in countries far away.
- Taxes on imported foods means farmers in developing countries don't always receive a fair price for their foods.
- Food that has travelled a long distance is less fresh by the time it reaches the shelves
- People do not buy local produce as much so local UK farmers don't make as much money
- Increased road traffic as more food is being transported around the holiday
- There is increased used of fuel for the road transport plus the carbon dioxide emissions related
- The amount of food flown into the UK increases each year which means the UK is not self-sufficient
- Pressure to expand food production has led to the destruction of environments in some poorer countries
- Over 60% of household waste is a result of food packaging
- Fresh spinach looses over 90% of its vitamin C in the first 24 hours of harvest

Examples of imported foods

Pineapple, mango, tomatoes, celery, potatoes, bananas, nuts, sugar, chicken, lamb, beef, fish, oil, cocoa beans, grapes, tea, coffee, rice, soya bean, herbs, spices, olives, capers, avocado, cauliflower, broccoli

Year 8 Knowledge Organiser: Globalisation

Topics covered

- ✓ What is Globalisation?
- ✓ Benefits of Globalisation
- ✓ Drawbacks of Globalisation
- ✓ What are TNC's?
- ✓ TNC's – good or bad?
- ✓ What is the chain of production?
- ✓ What are 'sweatshops'?
- ✓ Measuring wealth/poverty
- ✓ Ways to reduce poverty
- ✓ Fairtrade

Key Ideas:

1. I can define the meaning of Globalisation
2. I can describe the advantages and disadvantages of Globalisation
3. I can explain how TNC's operate and exploitation through the chain of production.
4. I can measure poverty and suggest ways to reduce poverty

Skills

- ❑ To research amazing facts using ICT
- ❑ To understand different opinions and viewpoints
- ❑ To calculate levels of development using Atlas data
- ❑ To create graphs of different types (line, bar, pie)
- ❑ To write a detailed piece of extended writing

Places and Environments

- ❖ Asia
- ❖ Bangladesh
- ❖ Vietnam
- ❖ Indonesia
- ❖ Cameroon
- ❖ Norwich

Key Terms Used in this Unit

- ❑ Communications
- ❑ Trade
- ❑ Migration
- ❑ Trans-National Corporations
- ❑ Multi-National Corporations
- ❑ Inward Investment
- ❑ Head office
- ❑ Chain of production
- ❑ Consumers
- ❑ Child Labour
- ❑ Exploitation
- ❑ Sweatshops
- ❑ Gross Domestic Product
- ❑ Quality of Life
- ❑ Charity
- ❑ Fair Trade Premium
- ❑ WTO

Kitchen cupboard 'globalisation'

In todays world we are all very much connected to far away places (nothing highlighted this more than the Covid epidemic).

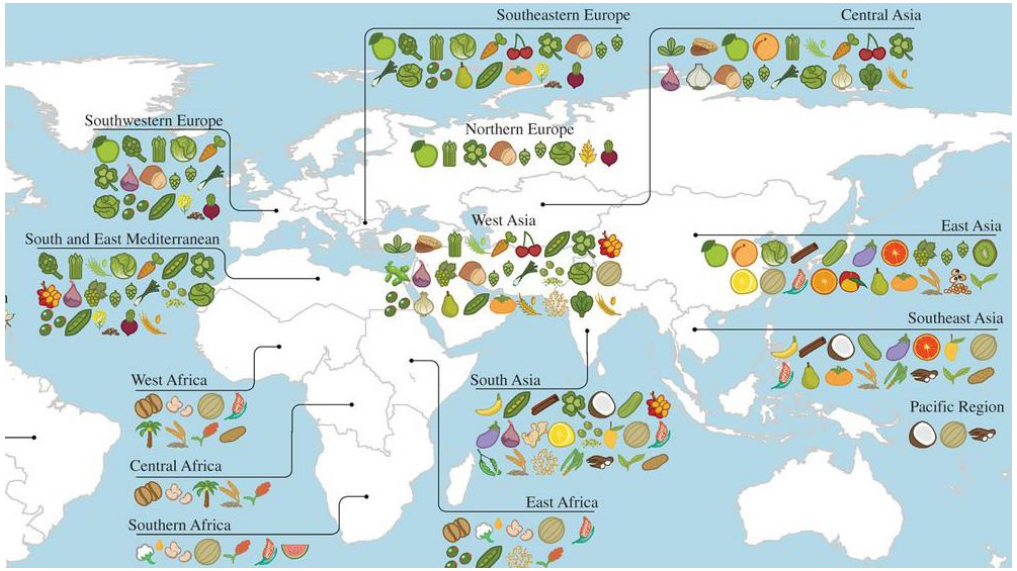
Despite the restrictions on travel, the transport of gooods Remains a top priority.

Today many of our supermarkets whether there is a global pandemic or not will contain foods from all over the world

Look in your food cupboards for the following:
Fruits and vegetables, rice, pasta, breads, sauces, herbs and spices. You may even discover oils and wines. Breakfast cereals may contain wheat or corn. Alcohol barley and wines grapes.

Where did these items come from? You could guess as to which parts of the world they were grown in or you could check the labels yourself.

Are there any places that we do not rely upon for food and drinks? Which parts of the world are our supermarkets most reliant on?



Knowledge Organiser: Year 8 Spring Term 1 Part 2 Textual Programming—Micorosoft Small Basic

Summary

Sometimes we need computers to remember the information we give it and that it calculates during programs. A **variable** can be thought of as a box that the computer can use to store a value. The value held in that box can change or 'vary'.

A program can use as many variables as it needs it to. **Variables are a key element of programming.** They are used for calculations, for storing values for later use, in decisions and in iteration. It is important to use meaningful names for variables.

Programs require data to be **input**. This data is used (**processed**) by the program, and data (or information) is **output** as a result. Once data has been processed, programs often need to output the data they have

Key Vocabulary

Algorithm	A sequence of logical instructions for carrying out a task. In computing, algorithms are needed to design computer programs.
Flowchart	A diagram that shows a process, made up of boxes representing steps, decision, inputs and outputs.
Instruction	A single action that can be performed by a computer processor.
Programming	The process of writing computer software.
Programming language	A language used by a programmer to write a piece of software. There are many programming languages.
Pseudocode	A method of writing up a set of instructions for a computer program using plain English. This is a good way of planning a program before coding.
Variable	In a computer program, this is a memory location where values are stored.

Microsoft Small Basic

Variable

Computer programs use variables to

Variables could be used to store the score in a game, the number of cars in a car park or the cost of items on a till. They work in a similar way to algebra, where a letter in your code can stand for a number.

```
TextWindow.Write("Enter your Name: ")
name = TextWindow.Read()
TextWindow.Write("Hello " + name + ".  ")
TextWindow.WriteLine("How are you doing " + name + "?")
```

Sequencing

Sequencing is the specific order in which instructions are performed in an algorithm.

Algorithms consist of instructions that are carried out

```
GraphicsWindow.Width = 200
GraphicsWindow.Height = 200
GraphicsWindow.PenColor = "Green"
GraphicsWindow.DrawLine(10, 10, 100, 100)
GraphicsWindow.PenColor = "Gold"
GraphicsWindow.DrawLine(10, 100, 100, 10)
```

Selection

Selection is a decision or question.

At some point, a program may need to ask a question because it has reached a step where one or more options are available. Depending on the answer given, the program will follow a certain step and ignore the others.

```
If (Clock.Hour < 12) Then
  TextWindow.WriteLine("Good Morning World")
EndIf
If (Clock.Hour >= 12) Then
  TextWindow.WriteLine("Good Evening World")
EndIf
```

Iteration

Iteration is the process of repeating steps.

Iteration allows us to simplify our algorithm by stating that we will repeat certain steps until told otherwise. This makes designing algorithms quicker and simpler because they don't have to include lots of unnecessary steps.

```
For i = 1 To 24
  TextWindow.WriteLine(i)
EndFor
```

Algorithms

Algorithms can be represented as **pseudocode** or a **flowchart**, and programming is the translation of these into a computer program.

Pseudocode

```
IF GameWon THEN
  .. Instructions here ..
  IF Score > HighScore THEN
    .. Instructions here ..
  ENDIF
  .. Instructions here ..
ENDIF
```

Flowchart

http://bit.ly/33WS6NC

BBC Bitesize

Year 8 RS: Human Rights and Social Justice

Key Words			
Aid	Charitable assistance given in times of crisis such as food, money or water	People Trafficking	The illegal movement of people, usually for the purpose of forced labour
Discrimination	Actions which stem from a prejudice against someone	Positive Discrimination	Providing favourable treatment to groups who are normally discriminated against
Equality	The belief that all humans are of equal value and status	Poverty	The state of being without enough money to live a comfortable life
Exploitation	The misuse of power or money to get others to do things for little reward	Prejudice	Beliefs held about somebody based on their status or identity
Freedom of Religion	The freedom to practice your religion without persecution	Social Justice	Fighting to ensure all people in society are treated fairly
Human Rights	Fundamental rights to which all humans should have access	Tithe	A proportion of annual income paid directly to a church

Social Justice

Human Rights

Human Rights are the fundamental rights to which all humans should have access.

They were adopted by the UN in 1948 as part of the **Universal Declaration of Human Rights**.

They include the right to **life**, to **security**, to **privacy**, to an **education** and to a **fair trial**.

Along with these humans also have **responsibilities** to act within the law and not infringe on others' rights.

We also have the Human Rights Act (1998) in the UK

Prejudice and Discrimination

Christians have a fundamental belief in **equality**, that all people are equal in front of God.

"You are one in Christ Jesus" Galatians 3:28

Prejudice means holding views on someone based on their identity or status e.g. gender or race.

Discrimination means acting on those views and treating people differently.

Christianity has historically held a **prejudice against women**, but this is eroding recently with women now holding high positions in the CoE.

In the Catholic Church, women can't 'teach or have authority over man.' (1 Timothy 2:11-14)

The Qur'an states that women have rights, but men have the final word, so a greater status. (Qur'an 2:229)

Religious Freedom + Racism

Religious Freedom

Christians believe people of all religions should have the freedom to practice their faith, this is **freedom of religion.**

In some parts of the world this freedom is threatened by oppressive governments. In some parts of the Middle East Christians have faced **persecution** for expressing their faith.

Dignitas Personae (gives doctrinal guidance) states that the 'human person has a right to religious freedom.'

Although, in Islam converting to another religion from Islam is and apostasy and carries the death penalty. Religions such as Hinduism who worship several Gods is seen as blasphemy.

Racism

Christians **oppose** racial prejudice and discrimination.

Racism is illegal in the UK under the 1976 Race Relations Act.

Dr Martin Luther King Jr. became the leader of the Civil Rights Movement which fought for equality for black people in the US, he was a committed Christian and inspired by the Bible and Jesus.

'All human beings are born free and equal…should act in a spirit of brotherhood…everyone is entitled to the rights and freedom.' (Universal Declaration of Human Rights)

Christianity- God made all people free and equal. All were made in the image of God. (Genesis 1:27)

Islam- speaks of 'brotherhood' and all being equal. For example, when a Muslim goes on pilgrimage, they change into an Ihram (a plain white cloth) to show they are all equal before Allah. They also see Jews and Christians as 'people of the book.'

Year 8 RS: Human Rights and Social Justice

Wealth and Poverty

Although Christians do not ordinarily have a problem with people earning money and becoming wealthy, they are wary of the dangers attached to this such as **greed** and **selfishness**.

The Bible famously states that *"the love of money is a root of all sorts of evil" 1 Timothy 6:10*

Jesus taught that **you cannot serve both God and money** and that it is not possible for a rich person to enter heaven if they had not given away their wealth to those in need.

Christians seek to help those who live in **poverty** without enough money to meet their basic needs.

People may find themselves in poverty because of debt, exploitation, a corrupt government or a natural disaster. Many people in the UK are in poverty due to unemployment, illness or disability.

If anyone has material possessions and sees his brother in need, how can the love of God be in him? (1 John 3:17)

If a brother has no clothes or food, what good is it to wish him well without caring for his physical needs? (James 2:15)

Islam has a very similar view and it is compulsory for Muslims to give 2.5% of their disposable earnings to charity (Zakat). Riches are sweet, a source of blessing to those who acquire them by the way- but those who seek it out of greed are like people who eat but are never full. (Hadith)

He who eats and drinks whilst his brother goes hungry is not one of us. (Hadith)

For a debtor, give him time to pay- but if you let it go out of charity this is the best thing to do. (Qur'an)

Exploitation

Exploitation means misusing money or power in order to take advantage of people.

This might involve paying them an unfair amount for their work. In the UK the **National Minimum Wage Act** of 1998 set the lowest amount an employer can pay someone making it illegal to exploit people on extremely low pay.

People trafficking is another form of exploitation where people are taken from poverty and forced to work away from home for little or no pay. This can be found in the building trade and in the sex industry.

Christians work to oppose people trafficking and exploitation as these make poverty worse and create a more unequal and unfair society.

Aid and Justice

The Bible teaches Christians to have a strong belief in **justice**, **fairness** and **equality**. It also states that "*faith without works is dead" James 2:14* which means they must put these beliefs into practice.

Christians can support charities such as **Christian Aid** and **Cafod** which provide **aid** for those in most need. This can be **emergency aid** which is sent to disaster zones **or long-term aid** which helps people in LEDCs improve their welfare and prospects.

They might also support a campaign like **Fairtrade** which aims to make sure farmers and producers abroad are paid a fair amount for their products such as sugar, coffee and chocolate.

Criticisms- Karl Marx sees institutions as serving the needs of the ruling class (bourgeoisie) and exploiting the lower class/masses (proletariat). This includes religions, which Marx states is an opiate to the masses, promising pie in the sky when they die, so they are more likely to accept their position in society.

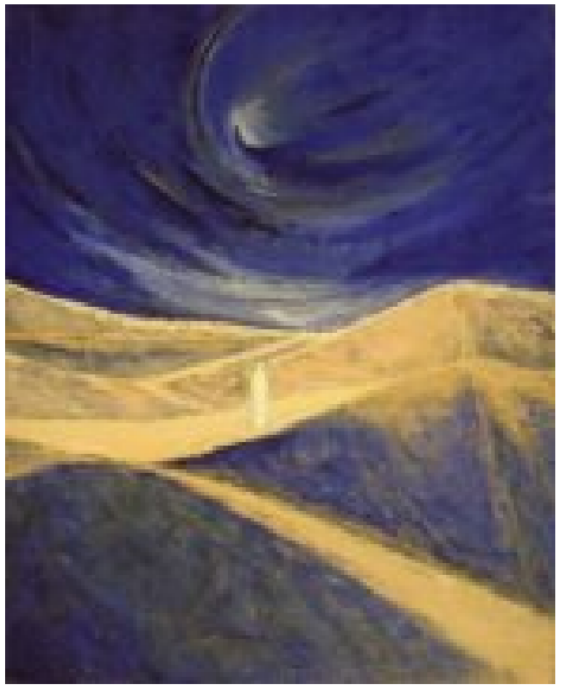
Operation Christmas Child- Used to spread Evangelism and tries to convert the needy, saying they will live in internal hell if they do not convert.

Does our behaviour really matter? In JK Rowling's book: Harry Potter and the Goblet of Fire, Albus Dumbledore says **"We must all face the choice between what is right and what is easy."**

Lent offers Christians a time to reflect on their behaviour and the choices they have made for example if they have been selfish or if they have taken time to think of others. It is a time to prepare, and rethink. A time to seek reconciliation, a renewal of faith and a new direction. Lent enables Christians re-evaluate their conduct and relationships in all aspects of their life and to look at the direction life is leading them.

Jesus is tested in the wilderness: Matthew 4: 1-11 New Revised Standard Version

Jesus in the Desert: Macha Chmakoff



4 Then Jesus was led by the Spirit into the wilderness to be tempted[a] by the devil. 2 After fasting for forty days and forty nights, he was hungry. 3 The tempter came to him and said, 'If you are the Son of God, tell these stones to become bread.' 4 Jesus answered, 'It is written: "Man shall not live on bread alone, but on every word that comes from the mouth of God."'[b] 5 Then the devil took him to the holy city and set him on the highest point of the temple. 6 'If you are the Son of God,' he said, 'throw yourself down.

For it is written: "'He will command his angels concerning you,
and they will lift you up in their hands,
so that you will not strike your foot against a stone."'[c]

7 Jesus answered him, 'It is also written: "Do not put the Lord your God to the test."'[d] 8 Again, the devil took him to a very high mountain and showed him all the kingdoms of the world and their splendour. 9 'All this I will give you,' he said, 'if you will bow down and worship me.' 10 Jesus said to him, 'Away from me, Satan! For it is written: "Worship the Lord your God, and serve him only."'[e] 11 Then the devil left him, and angels came and attended him.

Lent is a key Christian festival where people reflect on their lives. Jesus was tested in the wilderness. People often set themselves challenges ahead of Holy Week culminating in Easter Sunday. They try to be kinder or give something up.

The film Hail Caesar! follows a day in the life of Eddie Mannix, a Hollywood fixer for Capitol Pictures in the 1950s, who cleans up and solves problems for big names and stars in the industry. At times Eddie's life is filled with the dilemma of making the right choices and decisions:

https://www.youtube.com/watch?v=UILLd-uBMk4

Reflect/think about a time: In the clip the Eddie has gone to talk through things with a priest, his lifestyle choices and behaviour.

Why do you think Eddie felt the need to talks things through?

What impact had Eddies choices had on him?

When Eddie talks about a decision he has to make, the Priest talks about the inner voice and listen to the voice until you hear what is right.

Have you ever had an experience like Eddie's?

EXPERIENCES that can help us ENCOUNTER:

How might choices and random acts of kindness and generosity help us grow?
Watch this video clip from the film the Fight Within and hear how a chance decision to act generously to a stranger, leads to an unexpected exploration about making decisions and choices.

https://www.youtube.com/watch?v=fOzp6IplsNY

What do you think prompted the man to buy and share pizza? What other things were shared other than pizza? Who benefitted from the encounter?

In the Christian tradition the word stone or rock has many symbolic meanings. The word stone and rock are used over 400 times in the bible and signify strength, steadiness, protection and durability. 'So I will call you Peter, which means "a rock." On this rock I will build my church, and death itself will not have any power over it.' (Matthew 16:18) Peter had followed Jesus but he had not always behaved well or made good choices in his life. However, Peter was the first to recognise Jesus as the Messiah. Jesus knew that Peter would go onto betray him but did not give up on Peter. He could see how in the future, he could trust Peter and how Peter would ensure that the message of salvation for God's people would spread across the world. Read the account (Matthew 19:13-18)

Draw a stone and cut it out or find a small stone from the garden wash and dry it and use an indelible Sharpie) or glitter glue pen. Think about all the good habits, actions and behaviours you want to develop or improve e.g. kindness, selflessness, faithful generosity etc. Then place your 'stone'/'rock' somewhere in your room where you will see it every morning and evening as a reminder of your intention.

open academy

Norfolk County Council

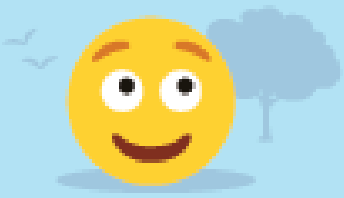
Five Ways to Wellbeing

Activity Sheet

Use the challenges on this sheet to help your child feel better and find ways of managing their own mental wellbeing.

Why not cut them all out and encourage them to choose one or two per day to do. Once they have tried them all they can pick their favourites to do regularly.

Be active

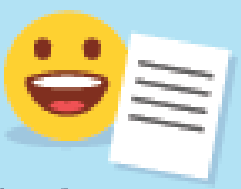


Do a half an hour walk around the local area and write about what you saw when you get back including how it made you feel.

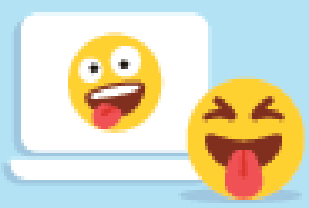
Set up an indoor obstacle course to get your heart rate up

Have a kitchen disco with your household – each pick your favourite songs and do your most energetic dancing together.

Connect



Write a letter to someone that you haven't seen for a long time. Ask how they are and tell them how you have been feeling. Draw pictures or take photos to print and go with it.

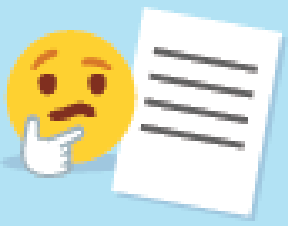


Make contact with a friend from school – ask a parent to help you set up a video call so that you can see each other and talk.

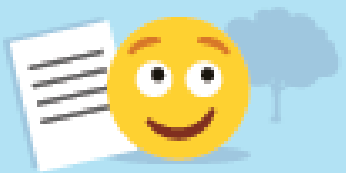
Connect with those you live with by spending time playing a board game together.

Take notice

Sit outside and listen to the birds sing, and notice what other sounds you can hear.



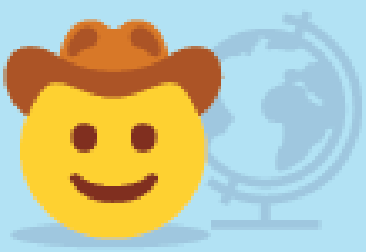
Write a list of the three things you look forward to doing the most when we are allowed to do them again.



Go for a walk in your local park and look at the trees around you noticing what colour the leaves are. Write about what you see and how it made you feel.

Learn

Choose something you are interested in and spend some time reading about it and learning interesting facts to tell people.

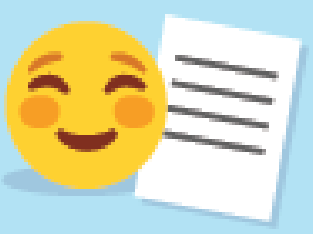


Choose a country you might like to visit one day and learn five words from the language

Learn to cook a meal with the person in the household that usually cooks. Help them with the preparation and the clearing up.

Give

Make a homemade card to send to a friend or family member that you can't see at the moment.



Write a list of the things you appreciate most about the people you live with and let them see it.

Help with some of the chores around the house whether it's doing the hoovering or pairing the socks.

If you are worried about a child or young person or would like more information advice and guidance about their mental health and wellbeing visit: https://www.justonenorfolk.nhs.uk/mentalhealth or call 0300 300 0123

KS3 Football

Rules and regulations of the game

Each game consists of **90 minutes** (45 minutes in each half) with **11 players on each team.**
The game is controlled by a referee, assistant referee and other officials to ensure the games are played fairly and within the rules.
The team who scores most goals at the end of the game wins.

Penalty - This happens when a direct foul is committed in the penalty area of either side of the pitch.
Direct Foul - This happens when a player makes illegal contact with an opposing player without winning the ball. A free kick is awarded and the opposition player must stand 10 yards away.
Indirect Foul - An indirect free kick is awarded for less serious fouls such as handball, offside, and the goalkeeper picking up a back pass. An opposing player must still be 10 yards away but the ball must touch another player before a shot can be had.
Offside - A player is in an offside position if, when the ball is played by a team- mate, they are nearer to the opposition's goal line than both the ball and the second last opponent. An indirect free kick is then awarded to the other team.
Players and Substitutes - A team can field only 11 players at any one time. Their squad can consist of 7 substitutes from which only 3 can be fielded. A team cannot substitute a player who has been shown a red card.
http://www.thefa.com/football-rules-governance/lawsandrules

Key positions

Goalkeeper - This person guards the goal and is able to use their hands to stop and catch shots and crosses.

Defender - This person helps to protect the goal by marking and tackling opposition as they approach. The main job is to protect the Goalkeeper.

Midfielder - This person works between defending and attacking. They often win the ball and try and create attacks. They play in the middle of the pitch.

Attacker -This person works on scoring goals for their team.

The image above shows the variety of positions, most common on the field of play.

Tactics

Tactics in football can vary from team to team and can be determined by the formations each team plays. **Common formations can include 4-4-2, 4-1-4-1, 4-2-3-1, 3-5-2 and 4-3-3.**

Each formation and tactic has a style of play. The following are used most frequently:
High-Press – This involves chasing the ball from the opposition higher up the pitch. This tactic works on the precedent that the higher up the pitch you win the ball, the short distance you have to go to get into a goal scoring position. The attackers defend first and the midfield aim to win the ball in the opposition half.
Tiki-Taka – This requires intricate passing and fluid movement between every player on the field, the key to its success is overloading the midfield area with technically skilful players who can retain possession of the football.
Counter-attack – A counter-attack starts when a team steals the ball and launch into an attack at speed. The tactic involves dropping deep, allowing the opposition to have the ball and come forward with it, committing players forward and leaving gaps in behind as they go.

https://blog.pitchero.com/football-tactics-explained

Playing between the lines is another tactic which teams try to use. This is the space between each area of the team. I.e. the defence and the midfield. Playing the ball in this area can make defending more difficult for a team.

Key Skills

Passing – There are many ways to pass a football. Using the instep of your foot, outside of the foot and top (laces) part of the foot.

- Place the non-kicking foot next to the ball
- Using flexion, lift the kicking foot back ensuring the part of the foot you aim to use has been angled correctly.
- Keep your eye on the ball
- Ensure your head and upper body are placed over the ball to provide better control and balance.

Shooting – Just like passing, there are a number of ways to shoot.

- Observe the goalkeeper's position.
- Put your non-kicking foot alongside the ball
- Keep your head down and your eyes on the ball
- Keep your body over the ball.
- Make contact with the side of the foot for accuracy and top of the foot for power.

Dribbling – It is important to keep the ball under close control to outwit your opponent when dribbling.

- Keep the ball close to you to ensure better control.
- Use the inside and outside of both feet.
- Take quick, small steps.
- Dribble with your head up to see spaces and opponent.

Control – Having the ball under control helps to prepare and perform your next move with in the game.

- Keep your eye on the ball to monitor the speed and direction of the balls movement.
- Move your body behind the ball to cushion it and slow the ball down

https://grassroots.fifa.com/en/for-coach-educators/technical-elements-for-grassroots-education/the-basic-techniques/the-basic-techniques.html

Definitions and Key terminology

Corner Kick: A kick taken from the corner of the field by an attacker. The corner kick is awarded when the ball has passed over the goal line after last touching a defensive player.
Cross: A pass played across the face of a goal.
Dribble: Keeping control of the ball while running.
Foul: Any illegal play.
Free Kick: A kick awarded to an opposition player when a player has committed a foul.
Give and Go: (also known as a 1-2) When a player passes the ball to a teammate, who immediately one-touch passes the ball back to the first player.
Goal Kick: A goal kick is awarded to the defending team when the ball is played over the goal line by the attacker.
Man to Man Marking: A defensive system where defenders are designated one attacking player to track continuously.
Offside: A player is in an offside position if he is nearer to his opponent's goal line than both the ball and the second-to-last opponent. This does not apply if the players is on their half of the field.
Penalty Spot: The marked spot 12 yards from the goal line from which a penalty kick is taken.
Penalty: A penalty kick is awarded when a foul has been committed inside the penalty area in front of the goal.
Tackle: To take the ball away from the opponent using the feet.
Through Pass: A pass played past defenders into free space to allow a teammate to run onto the ball.
Throw-In: The ball is thrown in after the ball has crossed the touch line. A player taking a throw in must have both feet on or behind the touch line and must use a two-handed throw made from behind the head.
Zonal Marking: A defensive system where defenders mark a designated area of the field of play instead of tracking players across the pitch.

KS3 Netball

Rules and regulations of the game

1. Obstruction – a player attempting to intercept or defend the ball must be at least 3ft (0.9m) away from the player with the ball. This distance is measured from the landing foot of the player in possession of the ball.
2. Footwork – the landing food cannot be moved, other than to pivot on the spot, whilst the other foot can be moved in any direct. If a player lands on two feet simultaneously, you may take a step in any direction with one foot.
3. Contact – contact occurs when a player's actions interfere with an opponent's play whether these are accidental or deliberate. Interference may occur through physical contact, placing hand(s) on the ball held by an opponent and while holding the ball, pushing it into an opponent.
4. Replayed ball – a player may not replay the ball. Specifically you cannot; lose control of the ball and pick it up again, catch a rebound from a shot on goal if the ball has not touched the post or another player, toss the ball into the air and catch it again without it being touched by another player.
5. Offside – a player with or without the ball cannot move into an area of the court that is not designated for their position.
6. Held ball – when a player has possession of the ball for more than three seconds without passing it.

https://www.englandnetball.co.uk/
https://www.englandnetball.co.uk/make-the-game/officiating/rules-updates/

Key positions

Goal shooter – to score goals and to work in and around the circle with the GA
Goal attack – to feed and work with GS and to score goals
Wing attack – to feed the circle players giving them shooting opportunities
Centre – to take the centre pass and to link the defence and attack
Wing defence – to look for interceptions and prevent the WA from feeding the circle
Goal defence – to win the ball and reduce the effectiveness of the GA
Goal keeper – to work the GD and to prevent the GA/GS from scoring goals

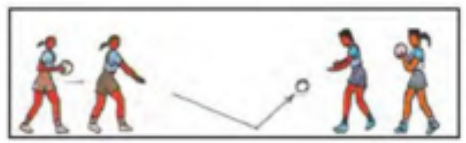
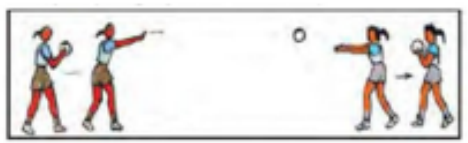
Tactics

Reading the play – good netball players have the ability to be able to read the play and immediately react to it and predict what will happen.
Positioning – good netball players are able to position themselves between their player and the ball or in the goal area between the shooter and the ring. Good players are also able to position themselves so as not to crowd one area of the court, and have the awareness to move out of a crowded area and into space.
Timing – timing is an essential part of netball and all good netball players have the ability to time their movements to near perfection. Good netballers also have the ability to time their pass of the ball so it is just in front of the player that they are passing to in order for the player to run onto the ball, and not have to stop and turn to get the pass.
Communication – in a game of netball, communication is a key area, and good netballers have the ability to communicate with their team mates on and off the court in the most effective ways.
Skill selection – skill selection is a major reason for good players being successful, this is due to the players having the decision making skills to know when to use what type of pass, who to pass to and where they need to be on court.

Introduction to tactics - https://www.youtube.com/watch?v=WvRNenTQ9rk
Defensive tactics - https://www.youtube.com/watch?v=4c-bMycWm2A
Attacking and passing ideas - https://www.youtube.com/watch?v=P9qu84KmWv4

Key Skills

Bounce pass *Stage one;* feet shoulder width apart in opposition, with knees bent. Place hands each side and slightly behind the ball, with the fingers comfortably spread. Hold the ball at waist level, with elbows tucked in. *Stage two;* step in the direction of the pass, through extending your legs, back and arms. The wrist and fingers should be forced through the ball releasing it off the first and second fingers of both hands. Follow through with the arms fully extended, fingers pointing at the target and thumbs pointing to the floor.
Chest pass *Stage one;* stand with feet shoulder width and on the balls of your feet, with back straight and knees slightly bent. Place hands on the sides of the ball with the thumbs directing behind the ball and fingers comfortably spread. *Stage two;* the ball should be held in front of the chest with the elbows tucked in. Step in the direction of the pass, by extending their legs, back and arms. Push the ball from the chest with both arms (not from one shoulder). Fingers are rotated behind the ball and the thumbs are turned down. *Stage three;* the back of the hands face one another with the thumbs straight down. Make sure the ball is released off the first and second fingers of both hands. Follow through to finish up with the arms fully extended, fingers pointing at the target and thumbs pointing to the floor.
Shoulder pass *Stage one;* player's feet should be shoulder width apart in opposition. Opposite foot forward to throwing arm. Stand on balls of feet with toes pointing toward target, and knees slightly bent. Hold the ball at head height, slightly behind your head. Elbow should be at a 90degree angle. Fingers spread behind the ball. *Stage two;* step in the direction of the pass by transferring your body weight from back foot to front foot. Pull the arm through with the elbow leading. To follow through, fully extend your arm and wrist. Point your fingers in the same direction as the pass, with palms facing down.


Shooting *Stage one;* stand with feet shoulder width apart on the balls of your feet, keep the body straight in a forward-facing position. *Stage two;* place non-shooting hand on the side of the ball and the shooting hand at the back of the ball. Fingers are slightly open, with the ball resting in the fingers, holding the ball high above the head. Elbows slightly flexed, lined in the direction of the post. Flex knees and elbows, not allowing the ball to drop behind your head. *Stage three;* extend the ankles, knees and elbows. Flex the wrists as the ball is released off the fingers. Straighten your legs by extending the knees at the same time as you release the ball. End the shot standing on tiptoes with your arms extended and fingers pointing towards the ring.
Pivoting *Stage one;* run towards the ball and jump by extending the legs and ankles. Keep your eyes firmly fixed on the ball. Bring your hands out in front of your body at chest height with fingers spread open and pointing up. *Stage two;* in the air catch the ball with thumbs an inch or two apart making a 'W' shape. Land on the ball of one foot on the group. Flex your knee and ankle as your foot hits the floor. *Stage three;* stand with knees slightly bent and your feet shoulder width apart. Bring the ball into your body to protect it. Pivot by rotating yourself on the ball of your landing foot. Keep your upper body straight and head up. Make sure the hip of your pivoting leg is pointing in the direction you are aiming to pass the ball in. You can move or step with the other foot any number of times. You are not allowed to lift the foot you are pivoting on before you release the ball.

Definitions and Key terminology

Bounce pass; a bounce pass is a short pass that enables the player to find a teammate in a crowded area. The height of the ball makes it difficult for the opposition to reach and intercept.
Centre circle; is the circle in the middle of the court. It is where the centre starts the game after a goal.
Chest pass; a chest pass is a very fast and flat pass. This enables a team to move quickly up a court in a precise and accurate fashion.
Contact; when a players physical action interferes with their opponents ability to play whether accidental or deliberate.
Dodging; a quick change in direction aimed at losing your opponent to get the ball.
Feeding; when a player passes the ball into the goal circle from outside the ring.
Shoulder pass; a shoulder pass is a very dynamic, fast and long pass. This enables a team to switch positions on court very quickly to find a player in space or break defensive screens.
Pivoting; the pivoting action is a swivel movement that allows the player to move on a fixed axis to either pass or shoot.
Rebound; jumping to recover the ball in the goal area after a missed shot.
Spatial awareness; a player's ability to understand their place in a space without running into or crowding other players.

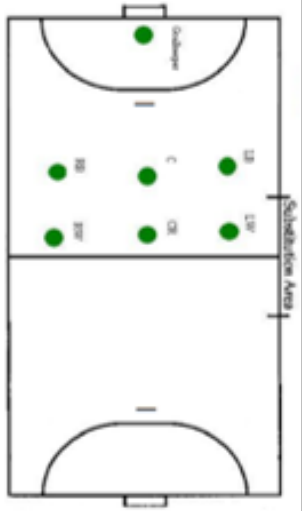
KS3 Handball

Rules and regulations of the game

Each match consists of **two periods of 30 minutes** each.
Each team consists of **7 players; a goalkeeper and 6 outfield players.**
There is semi-circle area around each goal area. There is also a dashed semi-circle line which lies 9 metres from goal, which is the free throw line.
Outfield players can touch the ball with any part of their body that is above the knee.
Once a player receives possession, they can pass, hold possession or shoot.
If a player holds possession, they **can dribble or take three steps** for up to **three seconds** without dribbling.
Only the goalkeeper is allowed to come into contact with the floor of the goal area.
Goalkeepers are allowed out of the goal area but must not retain possession if they are outside the goal area.
To win in handball you must score more than your opponent.
If the game is drawn then there must be a winner; then periods of overtime with a maximum of 2x 5 minute periods are played. If the scores are still level, a shoot-out is used to determine the result of the game.

https://www.englandhandball.com/

Key positions



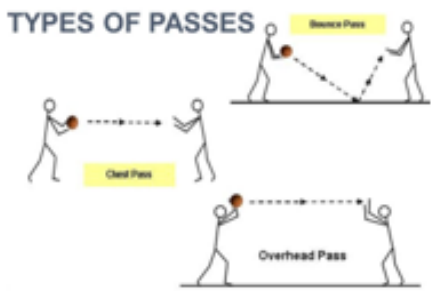
Goalie: This player defends the team goal against the opposition who are attempting to score goals. The goalkeeper is the player permitted to field inside the goal area and the only player who can use his legs to kick the ball.
Left and Right backs: When defending, these players will block the shots and pass to the centre. This players also attack and will usually shoot from longer distances.
Centre: Both an attacking and defensive player which is also called a 'playmaker'. They are positioned largely around the midcourt area and their role is to initiate the offensive play, shoot, or try to penetrate the opponent's defence.
Left and Right wingers: These players will be aiming to score the goals to win the game from difficult angles. Every player can act as an attacker during the game and these players will use pace to create openings to score.
Circle player/runner: The main player in attack who helps defend from the front and creates openings for teammates and gets into shooting positions.

Definitions and Key terminology

Block (blocking the ball): This relates to the body of a player interfering with the normal shot of the receiver.
Bounced Shot: This is a when a player is shooting at the goal with the ball hitting the floor on its way.
Corner Throw: The handball corner throw is given when the ball is played over the goal line (or either side of the goal) by a defending player.
Court Player: All outfield players are called court players. This does not include goal-keepers.
Court Referee: The court referee stays behind the attacking team. He watches for any defensive or offensive fouls or possession violations committed by the court players.
Dive Shot: It is a way of shooting by jumping above the floor towards the goal. It is done without touching the d-line.
Exclusion: Exclusions occur for assault. The excluded player's team has to play with one player less for the rest of the game.
Faking: This is a tactic used to trick the opponent with a hand or body movement e.g. fake pass, fake shot etc.
Goal Area: A D-shaped area six metres from the goal that is used only by the goalkeeper.
Man Marking: A defensive strategy where a defender marks a specific opposition player to guard in the game.
Rebound: The term referring the way the ball bounces backwards after hitting the bars of the goal post.
Zone Defence Systems: A handball zone defence system means a team marking the area of the pitch instead of marking an individual player.

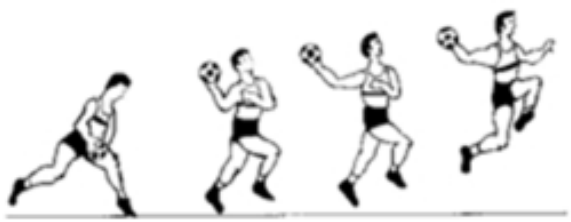
Key Skills

www.bbc.co.uk/bitesize/guides/z32qmnb/revision/5



Catching – Stand shoulder width part, facing the direction of the ball. Move towards the ball and move hands towards the ball and once caught, close fingers around the ball and flex your elbows to bring the ball into your chest.

Shoulder / Overhead pass – Stand shoulder width apart and sideways on. The throwing arm should be behind your head at a 90° angle and the non-throwing arm should be pointing towards your intended target. Finally, transfer your weight from your back foot to your front foot, rotating your hips towards the target. Follow through the pass with your throwing arm pointing towards the target.
Bounce pass – Hands should be in a W shape on the ball with your elbows out. Pass is made from chest and should be bounced just over ⅓ way between the passer and the retriever. As the ball is released, step forward to ensure more power is given.
Chest pass – Holding the ball at the chest, keep two hands behind the ball with elbows out. Push the ball in a horizontal motion and step forward as the ball is released.



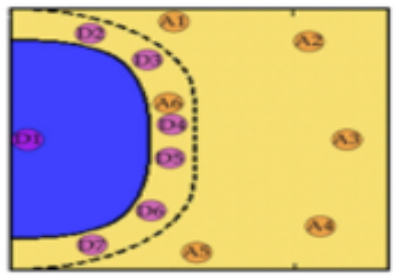
Vertical Jump Shot – This is a power and speed shot towards goal. Face the target and be on your toes. Extend your knees, transferring your body weight from low to high. Release the ball at its highest point of the jump and throw sharply downwards towards the goal.

Dribbling – Be on your toes and stand shoulder width apart. Using your fingertips, push the ball downwards, extending the shoulder and elbow and flexing the wrist. Keep your head up and the ball a maximum of 1m in front of you. Bounce the ball at waist level and repeat the technical skill to maintain the bounce.

Tactics

The most common formations can be 6:0 (six players on the goal area line), 5:1 (5 players on the goal area line, one player in front of them), 4:2, 3:2:1 (open defence), or 3:3, 1:5 (open defence).

Zone Defence is a standard tactic to ensure a team protects their area and goal. When a team loses possession, the aim to retreat and form a barrier around the area to avoid conceding a goal. Each defender protects one area of the court.



Sidestepping is a skill which can be both tactical and technical. It is an element of the attacker's basic movement. They will perform a side-step by continually moving sideways mainly across the width of the handball court dimensions to create a space for a pass or dribble.

KS3 Rugby

Rules and regulations of the game

Each game consists of **80 minutes** (40 minutes in each half) with **15 players on each team.** The aim of the game is simple - use the ball to score more points than the other team. You can run with the ball, kick it and pass it, but passing forwards is not allowed. Rugby union is a contact sport, so you can tackle an opponent in order to get the ball, as long as you stay within the rules.

There is a referee, aided by two touch judges (one on each side of the pitch), to decide how the rules should be applied during a game.

There are several ways to score points.

A try - five points are awarded for touching the ball down in your opponent's goal area.

A conversion - two points are added for a successful kick through the goalposts after a try.

A goal kick - three points are awarded for a penalty kick or drop goal through the posts.

Penalty – is given if there is an infringement of the rules

Offside - If a player is in front of a team-mate in possession of the ball, or in front of a team-mate who last played the ball, they will be offside if they:

Actively try to play the ball

Do not retreat within 10m of an opponent who is waiting for the ball

Move towards the opponents or the place where the ball lands without first coming back onside

The referee will award a penalty at the place where the offence took place.

Players and Substitutes - A team can field only 15 players at any one time. Their squad can consist of 8 substitutes/replacements- Some can come off the bench due to injuries, while others are substitutions are for tactical reasons. A team cannot substitute a player who has been shown a red card.

https://www.englandrugby.com/governance/rules-and-regulations/regulations

Key positions

Front row –a long with the hooker, the loose-head and tight-head props make up what is known as the front row.

Second row - the second row forwards (also known as locks) are the engine room of the scrum and the target men in the lineout.

Flankers - Out of all the rugby positions, they are more often than not at the centre of the action – winning balls at the ruck and maul, collecting short passes from tackled players and making their own big tackles in open play

Number eight -Support play, tackling and ball-carrying are the No.8's areas of expertise, making his or her duties similar to the two flankers. Together the trio forms a unit called the back row.

Scrum half -Acting as the link between the forwards and the backs, the scrum-half is the key rugby positions when it comes to building attacks

Fly half -The heartbeat of the side and arguably the most influential player on the pitch. Almost every attack will go through the fly-half.

Centres - The inside centre is often the more creative in a centre pairing and should be able to pass and kick nearly as well as the fly-half. Meanwhile, the outside centre tends to be the faster of the two and the ability to offload the ball quickly to the wingers is also vital.

Wingers - laying out wide on the side of the pitch, the winger is a team's finisher in the attack.

Full back -Lining up behind the entire back line, the fullback is the closest thing that rugby has to a sweeper in defence.

The image shows the variety of positions, most common on the field of play.

https://www.ruck.co.uk/rugby-positions-roles-beginners/

Tactics

Developing tactics requires a thorough understanding of your team's strengths. These tactics will be in part forward dominated and power based, and also reliant on the creation of space and use of pace. As important, is an awareness of the team and individuals you're up against - and the tactics they are likely to employ.

Using power

Using the physical strength of the forwards, in scrums and rolling mauls, can result in significant territory gain. Forward players can 'pick and drive' (gather the ball and take it forward with the support of team mates) until the moment is right to release it to the backs.

Creating space

For all its many complexities, Rugby remains a simple game in essence. Points will be scored when a player is put into space and when an attacking team out-numbers those in defence. As such, Rugby's holy grail lies in the creation of space. There are many tactics geared towards this, but primarily it's about winning quick ball to move the passage of play away from a concentration of players whilst injecting pace and creativity in attack to make space for a player to score.

https://passport.worldrugby.org/?page=beginners&p=18

Key Skill

Passing - Hold the ball in front of your body in two hands with fingers spread on either side.

- To pass left– right hand for power (towards back of the ball) and left for aim (towards front of the ball). Keep power arm high (elbow up) for accuracy and distance.
- Fluid motion to release the ball with arms swinging like a pendulum in front of the body, first away from then towards the intended target. Follow through with the hands pointing towards the receiver at point of release.
- Players should nearly always look to carry the ball in two hands, ready to pass to supporting players either side of him/her.
- Receivers should always have their hands up which is the target for the passer.

Rucking - ruck is a phase of play where one or more players from each team, who are on their feet, in physical contact, close around the ball on the ground

- Get low by dropping the hips when approaching the ruck.
- Keep your head up and back straight, and look at the target.
- Drive into the target, forward and up.
- Shorten your stride as you approach the ruck
- Drop your hips to get low, don't bend your back.
- Keep your eyes on the target and drive beyond the ball.

Tackling - A rugby tackle is quick, simple, and safe if you keep your head up and lead with your shoulder. A good tackle has several components, and mastering them will prevent injuries and bring down opponents with ease:

- Start in an athletic position, on your toes to adjust to the attacker's movement.
- Lead with your shoulder, driving it into their thigh or stomach.
- Keep your head up, tucking it along the butt of the attacker.
- Wrap your arms around their thighs, squeezing in to take them off balance.
- Let your momentum carry your shoulder through them, using your arms to squeeze" them to the ground with you.

Maul - A maul occurs when three or more players, including the ball carrier and at least one other player from either side, are in contact together.

- What makes the maul different to the ruck is that the ball is not on the ground but in hand.
- Players joining the maul must have their heads or shoulders no lower than their hips and must have at least one arm bound to a team-mate.

Definitions and Key terminology

Attack - move the ball forwards in order to score
Conversion - kick for goal after scoring a try, for two extra points
Drop goal - drop kick through the goalposts during normal play, worth three points
Drop kick - kick in which the ball is dropped to the ground before being struck with the foot
Forward pass - illegal pass thrown to a position ahead of the player who threw it
Foul - an infringement of the laws; illegal play
Try line - line at each end of the pitch on which the goalposts are erected
Knock-on - foul of knocking the ball forward, towards one's own goal
Line-out - formation of forwards into which the ball is thrown to restart play after the ball goes into touch
Maul - convergence of players around a ball carrier to push him and the ball forward
Obstruction - foul of obstructing a player by blocking, tripping, shirt-pulling, etc.
Pass - throw of the ball to a team-mate
Penalty kick - free kick awarded by the referee that can be used to kick for goal
Place kick - kick taken by placing the ball on the pitch, stepping back and then moving in and kicking it
Ruck - pack of linked players that forms over a ball to push the opposing team backward and gain control of the ball
Scrum - players from one team link arms, bend over and push forward against a similar group from the opposing side
Tackle - stop a player from running with the ball by wrapping arms around him and bringing him to ground
Touch - area outside the two touchlines
Touchline - one of two lines that form the long sides of the playing area
Try - act of taking the ball over the try line and grounding it to earn five points
Try line - line at each end of the pitch on which the goalposts are erected
Yellow card - card shown to a player being cautioned and sent off the pitch for ten minutes

KS3 Badminton

Rules of the game

1. The shuttle cock must be served diagonally.
2. The side that wins the rally is awarded the point.
3. If server wins point they continue to serve until a point is lost.
4. Serving is alternated between opponents when server loses a point.
5. First to 21 points wins, if 20-20, the side that gets 2 clear points wins, if 29 all first to 30 wins.
6. The shuttle must always be served diagonally and the serving side will depend on you own score. If your score is an odd number you serve from the left, if it is an even number you will serve from the right.
7. A point will be given to the opposing side if the net is touched by the racket or person.

Key positions

To always position yourself in the middle of the court after you make your shot (dominate the T)

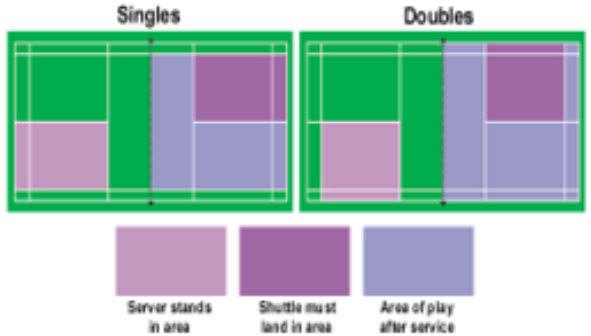
In doubles you need to make a decision whether you are playing front and back or side to side. With front and back, when serving stay front and when receiving stay where the opposition has aimed the shuttle cock e.g. stay back if long serve or front for short serve.

https://web.mst.edu/~ima/rules/Badmintonrules.html
Rules of the game video - https://www.youtube.com/watch?v=UyLli-TbcFc

Court markings

Below shows where you must serve from and what parts of the court are in and out on serve.

It also shows what parts of the court are in and out during a rally (after serve) in singles and doubles.



https://www.badmintonengland.co.uk/#

Tactics

The basic strategy is to apply maximum movement pressure to your opponent.

The central base position – always take the central position after each shot

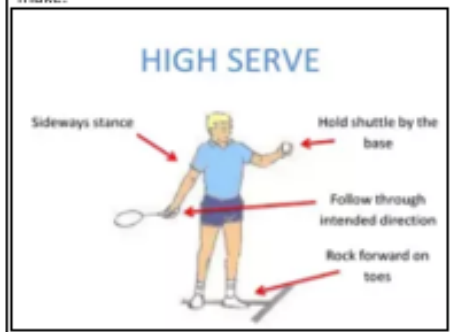
Hitting the corners – aim for corners on side of the court to get opponent out of position.

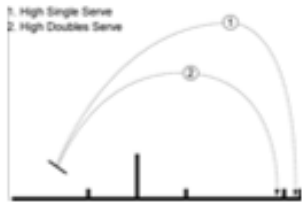
Hitting to the body – make it difficult for opponent to return an effective shot.

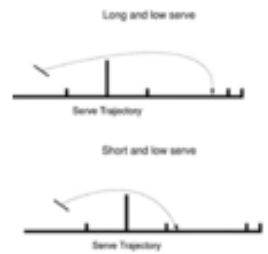
Building shots – don't try and win the point straight away, get your opponent out of position on the court to allow you to attempt a winning shot.

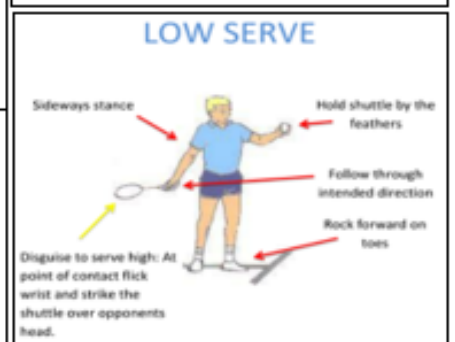
Winning shots – use when appropriate during a rally.

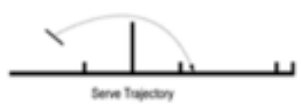
Using deception – to outwit your opponent so they don't know what shot you are going to make.











Key Skills

Serving - Stroke used to put the shuttlecock into play at the start of a rally either long or short.

Overhead clear - A shot hit deep to the opponents back boundary line. The high clear is a defensive shot.

Underarm clear - A shot hit deep to the opponents back boundary line. The high clear is a defensive shot.

Overhead smash - Hard-hit overhead shot that forces the shuttle sharply downward. Badminton's primary attacking stroke.

Drop shot - A shot hit softly and with finesse to fall rapidly and close to the net on the opponent's side.

Positioning – be able to put you opponent to a certain area of the court to open the area to win with your next shot e.g. overhead clear to back of the court then use a drop shot at the front.

Definitions and Key terminology

Fault- A violation of the playing rules, either in serving, receiving, or during play.
Let- A legitimate stoppage of play to allow a rally to be replayed.
Rally- Exchange of shots while the shuttle is in play.
Shuttlecock - Official name for the object that the players must hit.
Clear – A high and deep shot to the back of the court.
Love – The score at the start of the game or where a player has not scored a point.
Smash – A fast and hard shot from above the head to force the shuttle downwards to the floor.
Singles – Game involving 2 players in a 1v1 match
Doubles – Game involving 4 players with 2v2 on the court.

Links to other sports and transferable skills

Teamwork, Leadership, Resilience, Respect, Spatial awareness, Verbal communication, Coordination, Agility, Reaction time

Going the extra mile activities.
Here are some great ideas to do with family to avoid boredom that go above and beyond during the next half term.

The Arts	DT	English and Drama	Humanities	PE	Maths	Science
Create a Christmas play for you and your friends to work on over the internet. Make it hilarious.	Research what different kinds of materials plumbers use. Why is copper used for some pipes and plastic for others? What sort of plastic is used?	Watch one of the briefings by the government. What makes a good information giving speech? How is it being delivered?	Create a detailed plan to make the world more economically equal when we are all back to normal. Share it with anyone you can get to listen.	Create a new lockdown Olympic Sport. With the cancellation of Tokyo, your sport needs a name, at least 3 rules and a list of equipment needed.	Explain what a square root is to someone really not mathematical.	Use equipment in your home to demonstrate the principle of moments.
Develop an observational humour stand up show. Watch how comedians tell a story. Think about their delivery and how they make it look like they have just had that thought. Try it.	Design a meme. One that is informative but also can make someone laugh.	Use one of the excellent library apps to listen to or read "Of Mice and Men." How can we be like Lenny?	In 1917 Russia had a great revolution. What would a great revolution look like in 2027? What would be the similarities and differences if Year 9 were in charge?	Get family members to play even by TEAMs or Zoom! Send it to the organisers of the Quarantine Olympics to include it in the next games!	Where can we find the Fibonacci sequence in nature? Do some research!	Help something grow.
Watch a performance by an artist you love – many are on Instagram or YouTube. Evaluate the difference between a live performance and a studio edit.	Make an interesting paper model. Do some origami research to find something fascinating to attempt.	Describe the American dream. How has this driven culture in the Western world? Have a discussion with as many adults as you can.	Why are we fascinated by crime? What makes Jack the Ripper such an interesting topic? Find out why if you can!	Create a diary of your physical activity each week. This could be a simple grid or list of activities.	Make some mathematical art using materials at home like packets and boxes.	Research the health issues regarding vaping. Vaping is new. Is there enough mature research to definitely describe how safe or otherwise it is?
Make a playlist that means something to you. Share it with friends and explain why it matters to you.	Invent a new recipe and test it. Evaluate it compared to commercial products.	Watch a film. Be a film critic. You are being interviewed to review the film on radio 4. What would you say?	How can we be greener as a society using technology? Create an infomercial advertising a product.	Think about what exercise or activity you completed, how long did you exercise for and how you felt during and after the activity.	Use your maths skills on page 49 to produce the report on page 35. This is the challenge from Mr Ford. How good can this be?	Find out how fans in ovens influence cooking times. What has this to do with convection?