



THS

TIVERTON HIGH SCHOOL

Year 7

Knowledge Organiser

Spring Half Term 1

‘Practice of what is taught’

Name:

Tutor:

Work hard. Be kind. Belong.



How to use your Knowledge Organiser

This booklet contains **knowledge organisers** for all your subjects in alphabetical order. Each knowledge organiser has the key information to be learned and **memorised** over the term to help you master your subjects and be successful in lessons. Use this with your homework booklet.

Year 7 subjects	Page/s number
Art	1
Design Technology	2
Drama	3
Food	4-5
Geography	6
Maths	7-10
Music	11
Religion	12

Work hard. Be kind. Belong.

ART

1. Sketching a line – Plot out your shape lightly, use a feathery light line to get the accurate shape. Make the line darker when you are happy this is the best that you can produce.



2. Blind drawing- When you are only looking at the object you are drawing and not looking at your drawing. The drawing will not look accurate but will show aspects of the object you will recognise.



3. Continuous line drawing Draw an object in pen without taking your pen off the paper. This drawing should be an accurate representation of the object but it will have trail lines.



4. Checklist for a successful drawing

Choice of object – In drawing this object you will be able to demonstrate your skills

Sharp pencil – To help you add accurate detail

Size – work large so you can fit in more visual information

Shape – ensure the shape is accurate

Sketching you have used a sketched line rather than a heavy solid line

Detail - from observations you have included every aspect of the object.

6. How to paint with ready mix

Start with the background, paint the whole space

Build up the tones in the back ground
Sketch the outline.

Start with the main body of the picture.
Add brush marks to create layers
Add the detail last.

7. Colour pencil

Sketch the outline lightly in pencil

Bold colours – Apply pressure when colouring.

Layering (Lightest colours first)

Blending

Directional shading

Use different tones of the same colour



8. Oil Pastel

Sketch lightly in pencil first.

Blend colours using the pastels not your finger.

Paint with PVA glue to varnish.

9. Collage (Coloured paper/newspaper/magazines)

Use torn or cut paper depending on the quality of the edge you want.

Build up layers, large areas of colour first to details last.

10. Content- what the work is about/of
Process- How the work is made/created
Form- How have the artists used the basic elements?

Connections- How does the artist's work connect to your project?

11. Organic forms objects like seed pods, shells, bugs and butterflies..... These objects have curved edges.....

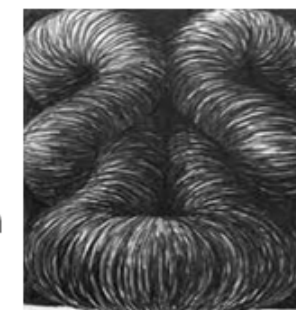
12. Peter Randall- Page

Content-He uses nature as inspiration, things like shells, seed pods, flowers, camouflage and dividing cells are starting points for his work .His work is often based on maths.

Form-His work is solid with a little texture on the surface.The shape is organic with smooth edges.

Process- Materials used, Limestone, granite and marble.Hammer and chisel with fine sanding tools.Cast in bronze.Clay

Connections- Natural forms, Greek and Roman art. Randall-Page uses direction shading to create the illusion that the drawing is 3d.

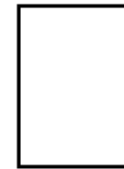


13. Composition

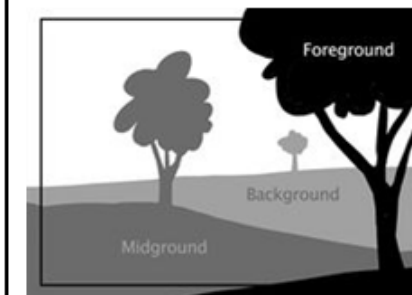
Landscape



Portrait



14. Foreground/Mid-ground/Background



How the space in an image or picture is divided up to give a sense of depth.

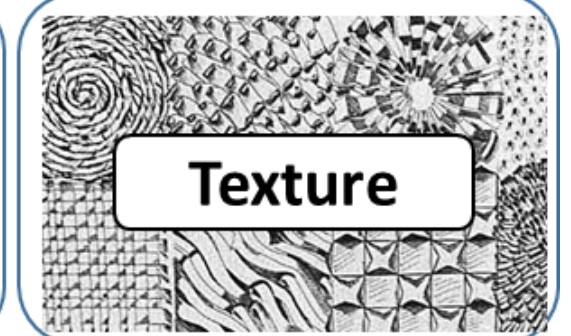
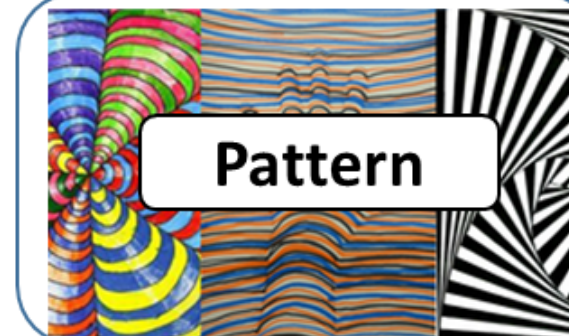
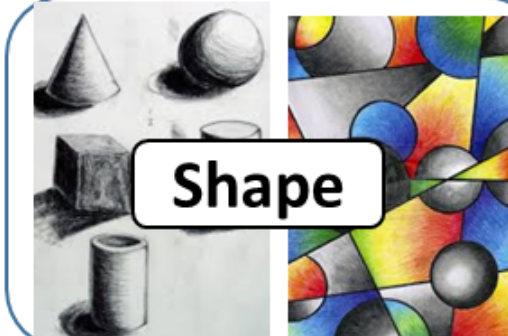
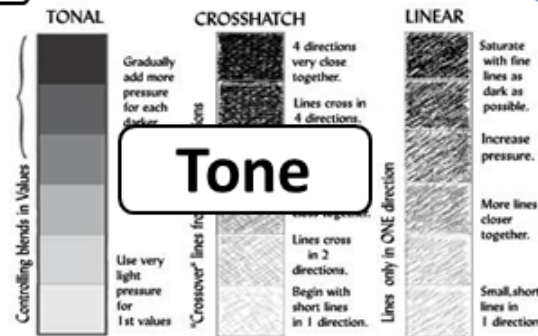
15.

Rule of thirds



How the space in an image/ picture is divided up to create points of interest that draw the viewer's attention to certain objects or subjects within the composition.

5. BASIC ELEMENTS



DESIGN & TECHNOLOGY

Design and Technology – Year 7

0. In Design and Technology there are different areas of study.

These are covered under the Key Themes. They are:

- **Design**
- **Make**
- **Analyse and Evaluate**
- **Knowledge**

There is also the important overarching knowledge needed about the **Design and Technology Process, Tools, impact on the environment, Health & Safety** and Key Terms such as **ACCESSFAME** and the **6 R's – Rethink, Recycle, Refuse, Repair, Reduce and Reuse.**

1. Health & Safety

A Hazard is – Something that can cause you or others harm
A Risk is – The likelihood or severity of the hazard occurring
A Control Measure is – Something that is put in place to stop or reduce the risk of the hazard occurring.

2. Health and safety - 5 things do you need to consider when in the workshop to keep you and others safe?

1. Wear goggles
2. Wear an apron
3. Tie long hair back when using equipment
4. Ensure only 1 person uses the machinery at a time
5. Clamp work down when drilling

3. Tools and what they are used for?



Tenon saw for cutting straight lines in wood and plastic



Hole Saw for cutting larger diameter holes than a standard drill bit.



Bench hook for helping to hold wood when sawing.



Steel rule for measuring accurately



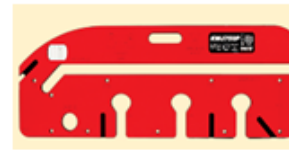
Sewing needle for tacking and hand sewing.



Dressmaking or fabric shears for cutting fabric



Forstner bit is a drill bit for flat-bottomed holes in wood.



Jig is a tool for guiding workpieces to ensure consistency.



Coping saw for cutting unusual shapes & curves

4. To help us remember key bits of information for investigating, designing, analyzing & evaluating we use **ACCESS FAME** acronym.

It stands for:

- **Aesthetics**- what it looks like
- **Cost**- cost to make or buy
- **Client Customer Consumer**- who asks for it to be made, who buys it, who uses it?
- **Environment** – where is it made, is it sustainable, is it recyclable?
- **Size** – how big/small is it?
- **Safety** – what potential hazards are there?
- **Function** – what does it do?
- **Anthropometrics** – what human dimensions are needed so it can be used by the majority of people?
- **Materials/Manufacture** – what will it be made of? How will it be made?
- **Ergonomics** – how will it fit the person using it to make it easy to use?

5. Materials: Timber

- A **hardwood** is from a broad-leaved deciduous tree which has a close grain due to its slow growth. The annual growth rings are close together.



E.g. beech, oak (Pictured), walnut, Sycamore, birch, mahogany and teak

- A **soft wood** comes from a coniferous tree that has needles instead of leaves. It does not shed these in winter. It grows fast and the annual growth rings are further apart.

E.g.. cedar, larch, pine (pictured) and redwood



Manufactured boards are industrial made from recycled or waste wood. They are available in large flat sheets and are can be a sustainable resource. They come in different sizes and thicknesses.

MDF: made from tiny fibers /sawdust that is mixed with a formaldehyde-based glue and compressed together. **The surface layer could be a hard wood to make it look better.** This does not have a grain.

Plywood: made from thin layers of wood that is arranged so that each layer is at 90° to each other making it stronger.

The surface layer could be a hard wood to make it look better.



Chipboard: made from small particles of wood that is recycled or waste wood mixed with a formaldehyde-based glue and compressed.

DRAMA

DRAMA - Animal Farm

Exploring Component Knowledge of Drama



1. Theatrical Elements

1A. Vocal Skills

Pace: how fast or how slow the character speaks

Power: how loud or how quiet a character speaks

Pitch: how high or how low a character speaks

Pause: moments where the character stops talking

Tone: shows what the character is thinking or how they are feeling

1B. Physical Skills

Facial expression: showing emotion of the character through the face

Body Language: using your body to show the character's emotion

Physicality: using your body to show the character

Gesture: a movement of part of the body to show meaning.

Gait: the way a character walks

Exaggeration: Making performance bigger than real life.

2. Building a Character

2. Building a Character

BASIC:

- What do they sound like?
- How do they move?
- What do they look like?
- What is their backstory?

ADVANCED:

- Improvise your character in different situations
- Hotseat your character to learn more about them
- Visualize your character and then use the script to identify their motivations and objectives (what are they doing, why are they doing it?)
- Rehearse your script and use your identified motivations and objectives.

3. Approaching a Text

3. Approaching a Text

Steps to take:

1	Characters	Identify the main characters, who they are and what they are like
2	Setting	Identify where the play takes place, what is the setting and environment like, how will this influence your performance?
3	Dialogue	Investigate the words that the character says – what do we learn about them and the play?
4	Research	Use the internet to explore and identify extra information about the story
5	Background of the play	Investigate the reasons why the play was written

Themes within the play:

Leadership	Corruption
Control over others	Lies and deceit
Naivety	Violence
Pride	Dreams and hope

4. The Commandments

1. Whatever goes upon two legs is an enemy.
2. Whatever goes upon four legs, or has wings, is a friend.
3. No animal shall wear clothes.
4. No animal shall sleep in a bed.
5. No animal shall drink alcohol.
6. No animal shall kill any other animal.
7. All animals are equal.



5. Biographical Information

1. Animal Farm was written in 1945
2. It was written by George Orwell
3. Orwell was born in 1903
4. Animal Farm was influenced by the events of World War 2
5. Orwell wanted to write about the cruel leaders of Europe during World War 2
6. Animal Farm is an allegory for the events of the Russian Revolution.

DRAMA

FOOD

Reared- MEAT – FARM TO FORK

Meat comes from animals that are **reared** on farms. Chickens, cows, pigs, ducks, sheep.

Meat is slaughtered and processed.

We can buy meat in many different cuts.



Caught- FISH- This is **caught** in many different oceans around the world. It is then processed. It is also farmed.



Grown- Crops such as wheat, barley, potato's, carrots,(fruit, vegetables, cereals,)

**EQUIPMENT**

Knives: chefs, vegetable

Chopping boards: red & green

Saucepan/ frying pan- handle not over the heat

Wooden Spoon

Rolling Pin

Baking tray/ Oven gloves

Food processor

WASHING UP hot water and washing up liquid to kill the bacteria

Dish Cloth

Tea Towel

BEANS, PULSES, EGGS, FISH AND MEAT

These foods provide the nutrient protein. Protein is needed for growth and repair of all the cells in the body.

HBV: High Biological value:
Good source of protein –
Animal sources

LBV: Low Biological value
Low source of protein –
Vegetable sources

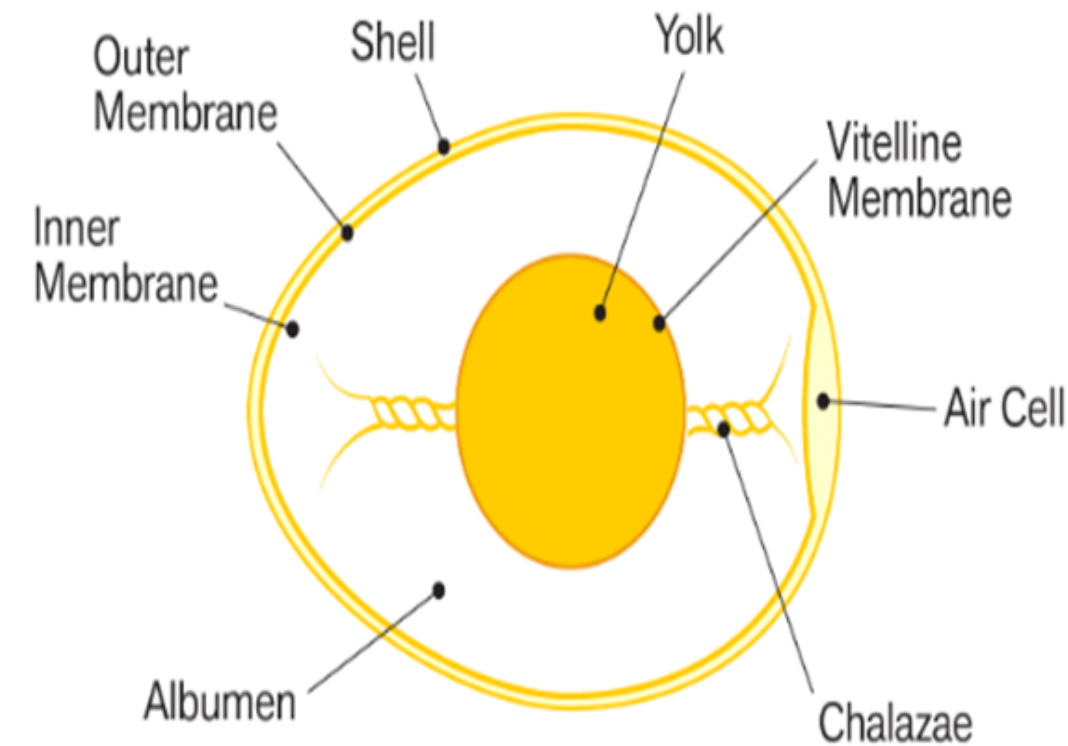
DAIRY AND ALTERNATIVES

These foods provide the mineral - calcium. Calcium is needed for strong teeth and bones. A lack of calcium can cause OSTEOPOROSIS. Dairy products can also be high in the nutrient fat.

FOOD

EGGS

Most of our eggs come from chickens. We can use goose eggs which are good for baking, duck's eggs and quail's eggs.

**EGGS**

BOILED Soft boil = 5/6 mins Hard boil =10 mins

FRIED - COAGULATION – the protein in the egg white sets solid, followed by the egg yolk

SCRAMBLED Gently whisked over-heat until the egg coagulates

POACHED Crack egg into boiling water

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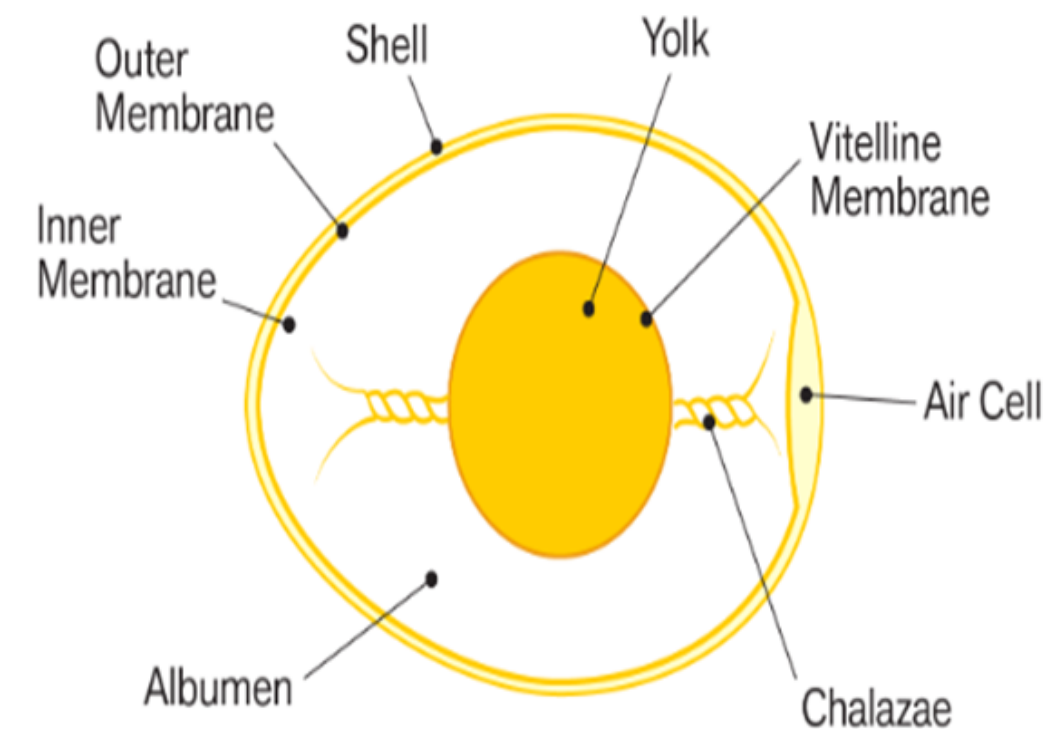
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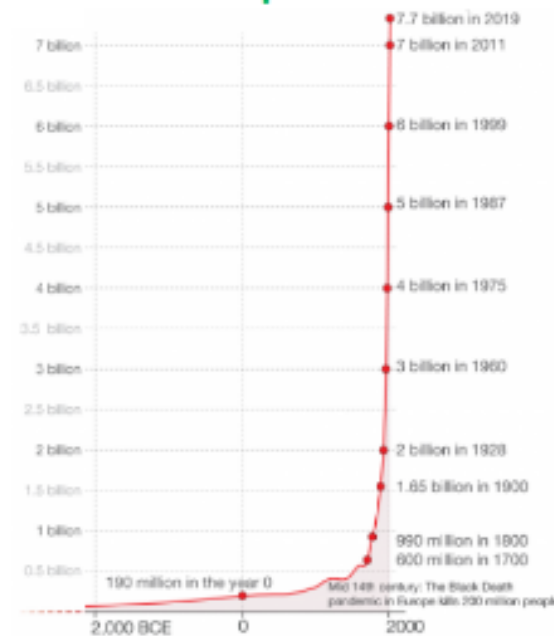
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GEOGRAPHY

GEOGRAPHY 7.2. POPULATION

Population key terms

1. World Population Growth



2. Natural Change

$$B.R - D.R = N.C.$$

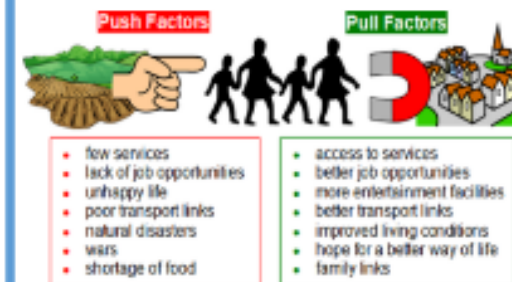
If you take the birth rate (B.R.) of a country and subtract the death rate (D.R.), you will have a number representing natural change; an increase or decrease in population.

Most countries in the world have naturally rising populations, although a small minority are seeing decreasing population size. The most developed countries tend to have very slow growth or slow decline, whilst the least developed countries tend to have rapidly rising populations.

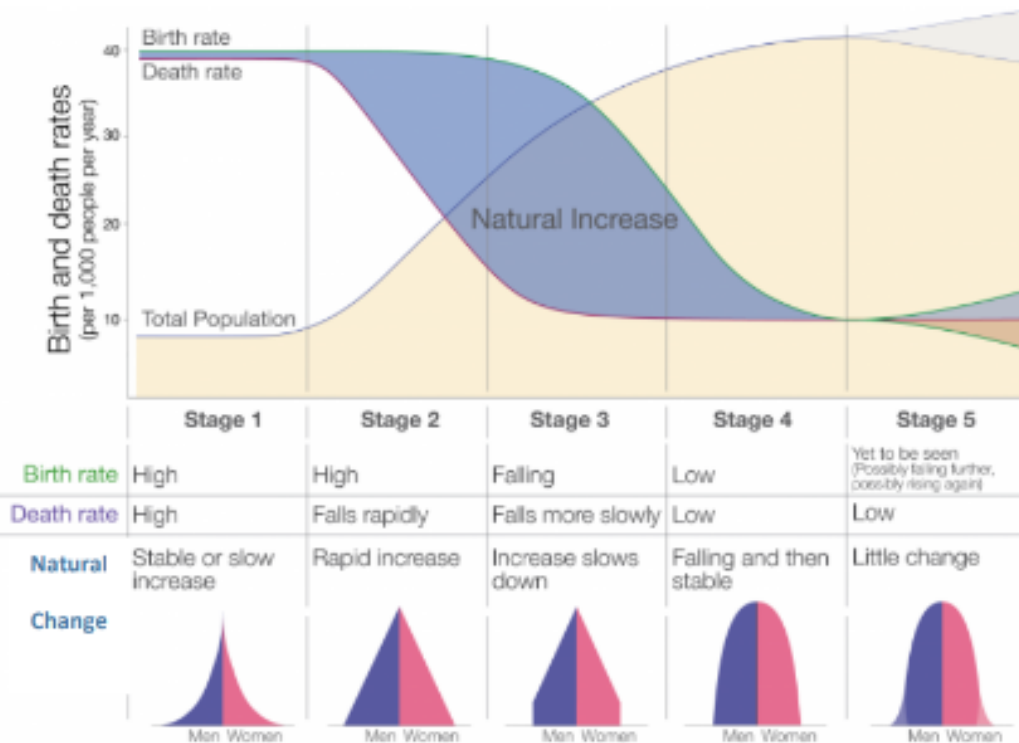
Population	distribution	density
natural increase	natural decrease	
natural change	birth rate	death rate
life expectancy	infant mortality	population
pyramid	demography	demographic
transition model	dense	sparse
push factor	pull factor	migration
migrant	immigrant	refugee
asylum seeker	displacement	

7. Migration

Many people across the world move to live in other places; sometimes it's within a country, sometimes to a different country all together. Some people migrate by choice, others by force or fear for example. Motivation to leave a place is called a 'push factor', the attraction of an alternate place is called a 'pull factor'.



3. The demographic transition model



4. and 5. Population Pyramids

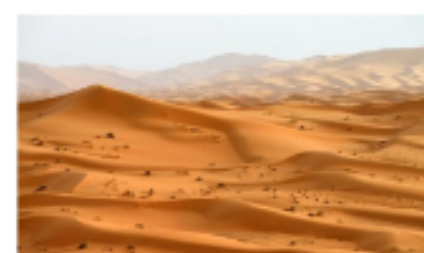
Key terms definitions

Birth rate	The number of live births per 1000 of population per year.
Death rate	The number of deaths per 1000 of population per year.
Natural Change	The outcome of difference between annual birth and death rate
Natural Increase	A growing population due to more births than deaths per year
Natural Decrease	A shrinking population due to more deaths than births per year
Ageing Population	A population structure within a country with a large proportion of senior and elderly citizens—typical in more developed countries
Youthful Population	A population structure within a country with a large amount of children and youths relative to the amount of adults and seniors—typical of less developed countries.
Overpopulation	A situation whereby there are simply too many people; this will stress natural resources, economic and social systems within countries and globally.
Dependency Ratio	The number of economically active citizens (tax payers) compared to the economically dependents (young and elderly)
Optimum Population	A stable population with an even distribution of age groups; this is the position all countries would like to achieve.

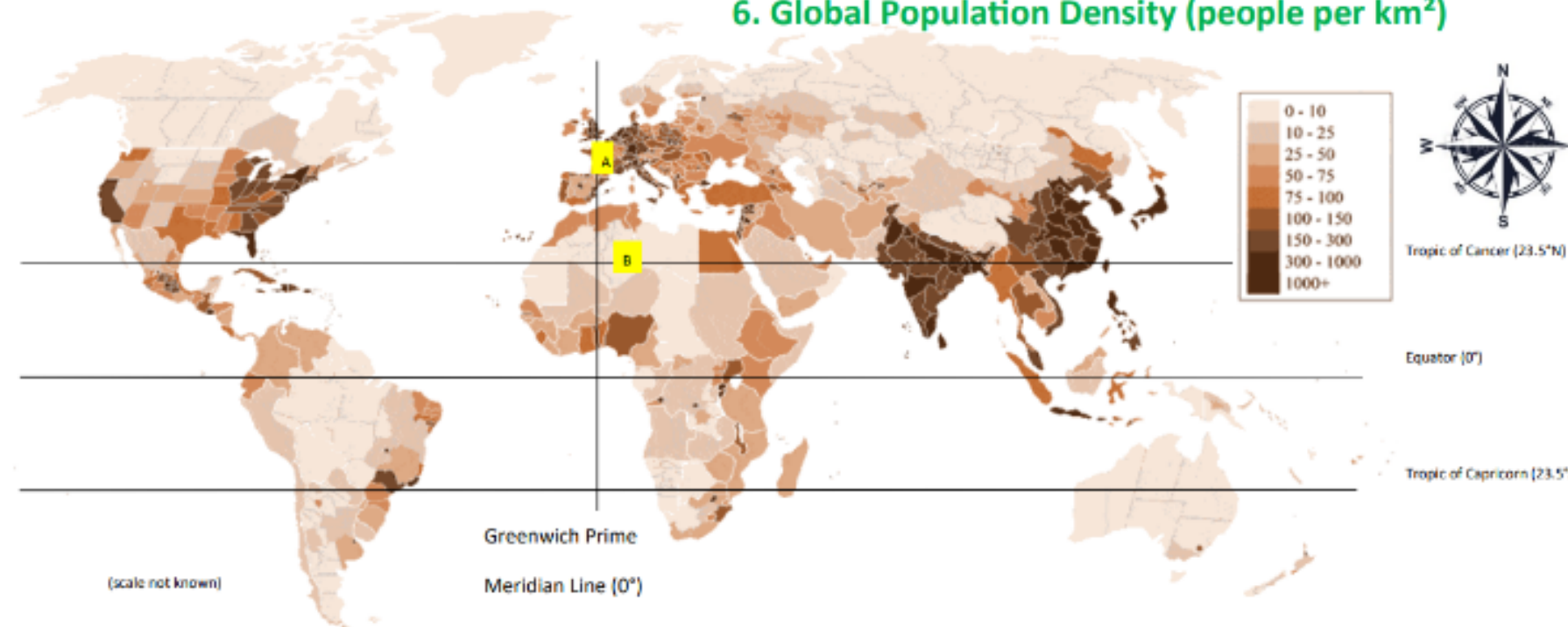
Densely populated area: Southern France



Sparsely populated area: Sahara Desert



6. Global Population Density (people per km²)



MATHS

YEAR 7 — PLACE VALUE AND PROPORTION

@whisto_maths

Ordering integers and decimals

What do I need to be able to do?

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

- Understand place value and the number system including decimals
- Understand and use place value for decimals, integers and measures of any size
- Order number and use a number line for positive and negative integers, fractions and decimals;
- use the symbols $=$, $\neq$, $\leq$, $\geq$
- Work with terminating decimals and their corresponding fractions
- Round numbers to an appropriate accuracy
- Describe, interpret and compare data distributions using the median and range

Keywords

Approximate: To estimate a number, amount or total often using rounding of numbers to make them easier to calculate with
Integer: a whole number that is positive or negative
Interval: between two points or values
Median: A measure of central tendency (middle, average) found by putting all the data values in order and finding the middle value of the list
Negative: Any number less than zero; written with a minus sign
Place holder: We use 0 as a place holder to show that there are none of a particular place in a number
Place value: The value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right
Range: The difference between the largest and smallest numbers in a set
Significant figure: A digit that gives meaning to a number. The most significant digit (figure) in an integer is the number on the left. The most significant digit in a decimal fraction is the first non-zero number after the decimal point

Integer Place Value

Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
			3	1	4	8	0	3	3	0	2

Placeholder

Three billion, one hundred and forty eight million, thirty three thousand and twenty nine
1 billion 1,000,000,000
1 million 1,000,000

Compare integers using $<$, $>$, $=$, $\neq$

$<$ less than
 $>$ greater than
 $=$ equal to
 $\neq$ not equal to

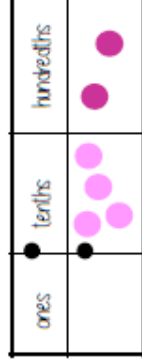
Two and a half million
 $=$ 2 500 000
Three billion
 $=$ 3 000 000 000
Six thousand and eighty
 $<$ 68 000

Decimals

We say
"nought point five two"

Five tenths and two hundredths

0 ones, 5 tenth and 2 hundredths
 $0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01$
 $= 0 + 0.5 + 0.02$
 $= 0.52$



Comparing decimals

Which the largest of 0.3 and 0.23?

Ones	Tenths	hundredths
	0.1 0.1	

Ones	Tenths	hundredths
	0.1	0.01 0.01
		0.01 0.01

$0.3 > 0.23$

"There are more counters in the furthest column to the left"

0.30
0.23

Comparing the values both with the same number of decimal places is another way to compare the number of tenths and hundredths

Round to 1 significant figure

370 to 1 significant figure is 400

37 to 1 significant figure is 40

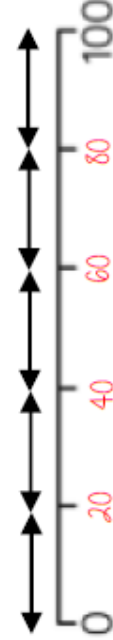
3.7 to 1 significant figure is 4

0.37 to 1 significant figure is 0.4

0.00000037 to 1 significant figure is 0.0000004

Round to the first non zero number

Intervals on a number line



Divide the difference by the number of intervals (gaps).
E.g. $100 \div 5 = 20$

Rounding to the nearest power of ten

If the number is halfway between we "round up"



Range Spread of the values

Difference between the biggest and smallest

3 9 8 12

Range: Biggest value - Smallest value

$12 - 3 = 9$

Range = 9

Median The middle value

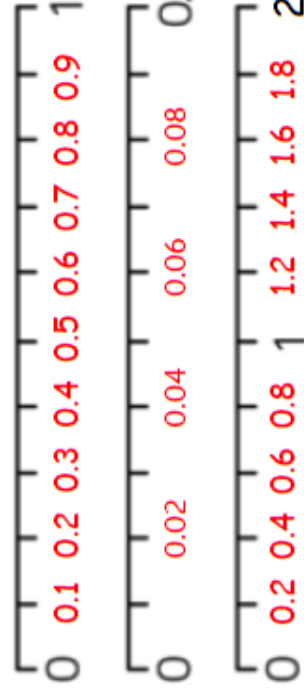
Example 1 Median: put the in order 3 4 8 9 12
4 3 9 8 12 find the middle number 3 4 8 9 12

Example 2 Median: put the in order 137 148 154 158 160
150 154 148 158 160
137 160 158 154 150
There are 2 middle numbers
Find the midpoint

Decimal intervals on a number line

One whole split into 10 parts makes tenths = 0.1

One tenth split into 10 parts makes hundredths = 0.01



YEAR 7 — PLACE VALUE AND PROPORTION...

FDP equivalence

@whisto_maths

What do I need to be able to do?

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

- Convert fluently between fractions, decimals & percentages

Keywords

Fraction: how many parts of a whole we have

Decimal: a number with a decimal point used to separate ones, tenths, hundredths etc.

Percentage: a proportion of a whole represented as a number between 0 and 100

Place value: the numerical value that a digit has decided by its position in the number

Placeholder: a number that occupies a position to give value

Interval: a range between two numbers

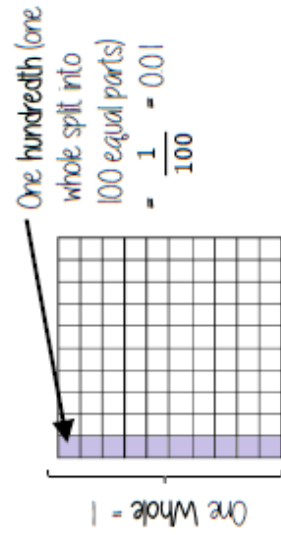
Tenth: one whole split into 10 equal parts

Hundredth: one whole split into 100 equal parts

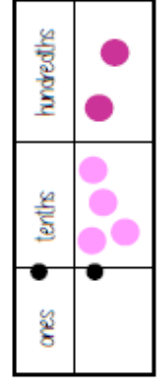
Sector: a part of a circle between two radius (often referred to as looking like a piece of pie)

Recurring: a decimal that repeats in a given pattern

Tenths and hundredths



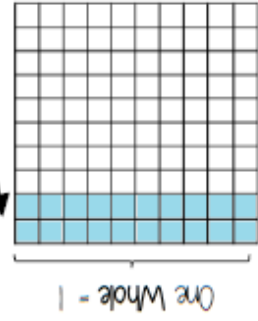
One tenth (one whole split into 10 equal parts) = $\frac{1}{10} = 0.1$



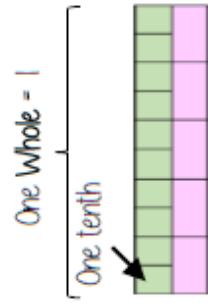
0 ones, 5 tenths and 2 hundredths

$$0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01 = 0 + 0.5 + 0.02 = 0.52$$

Fifths



Twenty hundredths



Two tenths = one fifth

One fifth (one whole split into 5 equal parts) = $\frac{1}{5} = 0.2$

On a number line



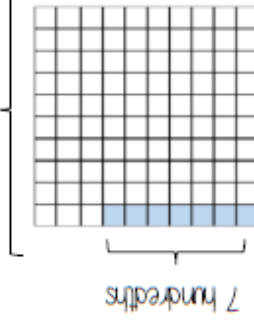
One whole — split into 10 equal parts



One tenth — split into 10 equal parts

Percentages on a hundred grid

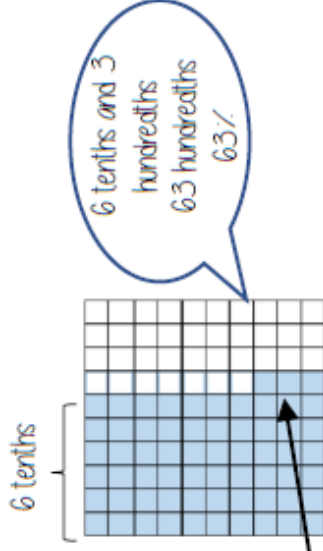
100% = a whole = 100 hundredths



7 hundredths

7 out of 100

7%



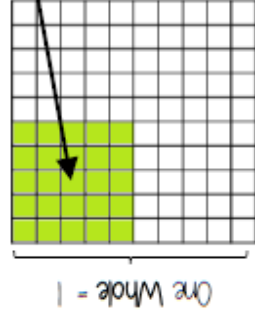
6 tenths and 3 hundredths

63 hundredths

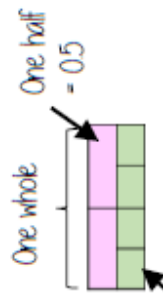
63%

Quarters

One quarter (one whole split into 4 equal parts) = $\frac{1}{4} = 0.25$



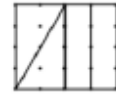
Twenty five hundredths



One half = 0.5

One quarter = 0.25

Fractions — on a diagram



The denominator is represented by EQUALLY sized parts — this is split into quarters

Simple pie charts



Split into 10 parts

= 10% = 360°

Split into 2 parts

= 50% = 180°

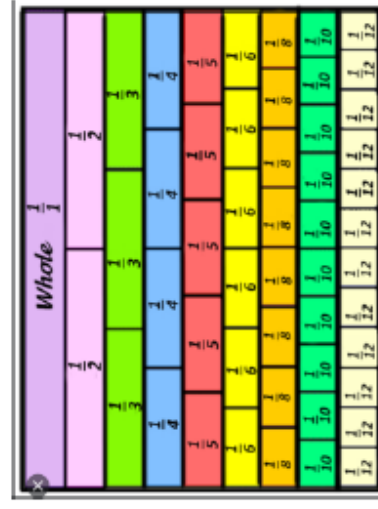
Split into 5 parts

= 20% = 72°

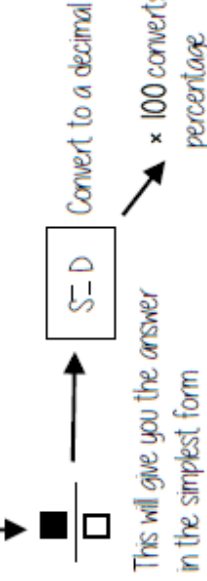
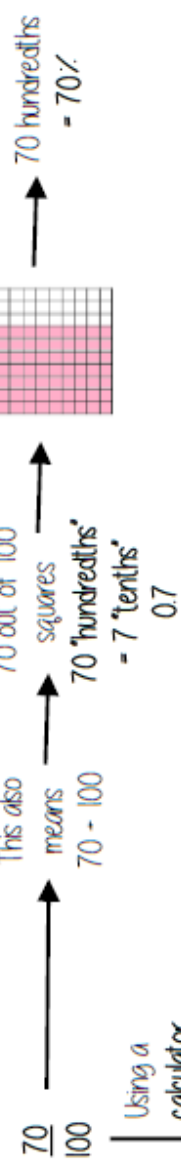
A pie chart has 360° so all FDP calculations are out of 360

Equivalent fractions

Represent equivalence with fraction walls

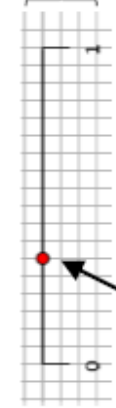


Convert FDP



Be careful of recurring decimals
e.g. $\frac{1}{3} = 0.3333333$
 $\frac{3}{10} = 0.3$
The dot above the 3

Fractions — on a number line



18 is the denominator

6 is the numerator

$\frac{6}{18} \leftarrow \frac{3}{9} \leftarrow \frac{1}{3}$

YEAR 7 — APPLICATION OF NUMBER

Solving problems with addition and subtraction

@whisto_maths

What do I need to be able to do?

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

- Understand properties of addition/subtraction
- Use mental strategies for addition/subtraction
- Use formal methods of addition/Subtraction for integers
- Use formal methods of addition/Subtraction for decimals
- Solve problems in context of perimeter
- Solve problems with finance, tables and timetables
- Solve problems with frequency trees
- Solve problems with bar charts and line charts

Keywords

Commutative: changing the order of the operations does not change the result

Associative: when you add or multiply you can do so regardless of how the numbers are grouped

Inverse: the operation that undoes what was done by the previous operation. (The opposite operation)

Placeholder: a number that occupies a position to give value

Perimeter: the distance/ length around a 2D object

Polygon: a 2D shape made with straight lines

Balance: in financial questions — the amount of money in a bank account

Credit: money that goes into a bank account

Debit: money that leaves a bank account

Addition/ Subtraction with integers



Modelling methods for addition/ subtraction

- Bar models
- Number lines
- Part/ Whole diagrams

Addition is commutative



$$6 + 3 = 3 + 6$$

The order of addition does not change the result

Subtraction the order has to stay the same

$$360 - 147 = 360 - 100 - 40 - 7$$

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction
- Show your relationships by writing fact families

Formal written methods

	H	T	O
	1	8	7
+	5	4	2

Remember the place value of each column
You may need to move 10 ones to the ones column to be able to subtract

	H	T	O
		4	2
-		2	4
			9

Addition/ Subtraction with decimals

4	.	3	8
7	.	9	0
			+

0 can be used to fill empty places with value

The decimal place acts as the placeholder and aligns the other values

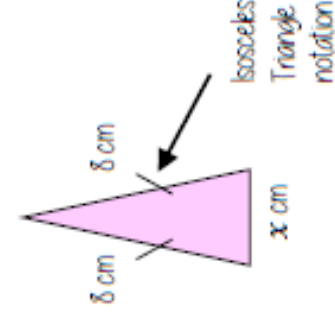
$$5.43 + \frac{8}{10}$$



If represents 1 instead of 100

Revisit Fraction — Decimal equivalence
 $5.43 + 0.8$

Solve problems with perimeter



Perimeter is the length around the outside of a polygon

The triangle has a perimeter of 25cm
Find the length of x

$$\begin{aligned} 8\text{cm} + 8\text{cm} + x\text{cm} &= 25\text{cm} \\ 16\text{cm} + x\text{cm} &= 25\text{cm} \\ x\text{cm} &= 9\text{cm} \end{aligned}$$

Solve problems with finance

Profit = Income - Costs

Credit — Money coming into an account

Debit — Money leaving an account

Money uses a two decimal place system
14.2 on a calculator represents £14.20

Check the units of currency — work in the same unit

Tables and timetables

Distance tables

	London	Cardiff	Glasgow	Belfast
	211	556	493	392
		518	177	

This shows the distance between Glasgow and London
It is where their row and column intersects

Bus/ Train timetables

	Harton	1005	1045	1130
Bridge	1024	1106	1147	
Aville	1051	1133	1205	
Ware	1117	1202	1233	

Each column represents a journey, each row represents the time the 'bus' arrives at that location

TIME CALCULATIONS — use a number line

Two-way tables

	H	T
H	HH	HT
T	TH	TT

Where rows and columns intersect is the outcome of that action

Frequency trees

60 people visited the zoo one Saturday morning

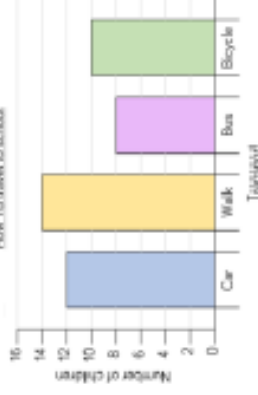
26 of them were adults. 13 of the adult's favourite animal was an elephant. 24 of the children's favourite animal was an elephant.

The overall total '60 people'

A frequency tree is made up from part-whole models. One piece of information leads to another

Bar and line charts

How Y8 travel to school



Use addition/ subtraction methods to extract information from bar charts

e.g. Difference between the number of students who walked and took the bus
Walk frequency — bus frequency

When describing changes or making predictions

- Extract information from your data source
- Make comparisons of difference or sum of values
- Put into the context of the scenario

YEAR 7 — APPLICATION OF NUMBER

Solving problems with multiplication and division

@whisto_maths

What do I need to be able to do?

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

- Understand and use factors
- Understand and use multiples
- Multiply/ Divide integers and decimals by powers of 10
- Use formal methods to multiply
- Use formal methods to divide
- Understand and use order of operations
- Solve area problems
- Solve problems using the mean

Keywords

Array: an arrangement of items to represent concepts in rows or columns
Multiples: found by multiplying any number by positive integers
Factor: integers that multiply together to get another number.
Mil: prefix meaning one thousandth
Centi: prefix meaning one hundredth
Kilo: prefix meaning multiply by 1000
Quotient: the result of a division
Dividend: the number being divided
Divisor: the number we divide by

Factors

- Arrays can help represent factors
- Factors of 10: 1, 2, 5, 10
- Factors of 4: 1, 2, 4
- Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

The number itself is always a factor

Square numbers have an ODD number of factors

Be strategic - Lay factors out in pairs to help you not to miss any

Metric conversions

Useful Conversions



Multiplication methods



Estimations: Using estimations allows a 'check' if your answer is reasonable

Less effective method especially for bigger multiplication

Multiplication with decimals

Perform multiplications as integers

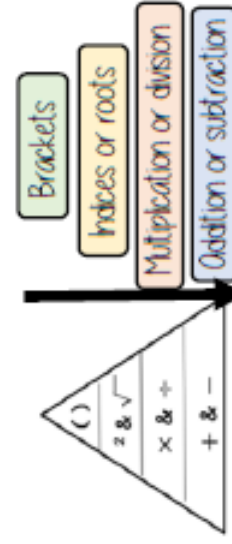
e.g. $0.2 \times 0.3 \rightarrow 2 \times 3$

Make adjustments to your answer to match the question: $0.2 \times 10 = 2$

$0.3 \times 10 = 3$

Therefore $6 \div 100 = 0.06$

Order of operations



If you have multiple operations from the same tier work from left to right

e.g. $10 - 3 + 5 \rightarrow 10 - 3 \rightarrow 7 + 5$

$$\begin{array}{r} 6 \times 4 + 8 \times 2 \\ 24 + 16 \\ = 40 \end{array}$$

Multiples



Bar models can represent by something is a multiple. E.g. 20 is a multiple of 4

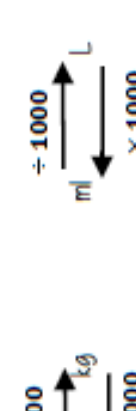
Lowest Common Multiples

LCM of 9 and 12

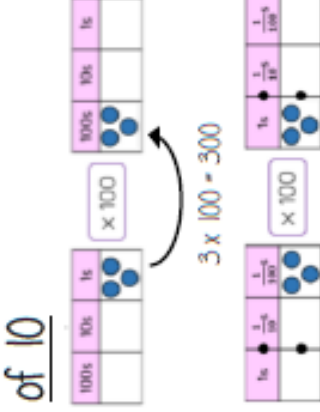
9: 9, 18, 27, 36, 45, 54

12: 12, 24, 36, 48, 60

LCM = 36



Multiply/ Divide by powers of 10



Repeated multiplication and division by powers of 10 is commutative

$\div 10$ then $\div 10 \rightarrow \div 100$

Division methods

Short division: $3584 \div 7 = 512$

Complex division: $\div 24 = \div 6 \div 4$

Break up the divisor using factors

Division with decimals

The placeholder in division methods is essential — the decimal lines up on the dividend and the quotient

$24 \div 0.02 \rightarrow 24 \div 0.2 \rightarrow 240 \div 2$

All give the same solution as represent the same proportion

Multiply the values in proportion until the divisor becomes an integer

Area problems

Rectangle

Base x Perpendicular height

Parallelogram/ Rhombus

Base x Perpendicular height

Triangle

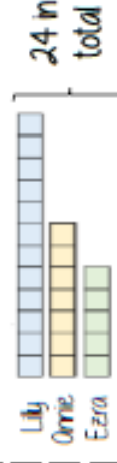
$\frac{1}{2} \times$ Base x Perpendicular height

A triangle is half the size of the rectangle it would fit in

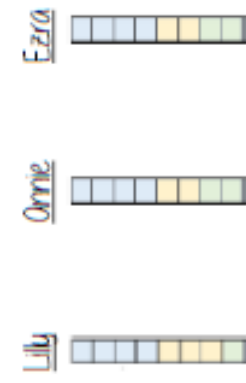
Mean problems

Mean — a measure of average
 It gives an idea of the central value

Lilly, Omie and Ezra have the following cubes



Finding the mean amount is the average amount each person would have if shared out equally



The mean number of blocks would be 8 each

MUSIC

Conducting Pulses and Beats

B. Time Signatures

A **TIME SIGNATURE** tells us how many beats (and what type of beats) there are in each **BAR** of music and is made up of two numbers at the beginning of a piece of music.



Top Number = HOW MANY BEATS

Bottom Number = TYPE OF BEAT

2/4 =

TWO CROTCHET beats per BAR

e.g. MARCH 3/4 = THREE CROTCHET beats per BAR

e.g. a **WALTZ** 4/4 = **FOUR CROTCHET** beats per **BAR**

Bottom Numbers:
2 = Minim 4 = Crotchet 8 = Quaver

BARS AND BARLINES

Diagram of a single strand of DNA. The strand is represented by a horizontal line with a vertical line segment at the right end. The left end is labeled '5' end' and the right end is labeled '3' end'. A label 'PO4' with an arrow points to the vertical line segment at the right end, indicating the phosphate group attached to the 5' carbon of the sugar-phosphate backbone.

NOTATION – A way of writing down and recording rhythms using boxes



D. Conducting Pulses and Beats

Conducting a 3-beat
Pulse/Beat (e.g. a
Waltz)

3 beat rhythm	X		X		X		X		X
2 beat rhythm	X			X			X		

Note Name

Note Symbol

Note Value

Semibreve

O

4 beats

Minim

2 beats

Crotchet

1 beat

Quaver



$\frac{1}{2}$ of a beat

Pair of Quavers

$2 \times \frac{1}{2} \text{ beats} = 1$

RELIGION & WORLD VIEWS

Spring Term 1 Homework 1— What is Buddhism?	⇒ The symbol of the Tri-Ratna reminds Buddhists what is truly important. The three colours represent: Buddha, Dhamma (teachings) Sangha (community). The lotus flower represents enlightenment. The circle represents the eternity of life's cycle and the universe. Fire is present for protection and cleansing. ⇒ Buddhists view life as a cycle of birth, death and rebirth. Meaning one soul can be born many, many times in different bodies/lives. This is referred to as samsara. ⇒ If a person gains Nirvana they can break out of the cycle of rebirth, to a place of eternal peace. ⇒ In images of Buddha his face often looks calm and serene, to show that he has found this peace.	Key Vocabulary Tri-Ratna —the three refuges/ jewels; Buddha, dhamma and sangha. Nirvana — a state of eternal peace and wisdom beyond human understanding.
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Spring Term 1 Homework 2— Who was the Buddha?	⇒ Siddhartha Gautama (Buddha) was a prince, born in Lumbini (Nepal/India). He was kept in the palace and sheltered from seeing any suffering or death until he was 29 years old. ⇒ Contextually, Siddhartha was born into a time of great inequality in India and everyone was suffering due to poverty, war, violence, corruption and greed. ⇒ Dissatisfied with this, Siddhartha left the palace when he witnessed the FOUR SIGHTS: old age, sickness, death and then a seeker (holy man) who told him the only thing that doesn't die or get old/sick is truth. He decided to leave his comfortable life to see if he could find the truth about suffering.	Buddha — a person who finds enlightenment. Enlightenment—to have the mind awoken to the ultimate truth. Truth—the reality of how the universe works
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