

# Welcome to BBA!



## Summer induction knowledge organiser homework

Subject	Page
English	4-7
Maths	8-11
Science	12-15

This homework is designed to support your transition to the year 7 curriculum for core subjects.



We all make exceptional things happen everyday

Academically | Professionally | Socially | Personally | Within the Community

# How to complete my homework



Green and Red Pen



Optional: Timer: Set for 20 minutes

## Instructions: How to complete my homework

1. For each homework you will be asked to look at a particular section of your Knowledge Organiser. Set a timer for **20 minutes**.



2. **Read** a small section of the Knowledge Organiser



3. **Cover up** the information so you are unable to read/see it.







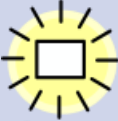

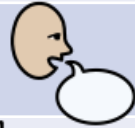


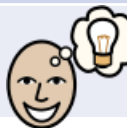
4. **Write:** In your knowledge organiser answer section.



5. **Check:** the Knowledge Organiser and the answer section to see if you got it right.

6. **Complete** the other knowledge questions. Please stop if you run out of time.



Key vocabulary		Definition	In English at BBA you will need to learn	
1	<b>Empathy</b> 	The ability to share another person's feelings and emotions as if they were your own.	<b>Metaphor</b> A figure of speech that compares two different things to show their similarities by insisting that they're the same. <b>Example: "All the world's a stage"</b>	
2	<b>Identity</b> 	Your identity is who you are.		
3	<b>Representation</b> 	If a group or person has representation in a group, someone else might make decisions on their behalf.	<b>Motif</b> A recurring object in a story that holds some deeper meaning. <b>Example: If a character is carrying a suitcase with them always it might be symbolic of them taking a long journey.</b>	
4	<b>Consumerism</b> 	The belief that it is good to buy and use a lot of goods.		
5	<b>Renaissance</b> 	Something that becomes popular or successful again after a time when people were not interested in it.	<b>Foreshadowing</b> The technique of hinting at future events in a story using subtle parallels, usually to generate more suspense or engage the reader's curiosity.  <b>Example: A writer might describe a gun right at the start of the book which is then used to kill the main character at the end.</b>	
6	<b>Prejudice</b> 	An unreasonable dislike of a particular group of people or things.		
7	<b>Rhetoric</b> 	The skill or art of using language effectively.		
8	<b>Exposition</b> 	An idea or theory is a detailed explanation or account of it.		
9	<b>Resistance</b> 	Resistance to something such as a change or a new idea is a refusal to accept it.		
10	<b>Ethos</b> 	A set of ideas and attitudes that is associated with a particular group of people.		



## Key authors that we will be studying



### ***Malala Yousafzai***

- Malala Yousafzai was born on July 12, 1997, in Pakistan.
- At a young age, she became a campaigner for girls' education, speaking out against the Taliban's **efforts to restrict schooling for girls in her region.**
- In 2012, Malala **survived an assassination** attempt by the Taliban, which led to her becoming a global symbol for girls' rights to education.
- She wrote a **memoir** called "I Am Malala" and became the youngest-ever Nobel Prize laureate in 2014.



### ***Langston Hughes***

- Langston Hughes was born on February 1, 1902, in Joplin, Missouri, **America.**
- He became a prominent figure of the **Harlem Renaissance**, a cultural movement celebrating **African American** culture, art, and literature in the 1920s.
- Hughes is known for his poetic works which explore themes of **identity, struggle, and resilience.**
- Throughout his life, Hughes wrote poetry, plays, essays, and novels that highlighted the **experiences of African Americans.**



### ***Renee Watson***

- Renée Watson is an acclaimed **author, educator, and activist** based in New York City.
- She was born and raised in Portland, Oregon, and **draws inspiration from her experiences growing up as a Black woman.**
- Renée's literary works often focus on themes of **identity, belonging, and social justice**, particularly highlighting the experiences of young Black girls and women.



Question	Answers
1. Write an example of something that makes up your <b>identity</b>	<b>Part of my identity is....</b>
2. What themes did <b>Langston Hughes</b> write most of his poetry about?	
3. Explain in your own words what a <b>motif</b> is. Give an example of a <b>motif</b> from a book or film you know.	
4. Read the definition of <b>consumerism</b> . What might be the problems with being <b>consumerist</b> ?	
5. What is <b>foreshadowing</b> ?	
6. What did <b>Malala Yousafzai</b> want to campaign for?	
7. What might <b>Renee Watson</b> and <b>Langston Hughes</b> ' stories have in common?	
8. Why do you think <b>representation</b> is important?	
9. Explain in your own words what a <b>metaphor</b> is?	
10. Why do you think having <b>empathy</b> is important?	



Question	Answers
1. Write an example of something that makes up your <b>identity</b>	<b>Part of my identity is....</b>
2. What themes did <b>Langston Hughes</b> write most of his poetry about?	Langston Hughes wrote most of his poetry about identity and resilience, it focussed mostly on the experiences of African Americans.
3. Explain in your own words what a <b>motif</b> is. Give an example of a <b>motif</b> from a book or film you know.	A motif is an object or thing that holds a deeper meaning in a story. An example of this could be a character who takes a suitcase with them wherever they go, this might be symbolic of a long journey or a metaphor for the experiences they have had in life.
4. Read the definition of <b>consumerism</b> . What might be the problems with being <b>consumerist</b> ?	Consumerism is the belief that it is good to buy and use lots of things. Consumerism might be problematic because it could create divides in society, contribute to pollution and high levels of waste and cause people to fall into debt trying to keep up with the latest trends.
5. What is <b>foreshadowing</b> ?	Foreshadowing is the technique of hinting at future events that will happen in the story, this can often make the reader more curious.
6. What did <b>Malala Yousafzai</b> want to campaign for?	She was a campaigner for girls' education, she spoke out against the Taliban's efforts to stop girls from being able to go to school.
7. What might <b>Renee Watson</b> and <b>Langston Hughes</b> ' stories have in common?	Renee Watson and Langston Hughes are both inspired to write stories that show the themes of identity, resilience and belonging.
8. Why do you think <b>representation</b> is important?	Representation is important because people may need someone to believe in them and speak on their behalf if they are unable to.
9. Explain in your own words what a <b>metaphor</b> is?	A metaphor is where a writer uses other words or ideas to describe something in order to create a stronger image in the mind of the reader.
10. Why do you think having <b>empathy</b> is important?	Empathy is when you are able to share or understand another persons' feelings or emotions as if they were your own.



# NUMBER TYPES and SPECIAL NUMBERS

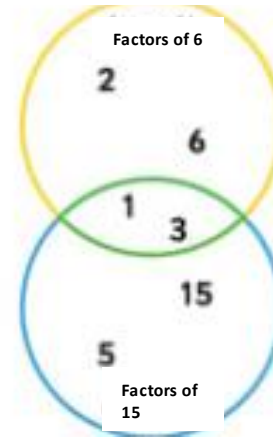
## Factors, Multiples and Primes

Factors, multiples and primes are different types of numbers.

- A **factor** is a number which divides into another number exactly with no remainders.
- A **multiple** of a number is a number in its times table.
- A **prime number** is a number that only has two factors, 1 and itself.

**Common factors**  
factor of 2 or more numbers.

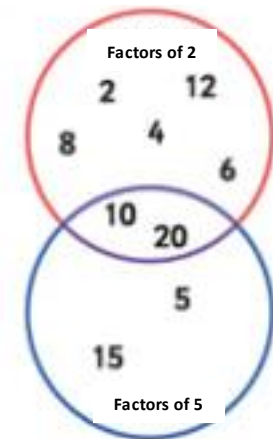
E.g 3 is a common factor of 6 and 15



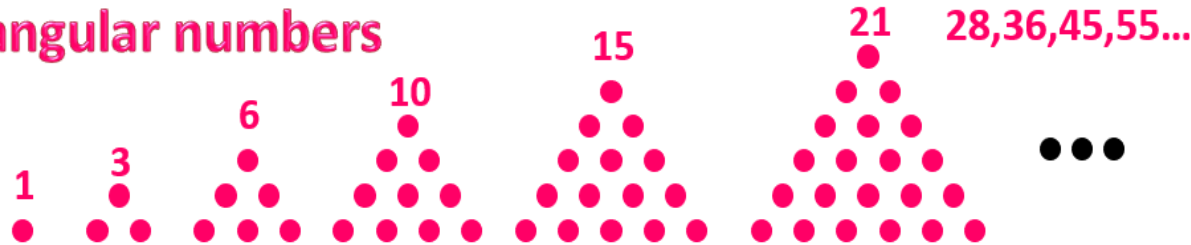
**Common multiples**

a multiple of 2 or more numbers.

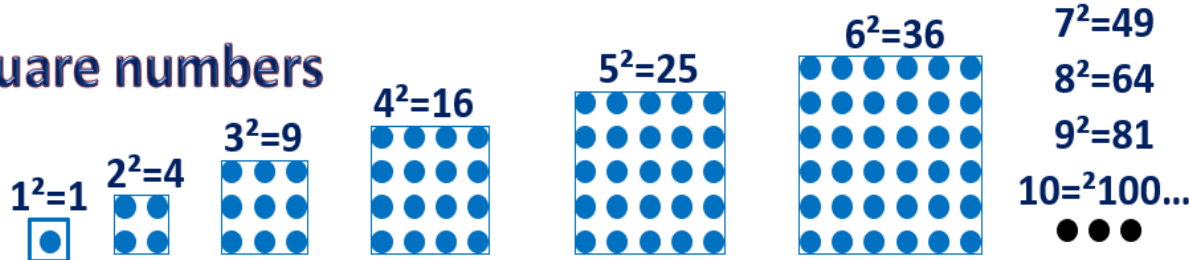
E.g 10 is a common multiple of 2 and 5



### Triangular numbers



### Square numbers



Prime numbers and composite numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

prime number

composite number

## UNDERSTANDING FRACTIONS



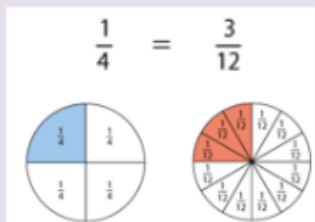
$$\frac{7}{4}$$

Improper fraction



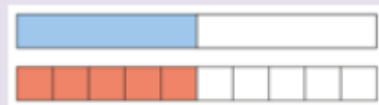
$$2 \frac{1}{2}$$

Mixed number



$$\frac{1}{4} = \frac{3}{12}$$

Equivalent fractions

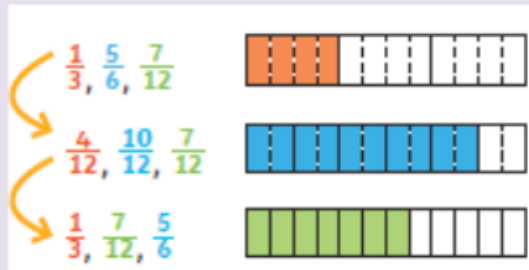


$$\frac{1}{2} = \frac{5}{10}$$

By multiplying or dividing the numerator and denominator by the same number, the new fraction will be an equivalent fraction

$$\frac{1}{2} \xrightarrow{\times 5} \frac{5}{10}$$

$$\frac{1}{4} \xrightarrow{\div 5} \frac{3}{12}$$



Compare and order by using common denominators

### Convert between improper fractions and mixed numbers



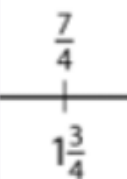
Improper to mixed number

Divide the numerator by the denominator



$$7 \div 4 = 1 \text{ r } 3$$

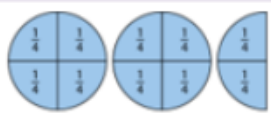
$$= 1 \frac{3}{4}$$



Mixed number to improper

There are 4 parts in the whole

$$2 \text{ whole} = \frac{8}{4} + \frac{2}{4} = \frac{10}{4}$$



<b>numerator</b>	Top number in a fraction. Shows how many parts we have
<b>denominator</b>	Bottom number in a fraction. Shows how many equal parts in the whole
<b>common denominator</b>	When the denominators of two or more fractions are the same
<b>multiple</b>	The result of multiplying a number by an integer
<b>equivalent fractions</b>	Fractions that have the same value but look different
<b>proper fraction</b>	The numerator is less than the denominator – value is less than 1 whole
<b>improper fraction</b>	The numerator is greater than the denominator – value is greater than 1 whole
<b>mixed number</b>	A whole number and a fraction part





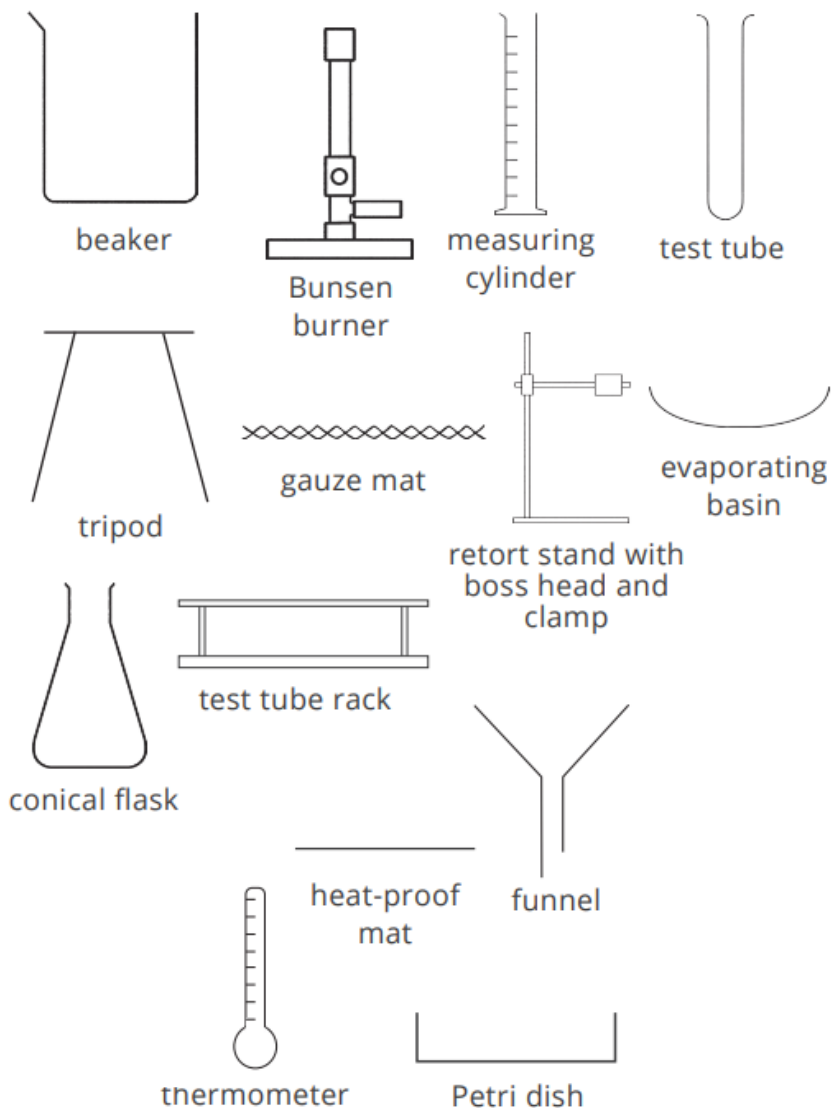
Question	Answers
Read the Question	<b>Choose the correct answer</b> to match each question (they are not in the right order)
1. A fraction is made up of two parts. What are their names?	A. The <b>Multiples</b> of a number are all the numbers in its times table. For example the multiples of 3 are 3, 6, 9, 12 .....
2. What does the denominator represent?	B. 1, 4, 9, 16 and 25 are the first five <b>square numbers</b>
3. What are the <b>Factors</b> of a number?	C. To test if a fraction can be simplified you need to check if the numerator and denominator have any common factors.
4. What are the <b>Multiples</b> of a number?	D. A <b>Mixed Number</b> is a number which has a combination of <b>wholes and fractions</b> – for example $3\frac{1}{2}$
5. What is a <b>Prime Number</b> ?	E. The two parts of a fraction are called the <b>Numerator</b> and the <b>Denominator</b> .
6. What type of numbers are in this list 1, 4, 9, 16, 25	F. Fractions equivalent to $\frac{1}{4}$ are $\frac{2}{8}$ , $\frac{3}{12}$ and $\frac{4}{16}$ (can you name two more?)
7. How do you test to see if a fraction can be simplified?	G. The denominator represents the number of <b>equal parts</b> a whole has been divided into.
8. These are the first five numbers from which list? 1, 3, 6, 10, 15	H. A <b>Prime Number</b> is a number with exactly two factors, 1 and itself.
9. What is meant by the term <b>Mixed Number</b> ?	I. The <b>factors</b> of a number are the numbers which divide into it exactly with no remainder. For example: 12 can be made by multiplying $1 \times 12$ , $2 \times 6$ , $3 \times 4$ so the factors are 1, 2, 3, 4, 6 and 12
10. Give three examples of fractions which are <b>equivalent</b> to $\frac{1}{4}$	J. 1, 3, 6, 10 and 15 are the first 5 <b>Triangle numbers</b> .



Question	Answers
Answers	<b>Check the answers</b>
1. A fraction is made up of two parts. What are their names?	E. The two parts of a fraction are called the <b>Numerator</b> and the <b>Denominator</b> .
2. What does the denominator represent?	G. The denominator represents the number of <b>equal parts</b> a whole has been divided into.
3. What are the <b>Factors</b> of a number?	I. The <b>factors</b> of a number are the numbers which divide into it exactly with no remainder. For example: 12 can be made by multiplying $1 \times 12$ , $2 \times 6$ , $3 \times 4$ so the factors are 1, 2, 3, 4, 6 and 12
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5. What is a <b>Prime Number</b> ?	H. A <b>Prime Number</b> is a number with exactly two factors, 1 and itself.
6. What type of numbers are in this list 1, 4, 9, 16, 25	B. 1, 4, 9, 16 and 25 are the first five <b>square numbers</b>
7. How do you test to see if a fraction can be simplified?	C. To test if a fraction can be simplified you need to check if the numerator and denominator have any common factors.
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9. What is meant by the term <b>Mixed Number</b> ?	D. A <b>Mixed Number</b> is a number which has a combination of <b>wholes and fractions</b> – for example $3 \frac{1}{2}$
10. Give three examples of fractions which are <b>equivalent</b> to $\frac{1}{4}$	F. Fractions equivalent to $\frac{1}{4}$ are $\frac{2}{8}$ , $\frac{3}{12}$ and $\frac{4}{16}$ (can you name two more?)



## Science Equipment



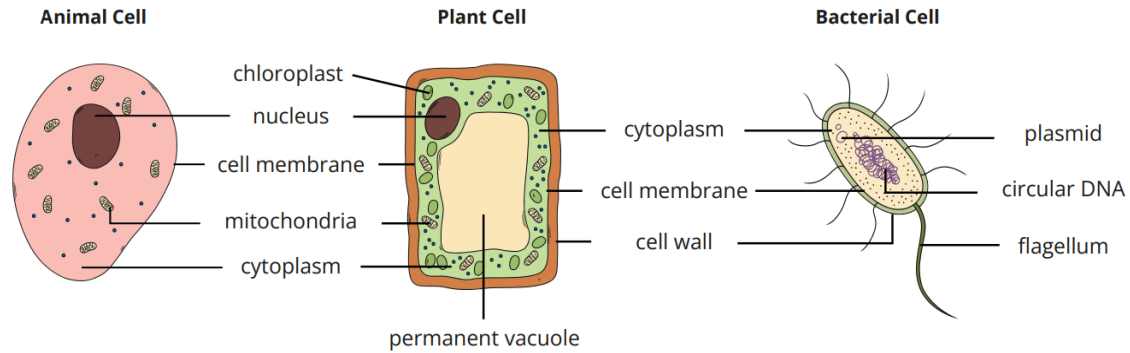
Equipment	What do we use it for?
<b>Beaker</b>	Measuring and holding liquids
<b>Bunsen burner</b>	Heating substances in the laboratory
<b>Measuring cylinder</b>	Measuring accurate volumes of liquids
<b>Test tube</b>	Used for holding small amounts of substances
<b>Tripod</b>	A three-legged stand used for holding containers above a Bunsen burner
<b>Gauze mat</b>	Placed on top of the tripod to support other equipment and spread the heat of the Bunsen flame
<b>Retort stand, boss and clamp</b>	Used to hold equipment at a height above the desk
<b>Evaporating basin</b>	Used for the evaporation of solutions
<b>Conical flask</b>	Used for mixing chemicals
<b>Test tube rack</b>	Holds test tubes upright
<b>Funnel</b>	Easy pouring of liquids from one container to another without spilling
<b>Heat proof mat</b>	Protects tables and surfaces from heat
<b>Thermometer</b>	Measures the temperature of substances
<b>Petri dish</b>	A shallow dish used for growing microorganisms

**Use a ruler and a pencil to draw all diagrams in science**



**Hazard Symbols Glossary**

Symbol	Meaning	Description
	corrosive	Could burn the skin and damage the eyes. Avoid breathing in vapours.
	explosive	May explode when dry or exposed to heat or flames.
	flammable	May catch fire when exposed to oxygen and a heat source.
	gas under pressure	Contains compressed, liquified or dissolved gas. May explode if heated.
	harmful to the environment	Could cause damage to animal and plant life if released into water systems.
	moderate health hazard	Contact with the skin, swallowing or inhalation may cause short-term health effects such as irritation, drowsiness or dizziness.
	oxidising	May cause or intensify a fire by increasing the concentration of oxygen in the air.
	serious health hazard	Long-term exposure may result in serious or prolonged health effects or death.
	acute toxicity	Short-term exposure, such as contact with skin, swallowing or inhalation, could cause illness or death.



**The components of a cell each have different functions.**

Sub-Cellular Structure	Function
nucleus	Controls the activities of the cell. It contains genetic material (DNA), which is packaged into structures called chromosomes.
circular DNA	The DNA of bacteria found free in the cytoplasm.
mitochondria	Contain the enzymes needed for aerobic respiration, which releases energy for the cell.
chloroplasts	Contain a pigment called chlorophyll, which absorbs light to provide energy for photosynthesis.
cell wall	Helps to strengthen the cell and provides support for the plant.
cell membrane	Controls the movement of substances into and out of the cell.
cytoplasm	A jelly-like substance that fills the cell, where most chemical reactions occur.
flagellum	A tail-like structure that allows bacteria to move around.
permanent vacuole	Filled with cell sap to keep the cell rigid to support the plant.
plasmids	Plasmids are small rings of DNA that code for specific features, such as antibiotic resistance.



Question	Answers
1. What should you always use to draw scientific diagrams in science?	
2. Draw the scientific diagram for a funnel	
3. Draw the scientific diagram for a beaker	
4. Draw the scientific diagram for a funnel	
5. What are thermometers used for in science?	
6. What are petri dishes used for in science?	
7. Why are hazard symbols important in science?	
8. Which hazard symbol means 'may catch fire when exposed to oxygen and a heat source'?	
9. What does a 'corrosive' hazard symbol warn us about?	
10. Name one structure that a bacterial cell has that a plant and animal cell do not have	
11. Where in a plant and animal cell controls the activities of the cell and contains the DNA?	
12. What is the role of the cell membrane?	



Question	Answers
1. What should you always use to draw scientific diagrams in science?	A ruler and a pencil
2. Draw the scientific diagram for a funnel	See diagram on page 9
3. Draw the scientific diagram for a beaker	See diagram on page 9
4. Draw the scientific diagram for a funnel	See diagram on page 9
5. What are thermometers used for in science?	Measuring the temperature of a substance
6. What are petri dishes used for in science?	A shallow dish used for growing microorganisms
7. Why are hazard symbols important in science?	To warn us about the potential hazards of a substance
8. Which hazard symbol means 'may catch fire when exposed to oxygen and a heat source'?	Flammable
9. What does a 'corrosive' hazard symbol warn us about?	A substance that could burn the skin and damage the eyes
10. Name one structure that a bacterial cell has that a plant and animal cell do not have	Any one from: flagella, plasmid, circular DNA
11. Where in a plant and animal cell controls the activities of the cell and contains the DNA?	Nucleus
12. What is the role of the cell membrane?	To control which substances enter and leave the cell