THE BURGESS HILL ACADEMY

HOME LEARNING PACK

YEAR 8

Believe in your best

CONTENTS

HOW TO USE THIS BOOKLET

In this booklet you will find a menu of tasks related to the subjects and topics that you study. There are opportunities for you to revise material you have previously studied, practice skills that you have learned in class and sometimes learn something new.

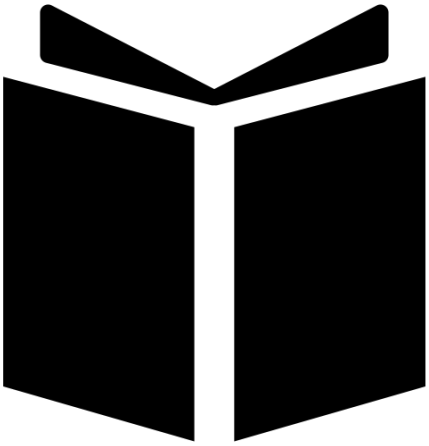
As a minimum you will a pen and some paper to complete these tasks. If you need these, please collect from the reception desk at the academy. For some of the mind-mapping tasks you might wish to use coloured pens or pencils but they are not essential. Some tasks may ask you to create packs of flashcards. You can use any kind of paper or card for this but don't worry if you don't have enough, just choose another task.

While you are not in school **you should follow your normal school timetable** and complete an hour of work for each hour you would normally be studying that subject in school. You may find that, without the support of your teacher you complete tasks more slowly than you would do in a lesson and that is absolutely fine.

If you get really stuck on something, move on to the next task and/or seek help from the internet, a parent/guardian or by e-mailing or phoning your teacher if possible.

ENGLISH LITERATURE

Complete the tasks on the following pages.



Year 8 workbook.

Lesson 1

This term you are looking at the literary heritage. This means you will be learning about important stories from different periods of history.

You will have started looking at the story of Beowulf in your English lessons.

Beowulf is the oldest epic poem in the English language. It was **written** in **Old English** (Anglo-Saxon) sometime in the 11th century. The actual story originated between 680 and 839 A.D., when it was told orally and passed down.

Task 1:

Read the story of Beowulf. If there are any words you don't understand look up what they mean so you can understand the story.

The Tale Of Mighty Beowulf

Here, let me tell you of the time Hrothgar,
king of Denmark, built a hall in his castle.
When it was complete, he named it Heorot.
Heorot was a hall where the people in the palace
ate supper and then slept when it was time for bed.

Nearby there lived a beast who lurked in the dark.
He was called Grendel, and was grand and gruesome.
Grendel abhorred Heorot (no one knows why);
one night he went to the hall, broke through a wall,
and found many men to feast on. Grendel growled
ferocious and loud, and his red eyes glared in the dark.
The noise awoke all who slept in the hall
and the knights were poised for battle. But the beast
Grendel showed his horrible teeth and grabbed
the first knight he found and gnashed him
with one big bite. The monster roared
and everyone ran, leaving Grendel loudly laughing
as he went back to his lair where he soundly slept.

The monster managed to raid Heorot for eleven years.
Finally it became clear King Hrothgar needed help
killing the beast in battle, because his warriors were dying
one by one in this gruesome Grendel War. The Danes
prayed to the gods to keep the monster from preying on them.

Their prayers were answered when a ship sailed to their shores.
Beowulf was aboard the boat, and he came from across the sea
to help Hrothgar from the terror of Grendel's teeth. Beowulf
announced himself to Hrothgar, and the King welcomed him
with open arms. Hrothgar fed his guest a feast in his hall,
and Beowulf announced he planned to fight Grendel with his fists.
Unferth, Hrothgar's bravest knight, questioned Beowulf's skill.
Unferth asked, "Are you the legendary Beowulf, who took part
in a swimming contest with a friend in the ocean? As I have heard
the story, you both challenged each other and the sea for seven nights,
swimming as far out as you could, beating the cold and angry waves,
but in the end your friend won the race, you fell behind humiliated."
Beowulf bawked. "You're right brave Unferth, I am that Beowulf.
But you have heard wrong. For five days and nights
we swam shoulder to shoulder against those cold and angry waves.

I was pulled under by a sea-monster. Armed with a sword,
I killed the sea-monster and eight others after it. It was a hard fight
under water with those terrible beasts, and I was weakened
but I swam to the surface and made it to the other shore.
Not since my fight with the sea-monsters have my people perished
at the mouths of them. I lost, but I was honored, not humiliated."

When the feast was over, it was bedtime for the brave Beowulf. He laid in bed awake, waiting for Grendel to strike. Grendel stormed through the stone wall, grabbed a startled soldier with his cruel claws and bit him to the bone. The monster moved toward Beowulf, and lifted him out of bed.

But before the beast could open its mouth, Beowulf put Grendel in an arm lock no man or beast had ever witnessed, and the monster let out a horrible howl. The two tumbled about the hall until the sound of the scream from the loser lifted everyone out of their beds. The monster had been manacled from a man stronger than him, and the beast ran recklessly back to his den to die. Grendel's arm was torn off by Beowulf's grasp and he could not live much longer. Beowulf picked the arm off the floor, evidence of the fight, and stood among his men victorious.

The next day word got around that the beast had been beaten by Beowulf. The damaged wall in the hall was repaired, and Hrothgar gave Beowulf gifts for his courage. A victory feast was served for supper, and everyone was the happiest they'd been since Grendel started running his raids. That night as they settled in for sleep, it felt great to not worry about Grendel again. Beowulf went to bed elsewhere. But as soon as everyone was asleep and silence swept the night, a second terror lurked in the moonlight.

Grendel's mother had come to Heorot to avenge her son's death. She was just as gruesome as Grendel. The sleeping were startled awake, and they all went for their swords. Grendel's mother killed a counselor, Hrothgar's right-hand man. She grabbed Grendel's arm, gave an angry growl, and disappeared.

After her attack, Beowulf was brought to Hrothgar's hall. The crowd in the castle knew Grendel's mother lived under the mere, so Beowulf decided to go to her instead of waiting for her to come back to him. He brought a boat to the wet mere, even though the waters were infested with all sorts of beasts. He took a crew with him, and

on their way, through the dark moor, they found her footprints,
and followed them to the water.

In the water and on the rocks
they found reptiles of all kinds: they found snakes and sea-dragons,
monsters and wild things. They waded through them
to where Grendel's mother lived below the waters.
Beowulf wore a wet suit and prepared for battle.
A special sword was given to him by Hrothgar's men,
and he placed it in his holster. Beowulf told the men
to wait for him; he would be back victorious. With that,
he dove into the deep waters, and descended to the monster's den.

Grendel's mother sensed Beowulf approaching.
She waited for him, hungry. When he came close,
she captured him and dragged him down to her den.
Beowulf searched for the special sword,
heaved it out of his holster, and struck his opponent.
But the sword failed to do damage. The blade broke
off the handle and Beowulf was left using his two bare
hands. He attempted another arm lock, but the beast's
strength was too brutal. Beowulf managed to break free,
and fought bare-handed against the furry beast. But Beowulf's
bare hands were no match for the monster's might.
And for a moment he thought he had lost. Right then,
Beowulf saw a mighty weapon, a sword of some sort,
hanging on the cave wall, glistening with gold.
He raised the heavy sword and with one swift blow
Beowulf killed the beast. As he stopped to rest, he realized
Grendel himself laid in the lair, lifeless. His arm
was placed neatly next to him by his mother. Beowulf
grabbed Grendel's arm, and swam back to the surface
of the water, leaving his special sword in the lair.

Beowulf returned to Hrothgar and told the king Heorot
was free once again of those monsters in the night.
Hrothgar thanked Beowulf, praised his strength
and courage, but warned him that his strength and courage
could also endanger his life. "Do not give way to pride,"
said Hrothgar to Beowulf, "your strength is in bloom,
but blossoms only a short while. Grendel was king
of this country for eleven years, even though

I wore the crown, because I didn't bring my pride to battle
against him. I knew better. I laid low instead, and prayed
for someone with courage to fight him. The day you arrived
on my shores I knew my prayers were answered.
I say this because you are fit to be King, and will be, someday."
Beowulf thanked him for the fatherly advice, and told him
it was time to sail the seas again, to go back home.

He gathered his men, prepared his ship, and said goodbye
to Hrothgar and Heorot. When Beowulf and his ship arrived
at shore, he was welcomed at once by his Uncle Hygelac.
Hygelac was king of this country, ruler of the Geats.
He ruled the Geats well, and years later when Hygelac
died of old age, Beowulf himself became king.
For fifty years Beowulf ruled his kingdom well,
but in his old age, Beowulf was faced with another terror
of the night.

A dragon, which lived in a cave on a nearby cliff,
awoke angry, because someone came into his cave
while he soundly slept, and stole some treasure
off his treasure pile. It happened not once, but twice.
The dragon found footprints the second time,
and he flew over the kingdom like a living torch,
burning buildings down to their bones.
Beowulf believed the dragon performed these deeds
because of something he had done. So the king
decided to fight the dragon himself. He gathered
an army of men and made for the cave, the dragon's den.

With his men waiting outside, Beowulf entered
the cave and called for the dragon, who responded
with a breath of fire. Beowulf, the old king,
raised his shield and sword and the two battled.
The heat inside the cave made it hard for the old king
to focus. He stabbed the dragon's scales with his sword,
and the dragon cried in pain. But the puncture
wasn't deep enough, and it upset the dragon even more.
Outside the army heard its cry, and all but one ran
for safety. Only Wiglaf ran inside the cave to help
Beowulf, who was fighting without his sword.
The dragon turned and sunk its teeth into Beowulf's neck.
The dragon focused on Beowulf so the battle was easier
for young and strong Wiglaf, who gave the dragon
a deadly blow. The dragon cried in pain once again,
blew his last fiery breath, and fell hard on the floor.

Wiglaf ran to Beowulf's aid, and attempted to treat his
wound.
"Wiglaf," said Beowulf, "bring me some treasure, so I can see
what I've been fighting for." Wiglaf ran
around the fallen dragon,
and fetched a piece of treasure, something
simple he could carry.
Beowulf's eyes fell on it. "Ah," he said,
"Wiglaf, I name you
the new king of the Geats, you have shown
your courage. I will die
of my wound." And soon, the old king closed
his eyes,
breathed his last breath, and peacefully
passed away.

Task 2: Answer these questions:

1. Do you think Beowulf is a hero? Why?

_____
_____
_____
_____

2. Find three quotations (lines from the story) to show Beowulf is a hero.

_____
_____
_____
_____
_____
_____
_____

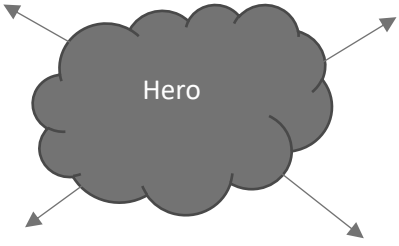
3. What do you think is the main message of the story?

_____
_____
_____
_____
_____
_____
_____

Lesson 2:

Starter Activity:

Mind-map adjectives you would use to describe a hero:



Task: Imagine you are Beowulf. Write a short diary entry from the point of view of Beowulf after the day he fought Grendel.

You can use these sentence starters to help you:

- I was asked to come to....
- A monster named Grendel was...
- It was huge and looked like....
- I fought bravely as I.....
- After the fight....

Dear diary,

Task 2: If you had to create your own hero, what would they be like? What would they look like? What would their personality be? Write a brief description of your own hero below:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Lesson 3:

Starter activity: A myth is a traditional story, especially one concerning the early history of a people. Do you think the story of Beowulf is a myth? Why?

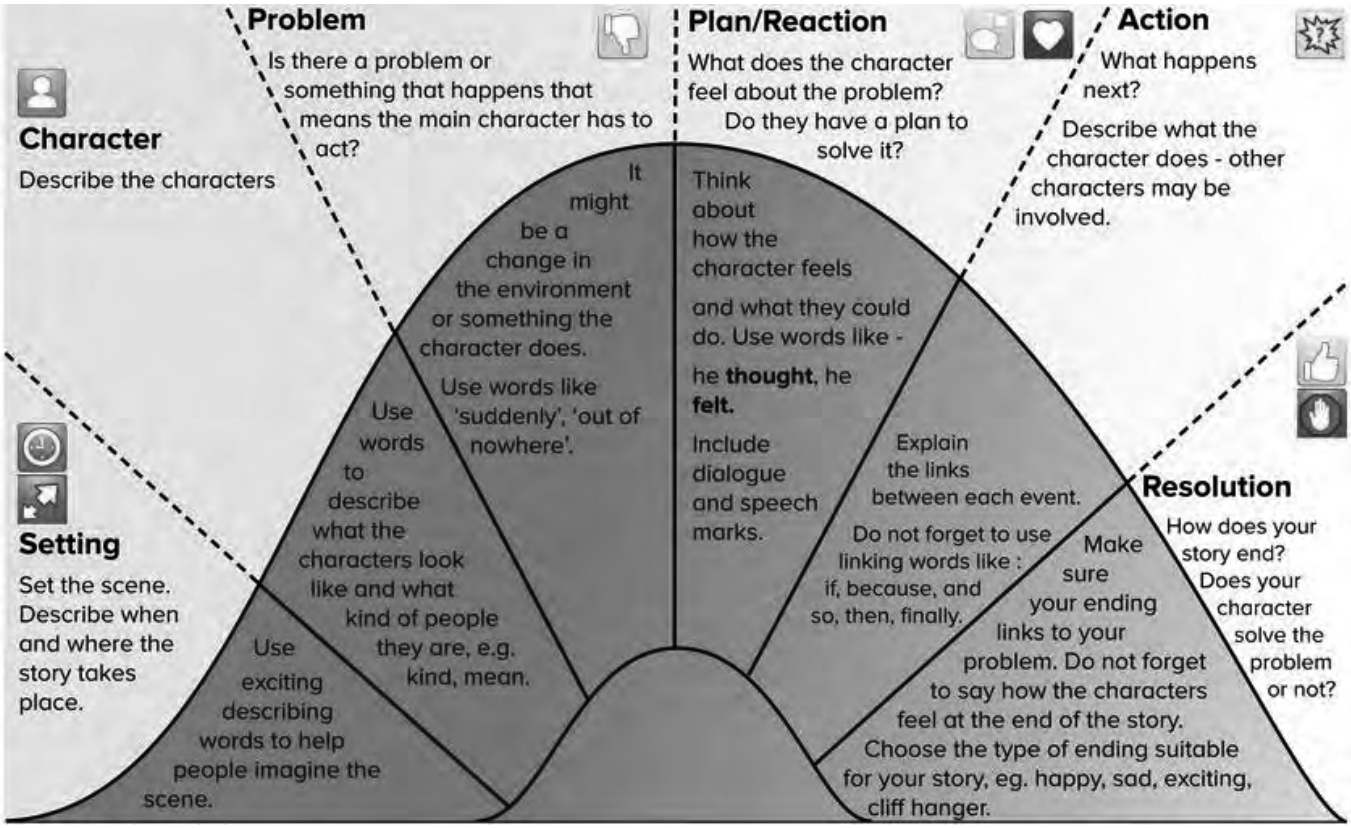
_____
_____
_____

These are the key features of a myth:

- **Characters** are often non-human and are typically gods, goddesses, supernatural beings or mystical "fist people."
- **Setting** is typically ancient, or prior to the time when actual records were kept. Myths are typically set in a world very similar to our own, but with supernatural monsters or areas.
- Myths have sense of **mystery**, **or the unknown**.
- **Myths are often metaphoric**—that is, myths are created to comment or analyze a real world event. Real world questions that myths often attempt to answer are:
  - Why are we here?
  - Who are we?

– Why are we living? What is our purpose?

Task: Use the story mountain to plan your own myth.



Now have a go at writing your own myth!

Remember to include:

- Interesting vocabulary
- Clear paragraphs
- Correct punctuation (full stops, capital letters etc.)

_____

_____

_____

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_____

_____

_____

_____

_____

Lesson 4

This lesson, you are going to be moving on and looking at literature from the **medieval time period.** This was from around 476-1492. Mind-map what you think life was like.

Task: Answer these questions

What do you think the English language would have been like in the 14th century?

_____
_____
_____

Has language changed much over time?

_____
_____
_____

Do you think it will it continue to change?

_____
_____
_____

The English language has changed a lot over time. In the medieval time period English was very different to what we speak today.

You are going to read the story of the Prodigal Son. 'The Prodigal Son' is a story from **the Bible** about a son whose father gives him lots of money. He takes it and goes abroad, spends it all very foolishly, becomes very poor and finally returns home to his father. His father is just glad to have him home safely, even if he did waste all of his money.

The Bible is a really useful way to see how language has changed over time, because it's one of the oldest books in the world!

Below are four copies of the **same short extract** from the story of the prodigal son, but each one was written at a different time…

999 ← This is known as 'Old English' – it's almost unrecognisable!

1380 ← This is known as 'Middle English' – it's from the Medieval era, when Chaucer was around

1611 ← This was when Shakespeare was writing!

1961

Can you match the extract to the year it was written?

Now the elder son was in a field; and on his way back, as he approached the house, he heard music and dancing. He called one of the servants and asked what it meant. The servant told, "Your brother has come home, and your father has killed the fatted calf because he has him back safe and sound.

Forsoth his eldere sone was in the feeld, and whanne he cam and neighede to the house, he herde a symfonye and a croude. And he clepide oon of the seruantis, and axide what thingis thes weren. And he seide to him, Thi brodir is comen, and thi fadir hath slayn a fat calf, for he resseyued him saf.

Now his elder sonne was in the field, and as he came and drew nigh to the house, he heard musicke & dauncing, and he called one of the seruants, and asked what these things meant. And he said vnto him, Thy brother is come, and thy father hath killed the fatted calfe, because he hath receiued him safe and sound.

Sōthlīce his yldra sunu wæs on æcere; and hē cōm, and tha hē tham hūse genēalæhte, hē gehyrde thæne swēg and thæt wered. Tha clypode hē anne thēow, and acsode hine hwæt thæt wære. Tha cwæth hē, thin brothor com, and thin fæder ofsloh an fætt cealf, fortham the hē hine halne onfēng.

Task: Can you use the extracts to try to translate these words into Old, Medieval and Shakespearean English.

	999	1380	1611
Elder			
Field			
Called			
Brother			
Father			

<u>Lesson 5:</u>

Starter Activity:

Write/ look up a definition for these words:

- Pilgrim
- Pilgrimage

You are going to be reading some sections of a famous medieval book, 'The Canterbury Tales'. What do you know about Canterbury?

_____

_____

_____

Chaucer is the writer of *The Canterbury Tales*, which is a collection of stories told by fictional pilgrims on the road to visit the shrine to St Thomas Becket at the cathedral at Canterbury.

Task: Read through this summary of the story.

*On an April day, a group of English **pilgrims** meet outside Tabard Inn and are joined by the innkeeper, just outside London. They set out on a **pilgrimage from London to Canterbury** to pay their respects to the tomb of **Saint Thomas Becket** at Canterbury Cathedral.*

The group is described in detail, with characters from all classes, upper and lower, represented. Religious characters, such as a prioress, monk and a pardoner, travel alongside a shipman, miller, carpenter, squire, and a knight, among others.

Harry Bailey, the innkeeper, suggests a game where they all tell stories to each other along the way. The pilgrims agree to tell ***four stories each****, two on the way to Canterbury, and two on the way back. The person who tells* ***the best story****, as determined by the host, will have his supper paid for by the rest of the group.*

Each person tells a story that reflects their ***social position****. For example, the knight's tale is very traditional and romantic, whereas the miller's tale is very silly and quite rude!*

Why do you think people in the medieval era would have enjoyed this story?

_____

_____

_____

Chaucer began the story by writing a 'General Prologue' – the opening to the whole story (it's actually all one long poem – there were no novels in Chaucer's day!). Read through the Prologue to the story:

General Prologue

It happened at this season, that one day

In Southwark at the Tabard where I stayed

Ready to set out on my pilgrimage

To Canterbury, and pay devout homage,

There came at nightfall to the hostelry

Some nine-and-twenty in a company,

Folk of all kinds, met in accidental

Companionship, for they were pilgrims all;

It was to Canterbury that they rode.

Dictionary corner

Southwark – an area in south London
Tabard – the name of the inn
the hostelry – the inn
nine-and-twenty - 29

The bedrooms and the stables were good-sized,

The comforts offered us were of the best.

And by the time the sun had gone to rest

I'd talked with everyone, and soon became

One of their company, and promised them

To rise at dawn next day to take the road

For the journey I am telling you about.

But, before I go further with this tale,

And while I can, it seems reasonable

That I should let you have a full description

Of each of them, their sort and condition,

At any rate as they appeared to me;

Tell who they were, their status and profession,

What they looked like, what kind of clothes they dressed in;

And with a knight, then, I shall first begin.

Task: Answer these questions based on the prologue.

What is the story that is being told so far?

_____

_____

_____

Where does the story take place?

_____

_____

_____

What is the narrator going to tell us about each pilgrim?

_____

_____

_____

Who do you think the narrator is?

_____

_____

_____

Lesson 6:

In Chaucer's poem, 32 characters make their way to Canterbury! They are all from different walks of life. Here are just a few:

Knight	Carpenter
Yeoman	Weaver
Prioress	Miller
Nun	Parson
Monk	Cook
Friar	Pardoner

Starter Activity:

- Can you identify which characters might have the highest status?
- Which characters might have a lower status?
- Do you recognise all of these professions? Can you think of any modern day equivalents?

What is a Miller?

A **miller** is a person who works in a **mill.**

A **mill** is a building equipped with machinery for grinding grain into flour.

What would be a Miller's social status in medieval England? Why?

_____

_____

_____

Task: Read this description of The Miller

The Miller

The miller was a chap of sixteen stone,
A great stout fellow big in brawn and bone.
He did well out of them for he could go
And win the ram at any wrestling show.
Broad, knotty, and short-shouldered, he would boast
He could heave any door off hinge and post,
Or take a run and break it with his head.
His beard, as any sow or fox, was red
And broad as well, as though it were a spade;
And at its very tip, his nose displayed
A wart on which there stood a tuft of hair
Red as the bristles in an old sow's ear.
His nostrils were as black as they were wide.
He had a sword and buckler by his side,
His mighty mouth was like the furnace door.
A wrangler and a buffoon, he had a store
Of tavern stories, filthy in the main.
He was a master-hand at stealing grain.
He felt it with his thumb and thus he knew
Its quality and took three times his due.
He liked to play the bagpipes up and down
And that was how he brought us out of town.

Glossary

brawn = physical strength

ram = a male sheep

sow = a female pig

buckler = shield

wrangler = argumentative

What are your first impressions of the Miller? What kind of person do you think he is?

_____
_____
_____
_____

What do we learn about the Miller from this description? **Your task is to find quotations that tell you something about 'The Miller.'**

Once you have found your quotations you need to **infer** what they tell you about 'The Miller'

Eg. "the miller was a chap of sixteen stone"

This suggests the Miller is…… because……

Find at least **three** quotations.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Using all of the words and phrases you have found, draw an illustration of the Miller. Try to make it as accurate as possible!

Label your drawing with quotations to show why you have illustrated him in that way.

Lesson 7:

Do Now:
What can you **infer** about the Wife of Bath based on…

a) Her name?
b) Her appearance?

_____

_____

_____

Key Vocabulary:

wroth	Wroth means **angry**.
kerchiefs	A piece of fabric used to cover the head.
hose	Stockings, socks or tights.
gartered	An elastic band worn around the leg to hold up the stocking.
ambler	Someone who moves slowly and leisurely.
wimpled	To cover your face.
buckler, targe	Buckler – a small round shield. Targe – A target.

Read through the description of the Wife of Bath – she is another character from Chaucer's poem!

The Wife of Bath

There was a housewife come from Bath, or near,
Who - sad to say - was deaf in either ear.
At making cloth she had so great a bent
She bettered those of Ypres and even of Ghent.
In all the parish there was no goodwife
Should offering make before her, on my life;
And if one did, indeed, so wroth was she
It put her out of all her charity.
Her kerchiefs were of finest weave and ground;

I dare swear that they weighed a full ten pound
Which, of a Sunday, she wore on her head.
Her hose were of the choicest scarlet red,
Close gartered, and her shoes were soft and new.
Bold was her face, and fair, and red of hue.
She'd been respectable throughout her life,
With five churched husbands bringing joy and strife,
Not counting other company in youth;
But thereof there's no need to speak, in truth.
Three times she'd journeyed to Jerusalem;
And many a foreign stream she'd had to stem;
At Rome she'd been, and she'd been in Boulogne,
In Spain at Santiago, and at Cologne.
She could tell much of wandering by the way:
Gap-toothed was she, it is no lie to say.
Upon an ambler easily she sat,
Well wimpled, aye, and over all a hat
As broad as is a buckler or a targe;
A rug was tucked around her buttocks large,
And on her feet a pair of sharpened spurs.
In company well could she laugh her slurs.
The remedies of love she knew, perchance,
For of that art she'd learned the old, old dance.

1. What do we learn that the Wife of Bath is good at, in line 3?

   _____
   _____
   _____
   _____

2. How many times has the Wife of Bath
   been married?

   _____
   _____

_____

_____

3. Name three places she has travelled to.

_____

_____

_____

_____

4. How do we know that the Wife of Bath is wealthy?

_____

_____

_____

_____

5. How do we know that the Wife of Bath enjoys attention?

_____

_____

_____

_____

How does Chaucer present the Wife of Bath?

Point	Chaucer presents the Wife of Bath as…..
Quotation	This is shown in the phrase '……..'
Infer	The language suggests… This tells the reader that…

Zoom in	Chaucer specifically used the (word/device) '……..' to emphasise….
Zoom out	These ideas link to…

Lesson 8:

Do Now:

What types of people went on pilgrimages in the Medieval times?

_____

_____

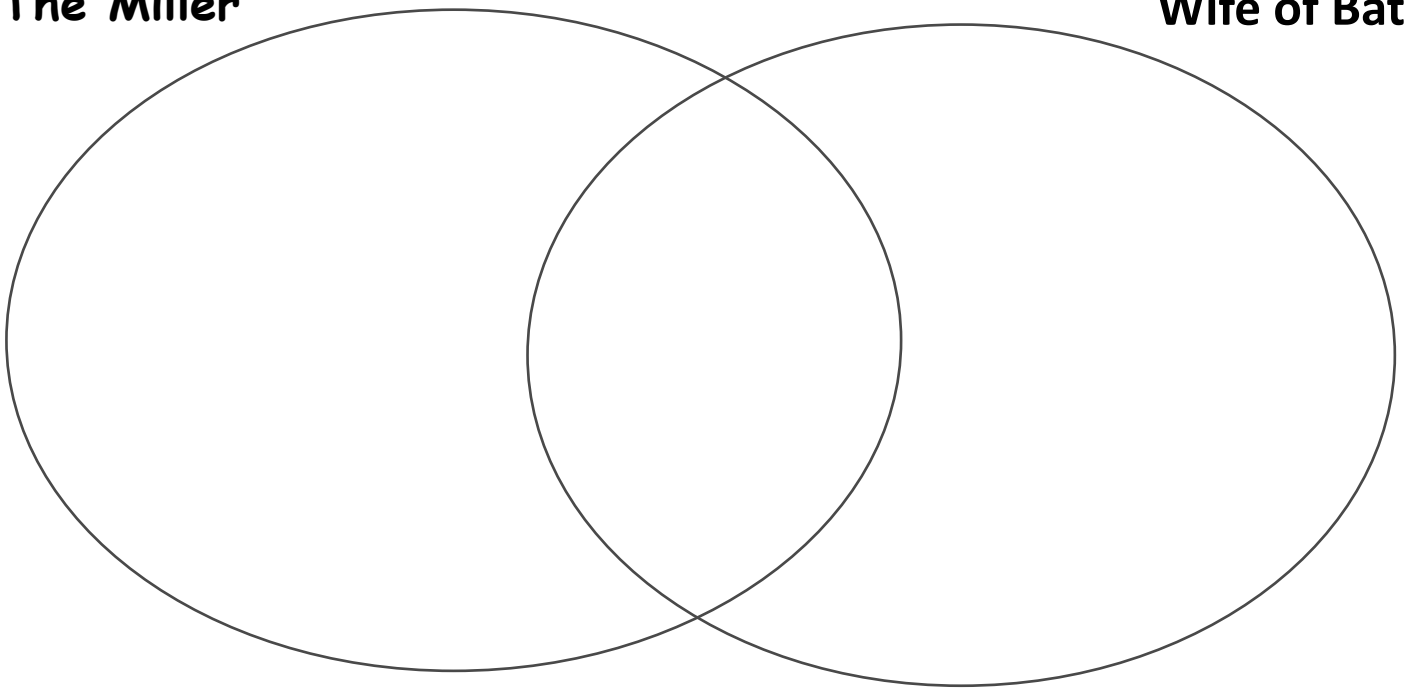
Why did they go on pilgrimages?

_____

_____

What are the similarities and differences between 'The Miller' and 'Wife of Bath'? Complete the Venn diagram:

The Miller **Wife of Bath**



1. What is each character's status/profession? Do they take this seriously?

_____
_____
_____

2. What can you say about each character's appearance? What does this tell you about them?

_____
_____
_____

3. Is there evidence to suggest that either character is hot-tempered?

_____
_____
_____

4. Is there evidence to show that either character enjoys a joke?

_____
_____
_____

5. Challenge! Are there any clues to tell us what Chaucer (the narrator) thinks about these characters?

_____
_____
_____

6. Can you think of any other ways to compare them?

_____
_____
_____

The Miller and the Wife of Bath get talking during the pilgrimage… Do they have anything in common? Do they get along?

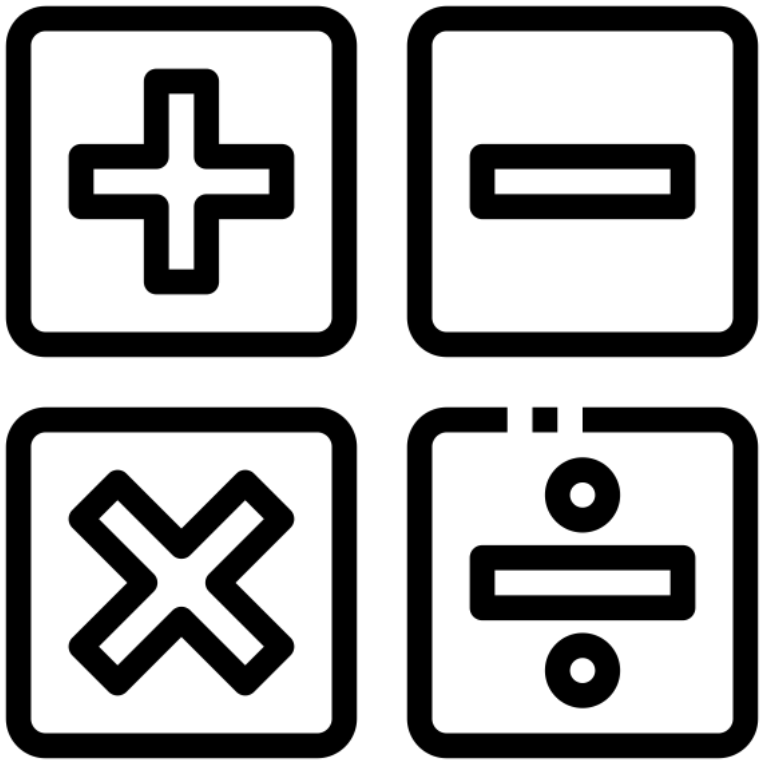
Task: create a short role play for the Miller and the Wife of Bath.

The Miller: _____

Wife of Bath _____

MATHS FOUNDATION

Complete as many of the following tasks as possible. If finished, have a go at the higher tasks.



Number and Place Value

Counting

Count forwards and backwards in 4, 6, 7, 8, 9, 25, 50, steps of powers of 10 (10, 100, 1000, ...)

1. Continue the sequences:

   7, 14, 21, 28, 35, 42, _____, _____, _____, _____, _____,

   625, 600, 575, 550, 525, _____, _____, _____, _____, _____,

   57 382, 67 382, 77 382, 87 382, _____, _____, _____, _____, _____,

2. Find 10, 100 or 1000 more or less than a given number

   What is 100 less than 1902? What is 1000 more than 3249?

   _____ _____

3. Count forwards and backwards through zero

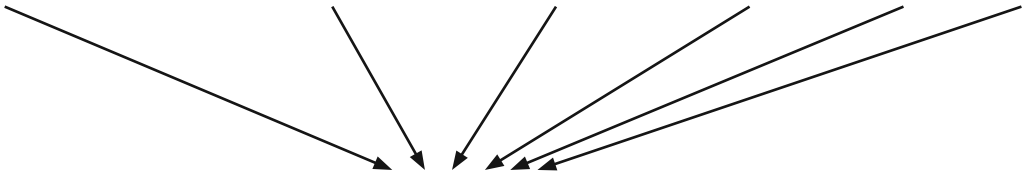
   Continue the sequence:

   6, 5, 4, 3, 2, 1, 0, -1, -2, -3 _____, _____, _____, _____, _____.

Place Value

Recognise the place value of each digit in up to four-digit numbers

hundred thousands ten thousands thousands hundreds tens ones



245 392

4. Underline the thousands digit in 2769.

   Underline the hundred thousands digit in 347 053.

   Underline the tens digit in 209 740.

Compare and Order Numbers

Compare using <, > or =

5. Write a number so that each sentence makes sense:

   141 141 > _____

   144 114 = _____

   501 243 < _____

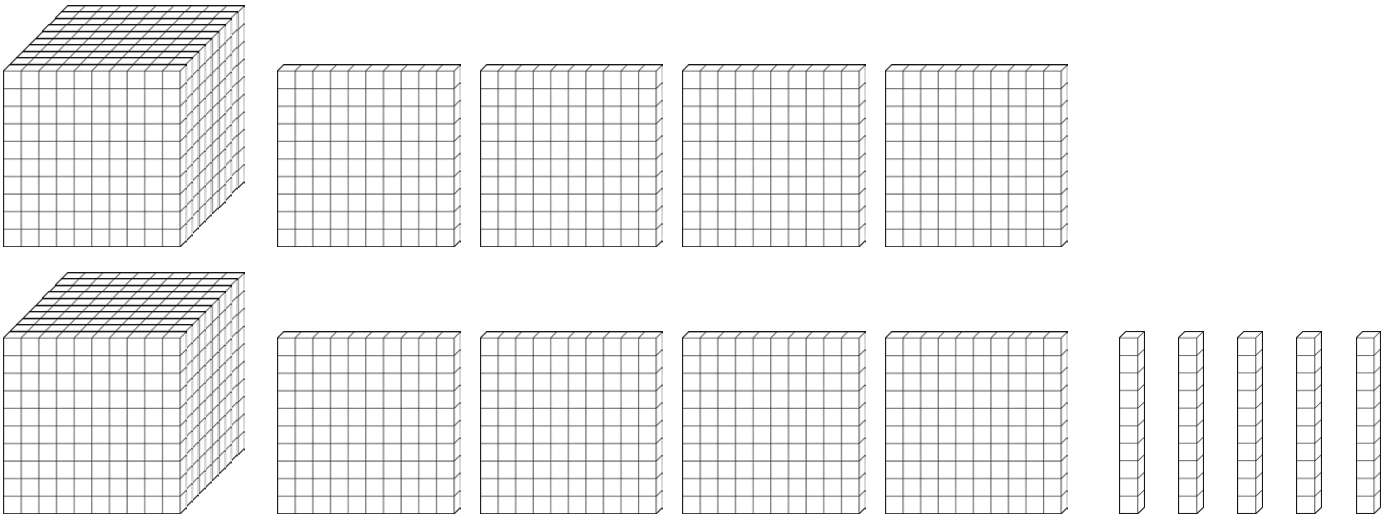
6. Order the following numbers from largest to smallest:

   Smallest 121 211 11 112 122 211 11 211 121 211 Greatest

Identify, Represent and Estimate

Use models and representations of numbers

7. What number is shown? _____



Rounding

Round numbers to the nearest 10, 100, 1000, 10 000 or 100 000

8. 4500 rounded to the nearest 1000 is _____

   253 450 to the nearest 10 000 is _____

Read and Write Numbers in Numerals and Words

9. Complete the table:

Numerals	Words
	Three hundred and forty-four thousand, two hundred and eighty-five
855 102	
	Six hundred and twenty-two thousand, nine hundred and sixteen
120 563	

Roman Numerals

10. Use the following Roman numerals to represent numbers to 100:

Roman	Numeral
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

CCXIX = _____

DCXXVI = _____

CMXLVIII = _____

MDCCCLXXI = _____

Solve Problems

11. Here are 3 years written in Roman Numerals. Order the years from earliest to latest:

MMIX MCMXCIX MMXV

Addition and Subtraction

Add and Subtract Mentally

12. Add and subtract three-digit numbers and ones, tens and hundreds

376 + 3 = _____ 376 + 40 = _____ 376 + 200 = _____

Mental Methods

13. Add and subtract numbers mentally with larger numbers

15 672 – 3200 = _____

Formal Methods

14. Use a formal written method to calculate:

```
   7  2  6  9  8
+  6  1  5  6  2
_____________________

_____________________
```

```
   8  4  9  3  5
-  1  2  4  2  3
_____________________

_____________________
```

```
   6  4  8  1  2
-  2  9  3  6  4
_____________________

_____________________
```

Estimate and Inverse

15. Estimate by rounding to check accuracy.
    Use the inverse to check the following calculations. Circle 'correct' or 'incorrect.'

    6470 + 1248 = 7718 correct/incorrect

    5905 - 2674 = 2231 correct/incorrect

Solve Problems

Multi-step problems

16. 8451 people visit a cinema on one day. There are two films showing. 3549 adults and 946 children see an adventure film, 1263 adults and a number of children see an animation.

    How many adults are there? _____

    How many children are there? _____

    How many children see the animation? _____

    How many more children see the animation than the adventure film? _____

Multiplication and Division

Multiplication Tables

17. Fill in the missing numbers:

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1		3		5	6		8		10	11	
2		4		8	10		14		18			24
3	3		9							30		36
4					20						44	
5						30					55	
6	6					36		48		60		72
7	7		21		35		49		63		77	
8				32			56		72		88	96
9	9	18			45			72		90		108
10	10		30			60						120
11			33		55						121	
12	12		36			72						144

Multiplying and Dividing

18. Use knowledge of place value and related facts to solve these calculations:

400 × 5 = _____ 630 ÷ 7 = _____

Multiply by 0 and 1 and divide by 1:

285 × 1 = _____ 285 × 0 = _____ 285 ÷ 1 = _____

Multiplying and dividing whole numbers and decimals by 10, 100 and 1000:

45 × 10 = _____ 6.7 × 100 = _____ 902 × 1000 = _____

59 ÷ 10 = _____ 4506 ÷ 100 = _____ 382 ÷ 1000 = _____

Factor Pairs and Commutativity

19. What are all the factor pairs of 56? _____

    Use your factor pairs to solve:
    56 pencils are shared between 4 tables. How many pencils does each table receive?

    _____

20. Change the order of the numbers in these calculation without changing the answer:

    5 × 9 × 2 = 90 _____

    6 × 3 ×10 = 180 _____

Prime Numbers

21. List all the prime numbers up to 20. _____

    List all prime numbers between 20 and 30. _____

    What would be the first prime number after 100? _____

Square and Cube Numbers

22. Write these numbers into the correct place in the table:
    9, 144, 27, 4, 1, 8, 100, 81, 125, 16, 25, 64, 121

Square Numbers	Cube Numbers

Formal Methods

23. Use formal written methods to multiply:

			2	7
		x		4
		3	8	2
	x			7
	2	4	7	1
x				6

24. a) Use the formal long multiplication method to calculate:

			2	7
		x	1	4

b) Use a short division method to solve these problems:

	4	7	6			5	4	8	7		

25. Fill in the missing numbers to complete the calculations.

☐ × 3 = 45 or 56 ÷ ☐ = 14

Word Problems:

26. A teacher has four new boxes of pencils, each with 12 pencils, and a tray with 37 pencils. The teacher shares equally all the pencils between 5 tables. How many pencils does each table receive? Show your working out below.

Scaling Problems with Simple Fractions

27. 12 pizzas are cut into quarters. Into how many pieces of pizza will the pizzas be cut?

_____

Correspondence problems

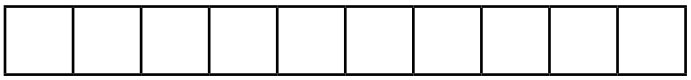
28. Jenna has 2 t-shirts and 4 pairs of shorts. How many different combinations of the t-shirts and shorts does Jenna have? _____

29. 120 pencils are shared equally between 3 classes. How many pencils will they each receive?

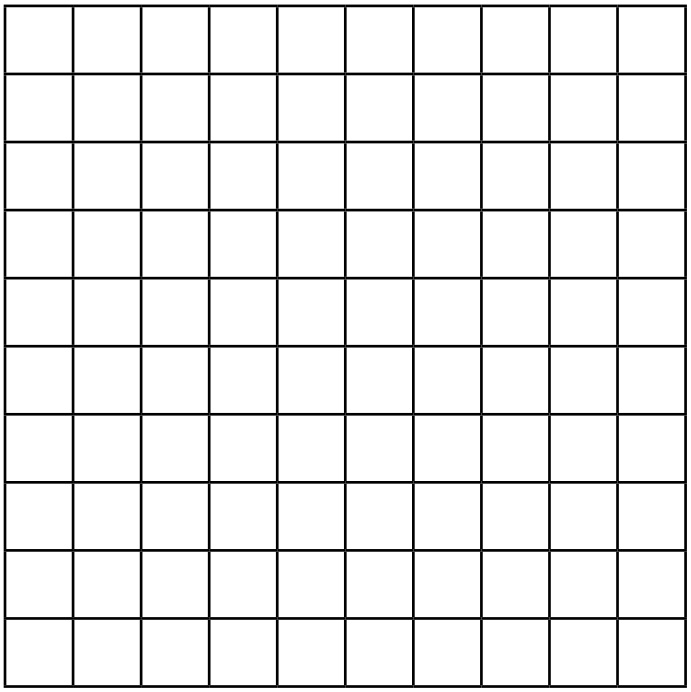
_____

Fractions

30. Shade to show 7/10:

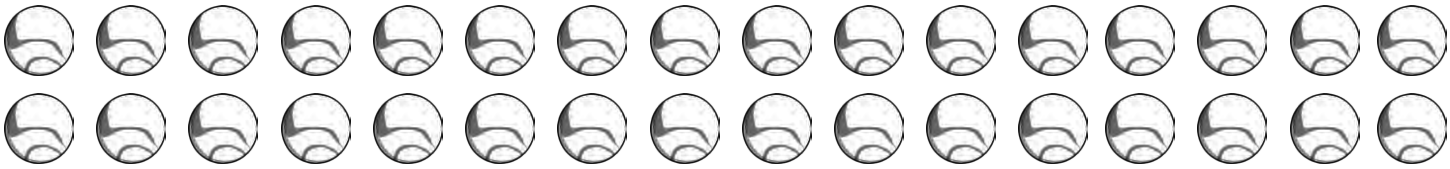


Shade to show 46/100:



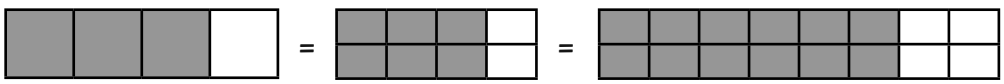
Fraction of a Set of Marbles

31. Find $\frac{5}{8}$ of these marbles by circling:



Equivalent Fractions

32. Write in the missing fractions



____ ____ ____

1															
$\frac{1}{2}$								$\frac{1}{2}$							
$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$			
$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$

1															
$\frac{1}{3}$						$\frac{1}{3}$						$\frac{1}{3}$			
$\frac{1}{6}$				$\frac{1}{6}$				$\frac{1}{6}$				$\frac{1}{6}$			
$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$	
$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$

1															
$\frac{1}{5}$				$\frac{1}{5}$				$\frac{1}{5}$				$\frac{1}{5}$			
$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$	
$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$

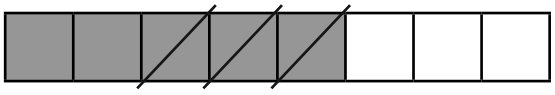
33. Write 3 fractions that are equivalent to $\frac{1}{3}$ _____,_____,_____

Add and Subtract Fractions with the Same Denominator and with Denominators that are Multiples

34. Find the missing equivalent fractions.

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} =$

$\frac{5}{8} - \frac{3}{8} = \frac{2}{8} =$



Compare and Order

Unit fractions

35. a) Order these fractions from smallest to greatest:

smallest $\frac{1}{6}$ $\frac{1}{3}$ $\frac{1}{8}$ $\frac{1}{4}$ greatest

b) Use <. > or = to compare these fractions:

$\frac{1}{5}$ ☐ $\frac{3}{5}$

$\frac{5}{8}$ ☐ $\frac{1}{4}$

Mixed Numbers and Improper Fractions

36. Write the improper fraction:

Mixed fraction $1\frac{1}{5}$ = - Improper fraction

Multiply Fractions

37. Complete the missing fractions:

$\frac{2}{3} \times 5 = \frac{\square}{3} = 3\frac{\square}{3}$

Decimal Equivalents

38. Complete the missing tenths, hundredths and decimals:

$\frac{\quad}{10} = 0.7$ $\frac{\quad}{100} = 0.43$

$\frac{1}{4} = 0.2\_$ $\frac{1}{2} = 0.\_\_$ $\frac{3}{4} = 0.7\_$

Write decimals as a fraction:

$0.\_\_\_\_ = \frac{67}{100}$

Division by 10 and 100

39.

2 ÷ 10 = _____ 2 ÷ 100 =_____ 25 ÷ 10 = _____ 25 ÷ 100 = _____

Rounding Decimals

40. Round these decimals to the nearest whole number:

0.5 rounds to _____

2.35 rounds to _____

Round this decimal to one decimal place:

0.05 rounds to _____

Read, Write, Order and Compare Decimals

41. Write the decimal in digits:

zero ones, four tenths and five hundredths. _____

two ones, three tenths and four hundredths. _____

Percentages

42. Complete the missing percentages:

_____% = $\frac{50}{100}$ = $\frac{1}{2}$ 41% = $\frac{\quad}{100}$

Solve Problems

Fractions

43. Adil divides his marbles into tenths. He wants to give two friends an equal number of marbles but still have 3 times more than their individual amounts. What fractions could he split his marbles into?

Measure and Money Problems

44. a) Ellie buys a new shirt for £4.75 and a pair of trousers for £3.50 in a sale. She pays with a £10 note. What change will she receive?

b) A bag of potatoes weigh 2.45kg. How much will 4 bags weigh?

Decimal Problems to 3 Decimal Places

45. A packet of sugar weighs 1.348kg. $\frac{3}{4}$ kg is used to bake some cakes.

How much will the packet weigh now?

Knowing Percentage and Decimal Equivalents

46. Order the following from smallest to largest:

25%, 0.3, $\frac{2}{5}$

Measurement

Estimate, Measure, Compare, Add and Subtract

47.

Lengths (mm/cm/m)

Measure and draw lines using a ruler in centimetres (cm) or millimetres (mm).

This line is _____cm or _____mm long.

Mass (g/kg)

Measure the mass of objects using different scales

48. 3 apples weigh 435g. One is eaten, and the 2 remaining apples weigh 285g. What is the mass of the eaten apple?

Capacity (ml/l)

49.

Circle the jug which has more water:

75ml

90ml

Convert between units

50.

Complete the missing conversions:

Length:

1 km = _____m

1m = _____cm or _____mm

1cm = _____mm

Mass:

1kg = _____g

Capacity/ Volume:

1l = _____ml

Time:

1 year = _____days

1 week = _____days

1 day = _____hours

1 hour = _____minutes

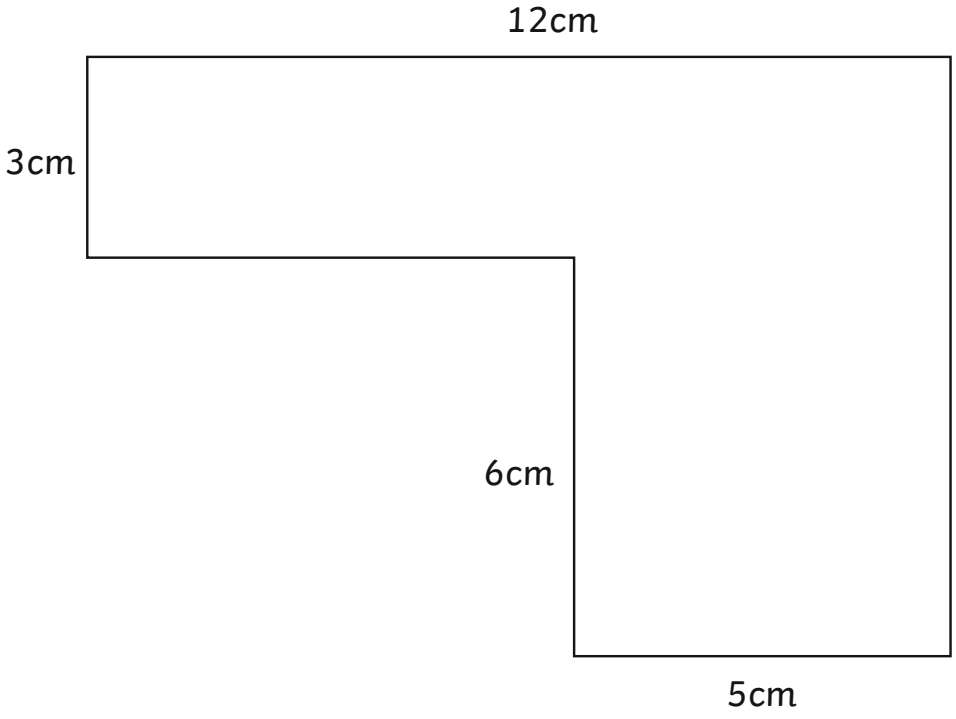
1 minute = _____seconds

Perimeter

51. Calculate the perimeter:

Perimeter = _____cm.

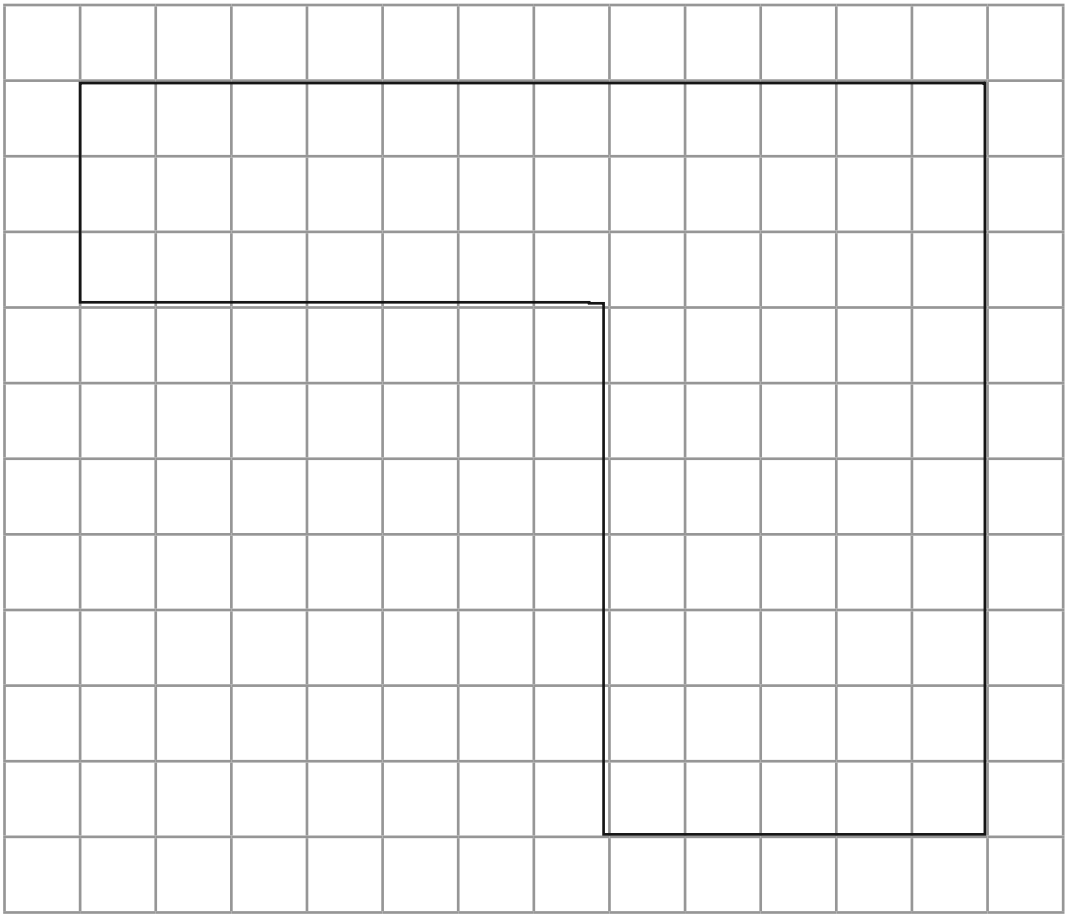
Measure and calculate the perimeter of rectilinear shapes (including squares)



Perimeter = _____cm.

Area

52. a) Calculate the area of this rectilinear shape by counting squares:

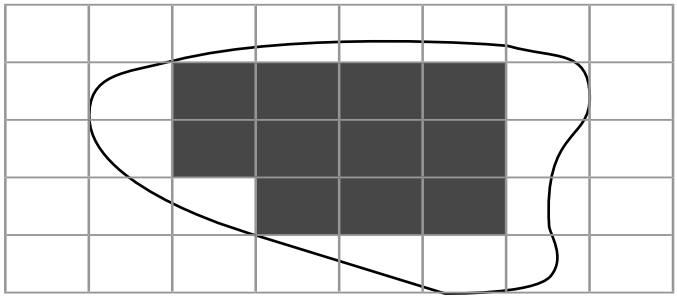


Area = _____cm²

b) Measure the sides of the rectangle and calculate the area:

Area = _____cm × _____cm = _____cm²

c) Estimate the area of this irregular shape:



_____

Money

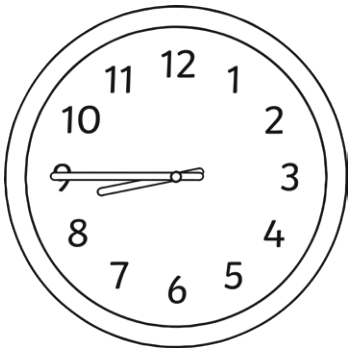
53. Add and subtract giving change

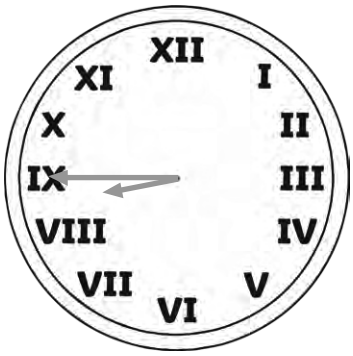
Jude buys a bag of apples for £2.25 and some avocados for £3.15.How much change will he get from £20?

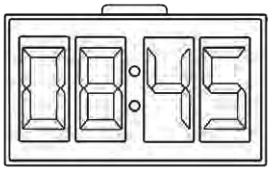
Time

54. Analogue clocks and 12/24 hour time

a) What time do these clocks show? _____







b) The maths lesson lasted 1 hour and 5 minutes. The art lesson was one hour and twenty minutes. Which lesson was longer and by how long? _____

c) A film lasts 136 minutes. How long is the film in hours and minutes?

_____ **hours and** _____ **minutes**

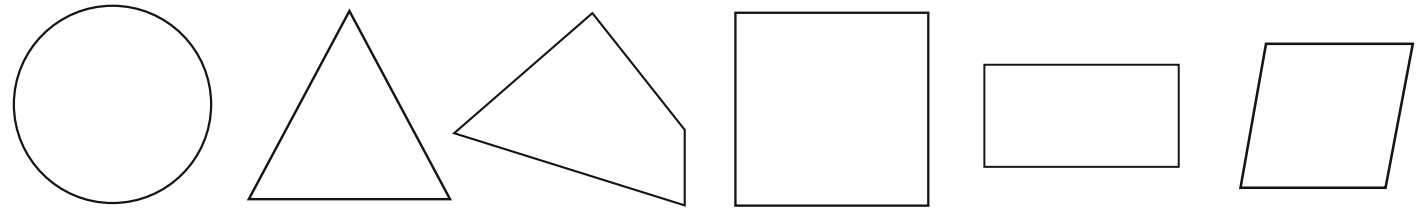
Solve Problems

55. a) 2 equal bottles of water contain 500ml of drink. How many litres will 7 bottles hold?

b) A 6.5kg bag of soil is divided into 20 pots equally. Each pot needs 0.5kg. How much more soil does each pot need after the bag is used up?

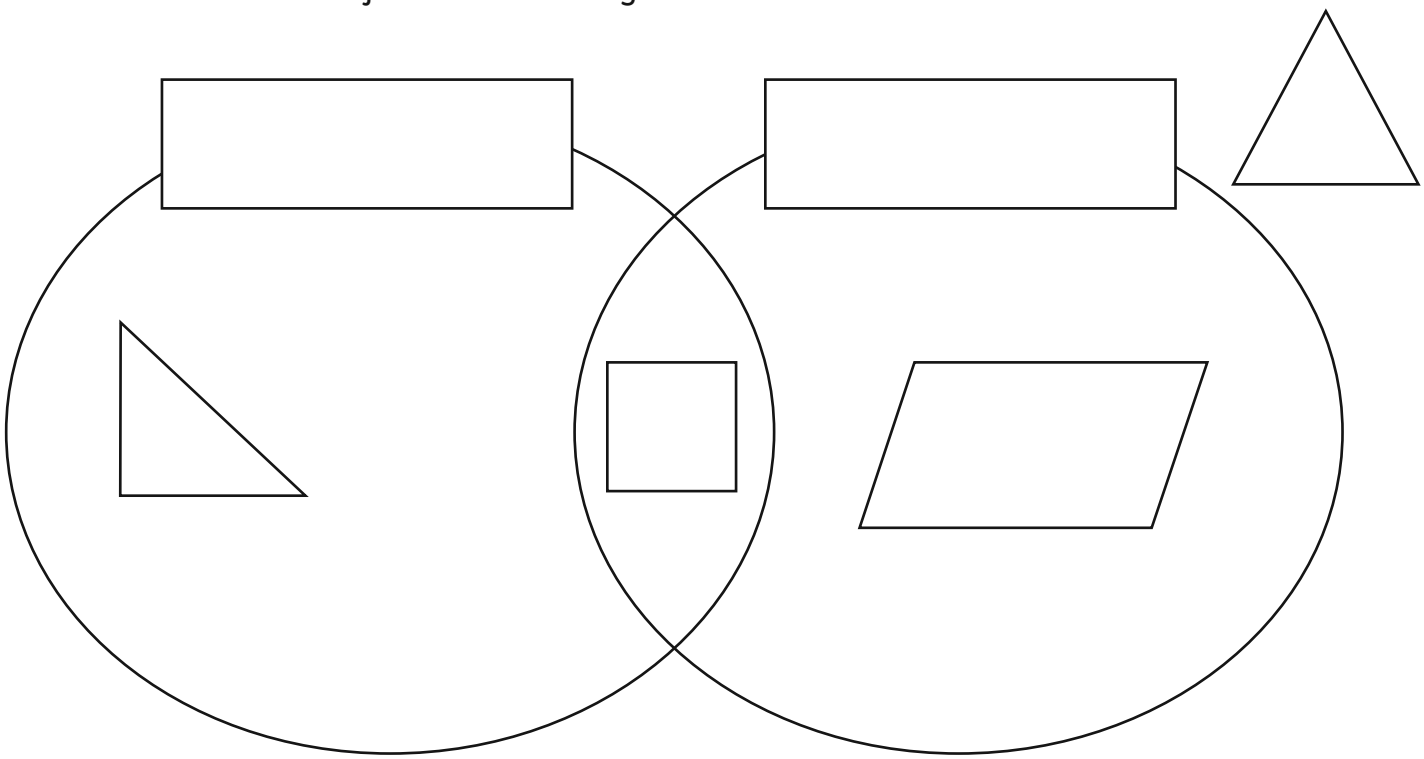
2D Shapes

56. Label the shapes.



57. Draw a square on 1cm squared paper with sides of 4cm.

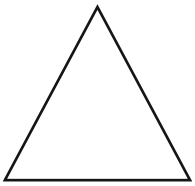
58. Write suitable titles for this Venn diagram:



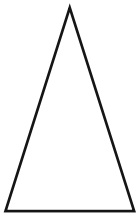
Triangles

59. Label the triangles.

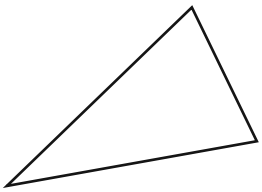
_____ (all sides and angles equal)



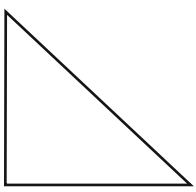
_____ (2 sides and angles equal)



_____ (no sides and angles equal)

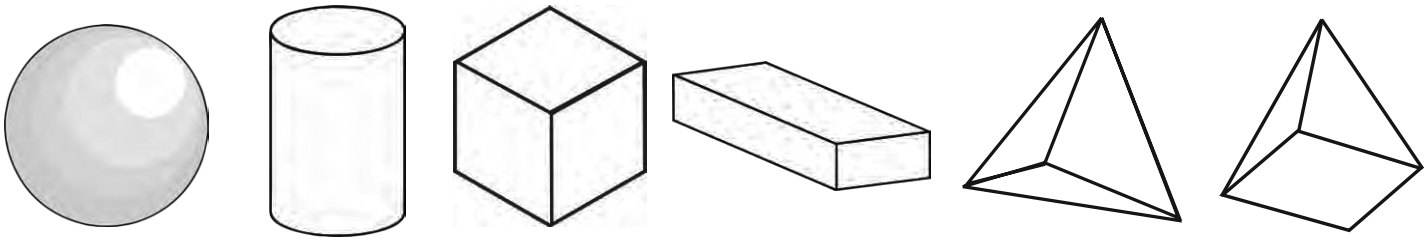


_____ (one angle a right angle)

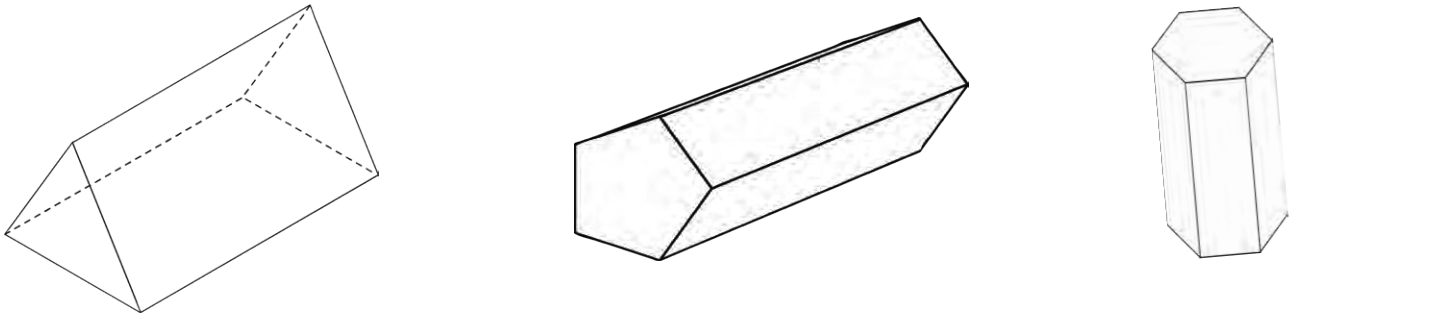


3D Shapes

60. Label the shapes:



_____ _____ _____ _____ _____ _____



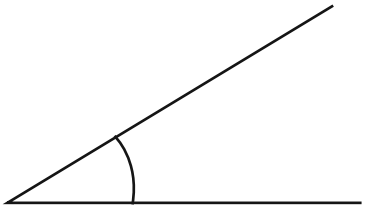
_____ _____ _____

Recognise 2D representations and make models from modelling materials

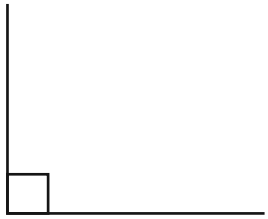
Angles

61. Complete the statements:

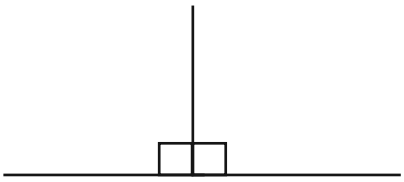
An _____ measures a turn.



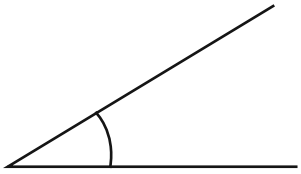
A _____ _____ is the corner of a square.



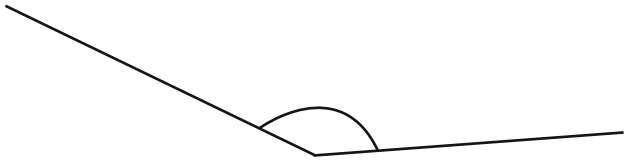
_____ right angles make a straight line.



An _____ angle is less than a right angle (90°).

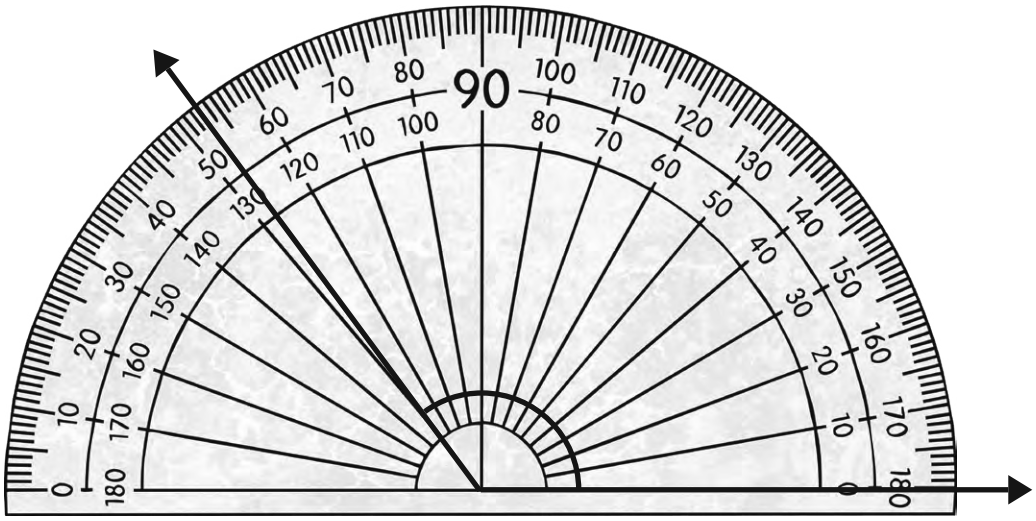


An _____ angle is between a right angle and a straight line.

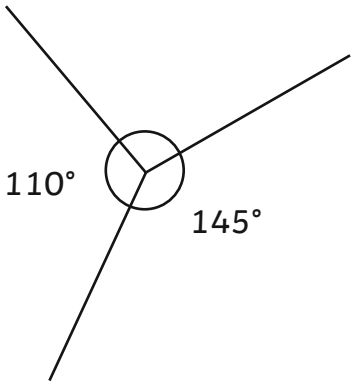


Draw and Measure Angles

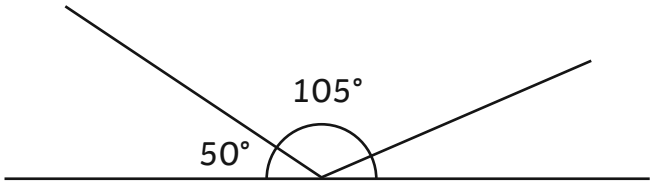
62. a) Measure the angle: _____



b) Calculate the missing angles:



c)

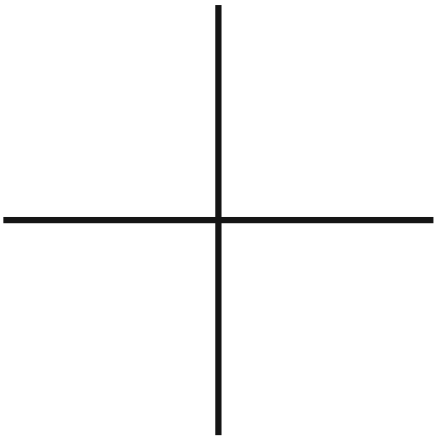


One right angle = _____° Two right angles = _____° Three right angles = _____°

Lines

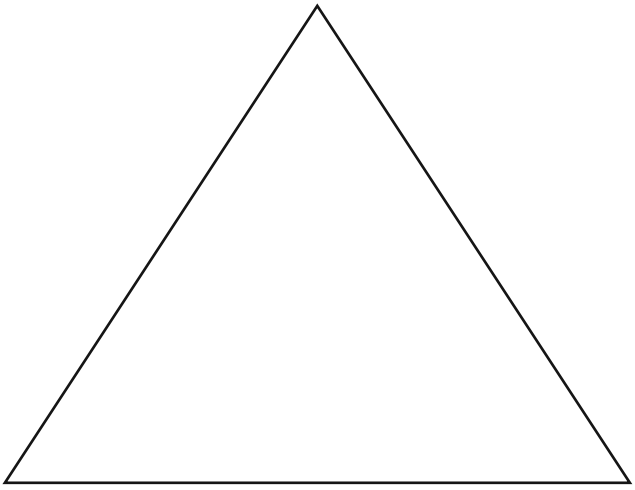
63. Label the lines using the word bank:

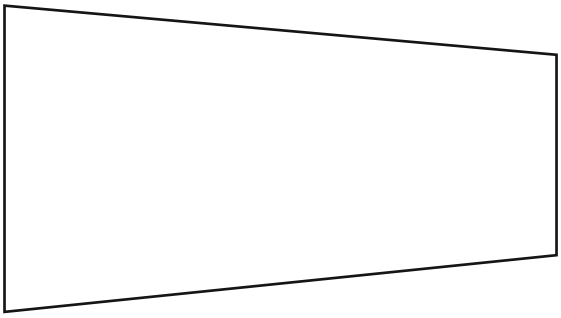
vertical
parallel
horizontal
perpendicular



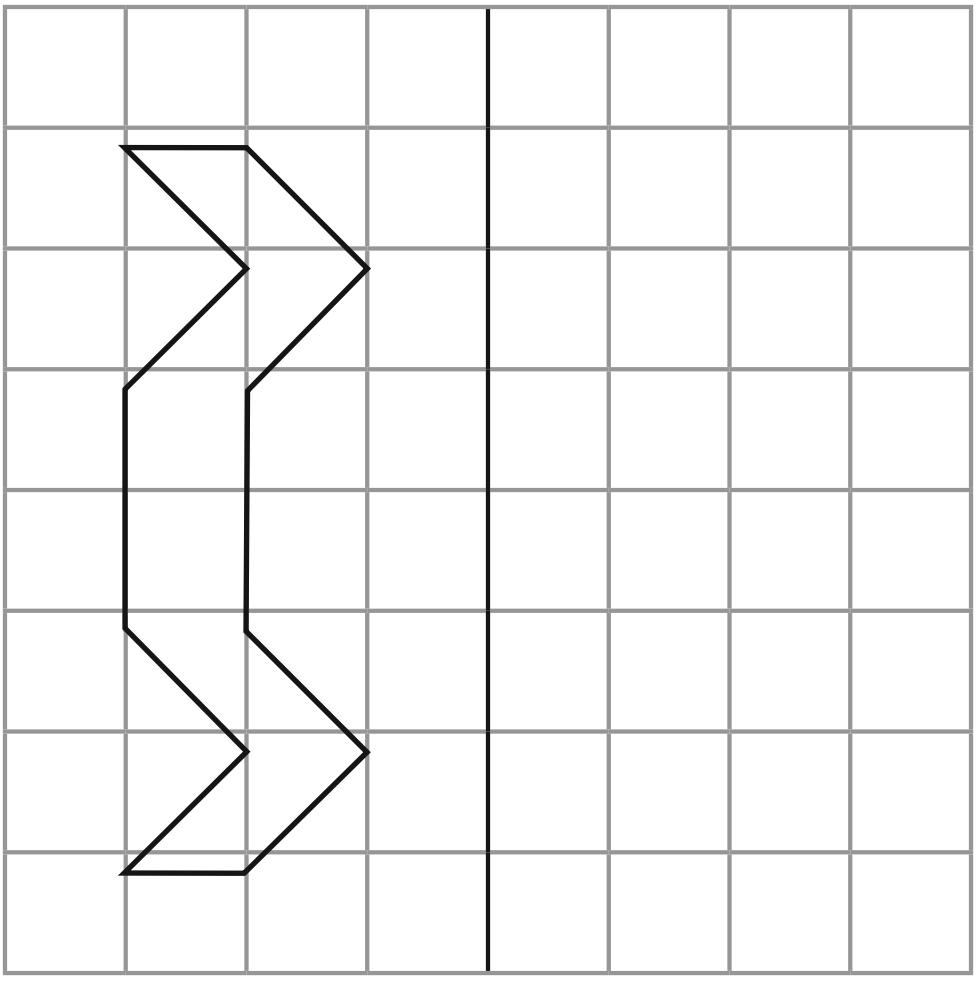
Symmetry

64. Mark the lines of symmetry in these shapes:



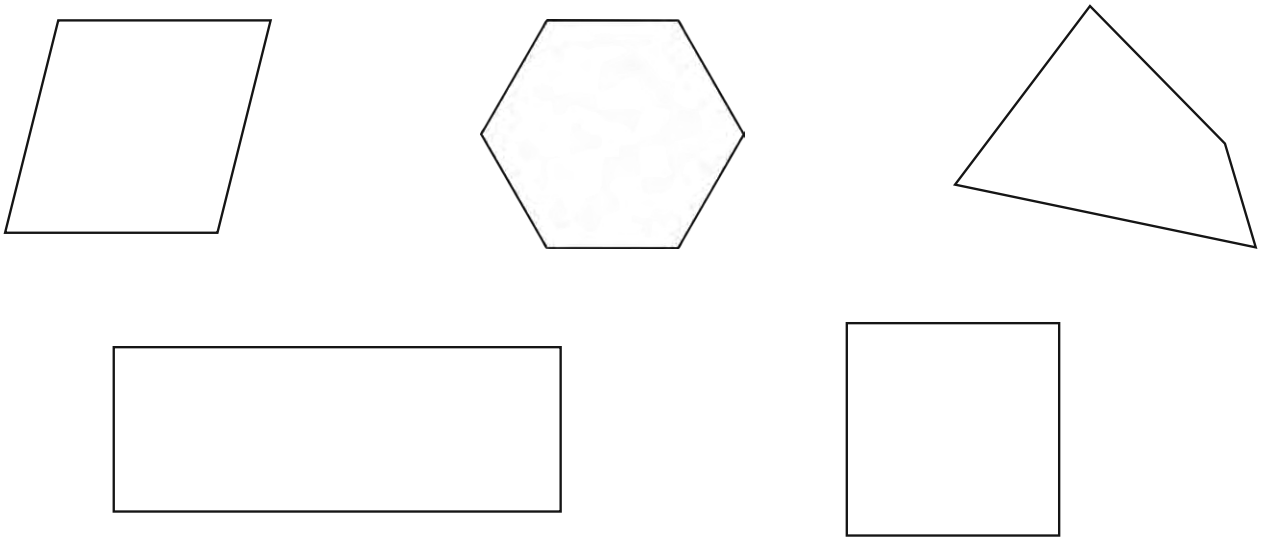


Complete the symmetrical figure:



Regular and Irregular Polygons

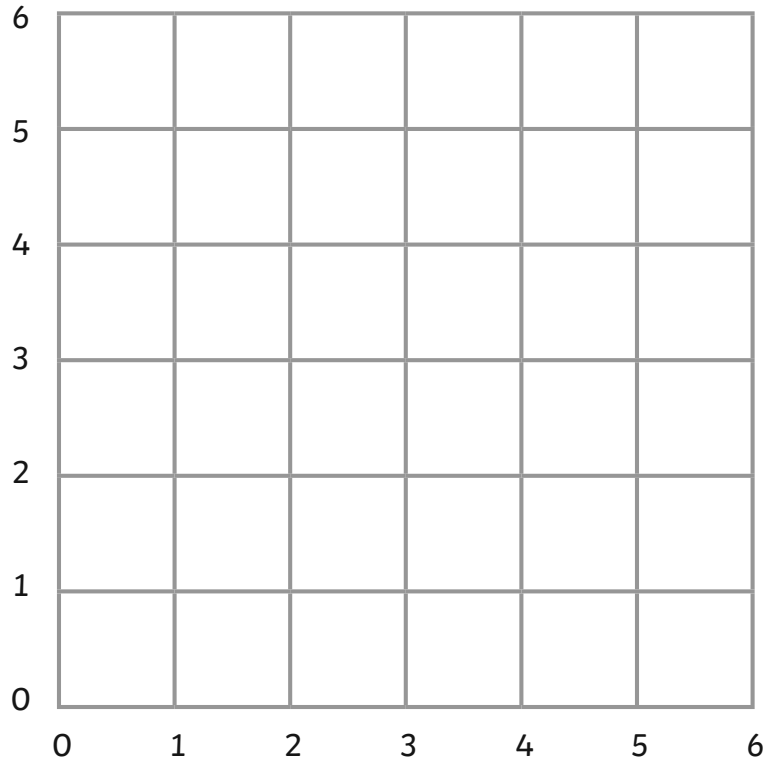
65. Circle the regular polygons:



Geometry – Position and Direction

Coordinates

66.



Label A, B and C The coordinates are

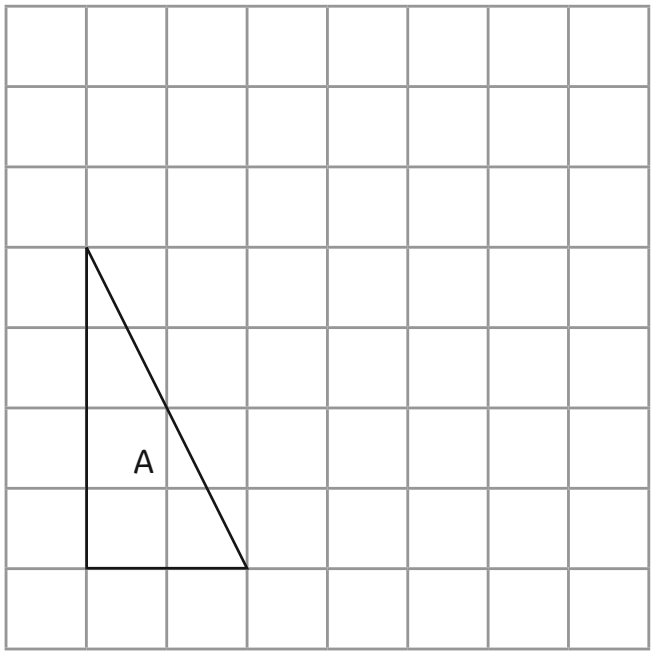
A (1,3)

B (2,4)

C (4,2)

What are the coordinates of the point that will complete a rectangle? _____

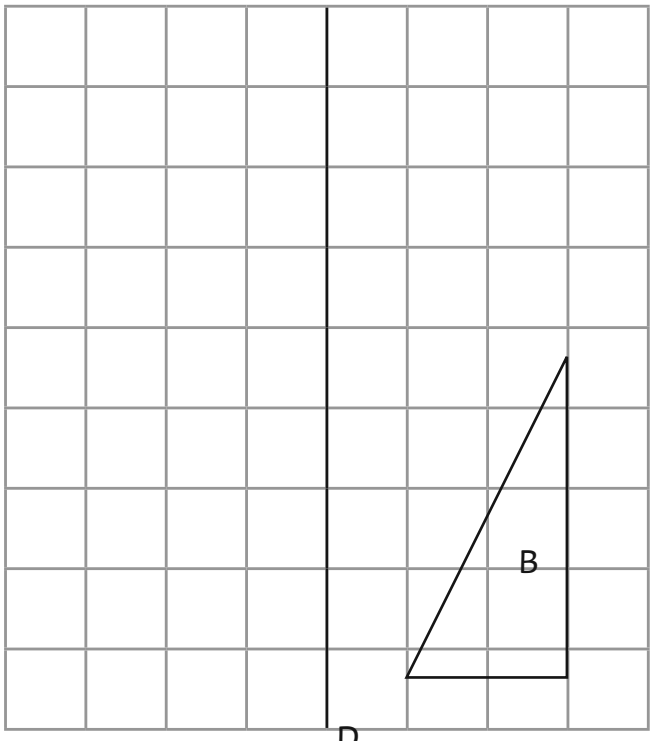
Translation



The triangle A is translated three squares to the right and two squares up to triangle B.

Mark triangle B

Reflection



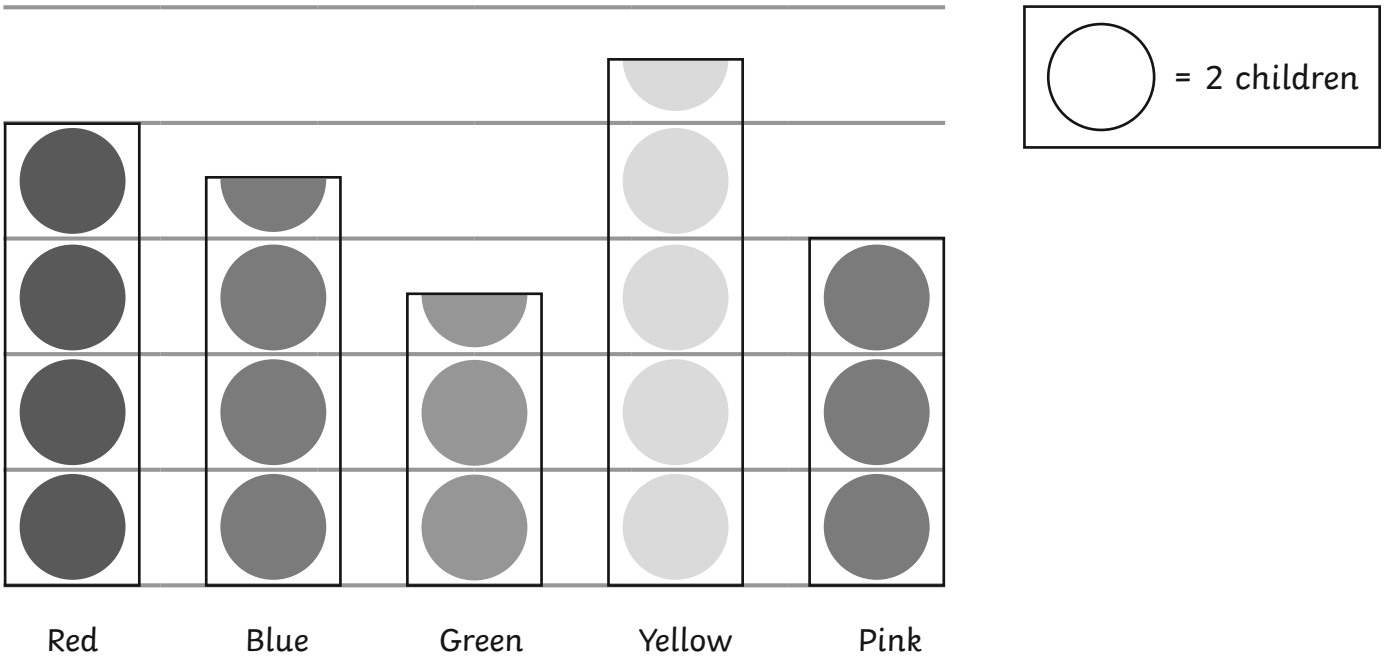
The triangle A is reflected about the line CD to triangle B.

Statistics

67. Present data in these graphs and tables and solve problems:

Pictograms

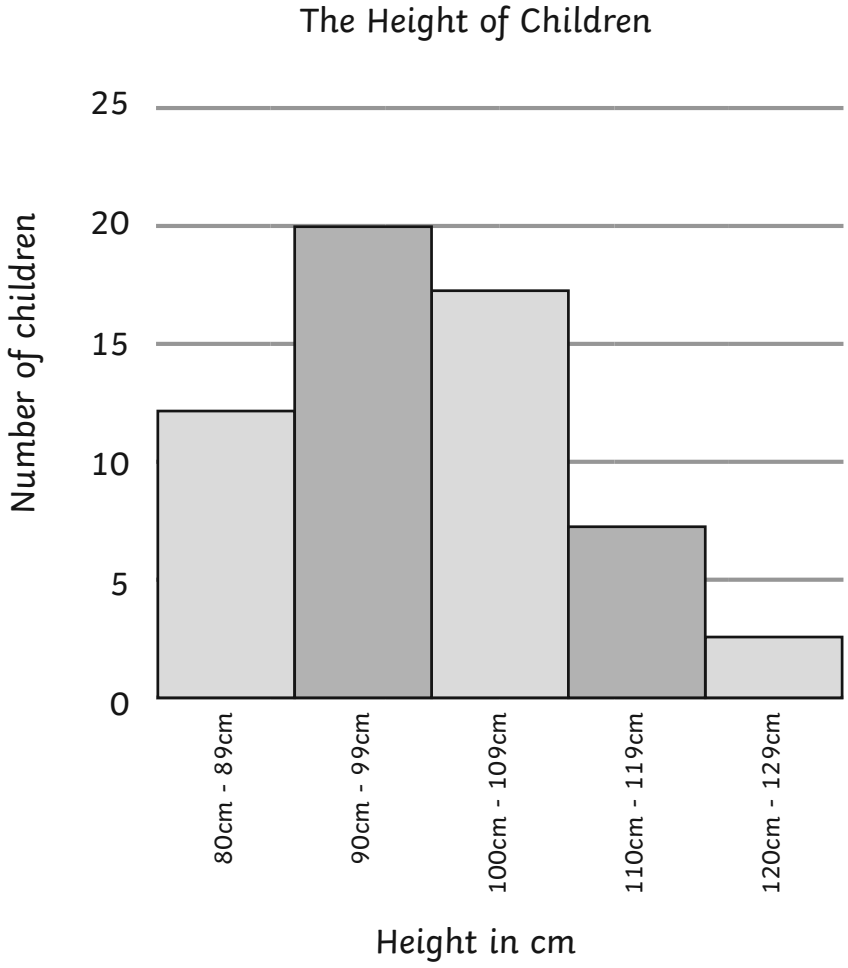
Favourite Colour



a) How many children chose their favourite colour? _____

Bar Charts

a) How many more children chose cheese and onion as their favourite crisps than ready salted?



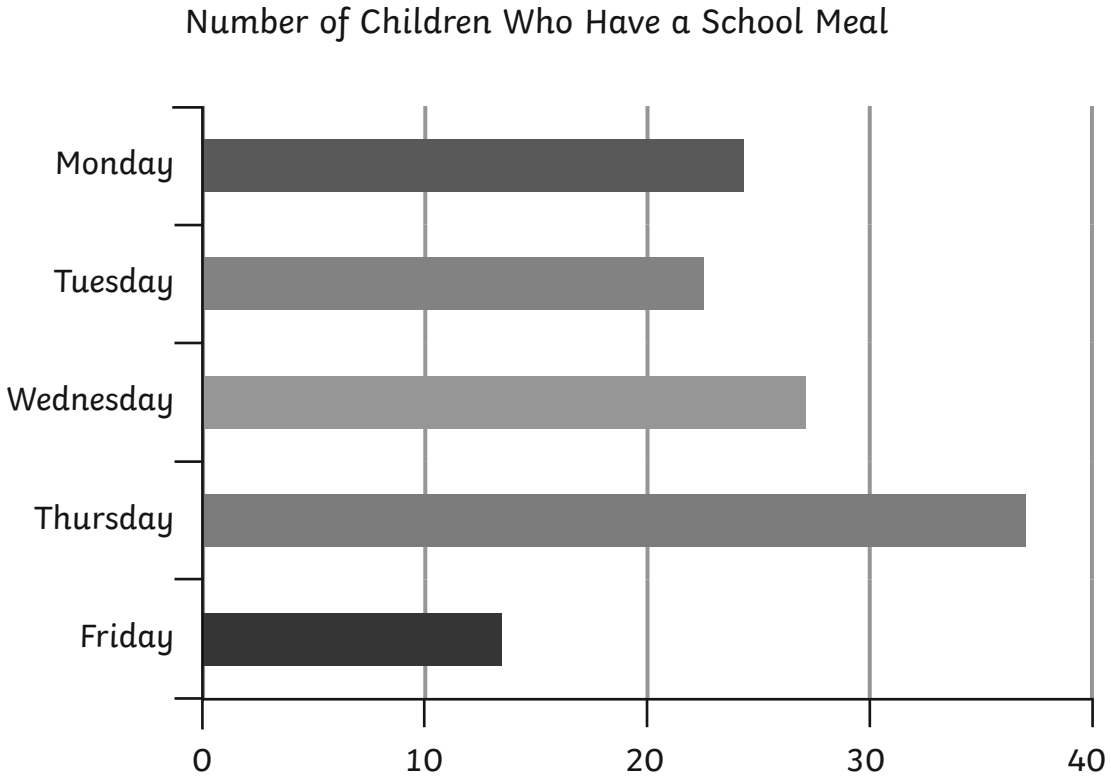
c) How many children are shorter than 1m? _____

Tables

	Monday	Tuesday	Wednesday	Thursday
Saturn	2	1	3	4
Twin	0	2	2	3
Stars	5	3	2	0
Cluster	2	2	2	2
Treasure	1	3	5	0
Tiger	6	3	4	1
Plimmy	1	3	2	2

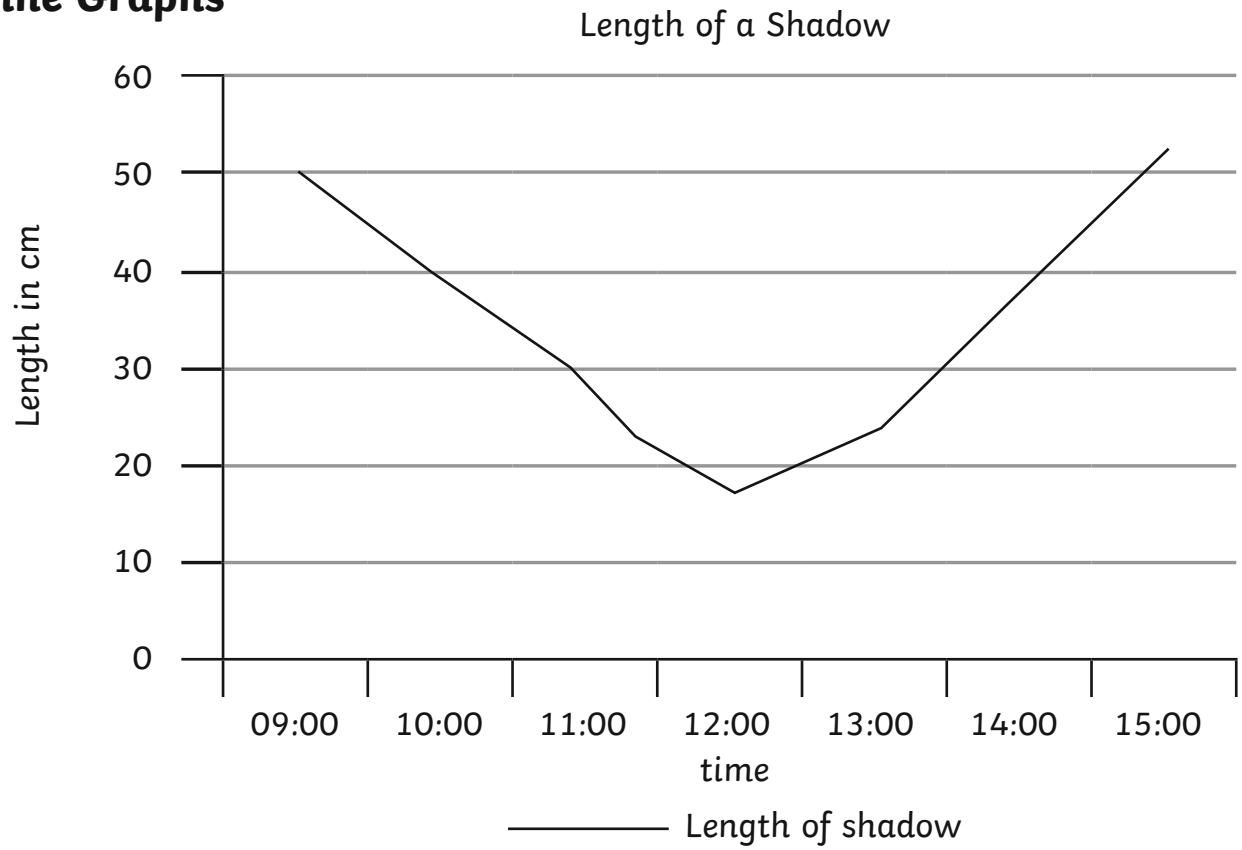
d) Which chocolate bar is the most popular? _____

Time Graphs



e) How many children had a school meal during the week? _____

Line Graphs



f) In which hour was the largest change in the length of the shadow? _____

Time Graphs

Train timetable from London to Newcastle

Destination	Journey A	Journey B	Journey C
London	10:20	11:30	16:40
Derby	12:20		18:00
Sheffield	12:40	13:10	18:30
Hull	13:20	13:55	19:15
Newcastle	14:25	14:40	

g) Which train takes the least time to get from London to Hull? _____

Number and Place Value

Counting

Count forwards and backwards in 4, 6, 7, 8, 9, 25, 50, steps of powers of 10 (10, 100, 1000, ...)

1. Continue the sequences:

   7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77

   625, 600, 575, 550, 525, 500, 475, 450, 425, 400

   57 382, 67 382, 77 382, 87 382, 97 382, 107 382, 117 382

2. Find 10, 100 or 1000 more or less than a given number

What is 100 less than 1902? What is 1000 more than 3249?

1802 4249

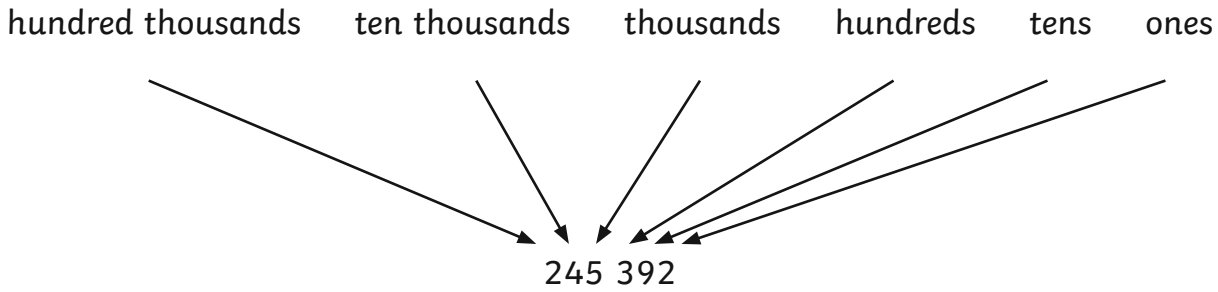
3. Count forwards and backwards through zero

   Continue the sequence:

   6, 5, 4, 3, 2, 1, 0, -1, -2, -3 -4, -5, -6, -7, -8.

Place Value

Recognise the place value of each digit in up to four-digit numbers



4. Underline the thousands digit in 2769.

   Underline the hundred thousands digit in 347 053.

   Underline the tens digit in 209 740.

Compare and Order Numbers

Compare using <, > or =

5. Write a number so that each sentence makes sense:

   141 141 > _____ **accept answers less than 141 141**

   144 114 = _____ **accept only 144 114**

   501 243 < _____ **accept answers more than 501 243**

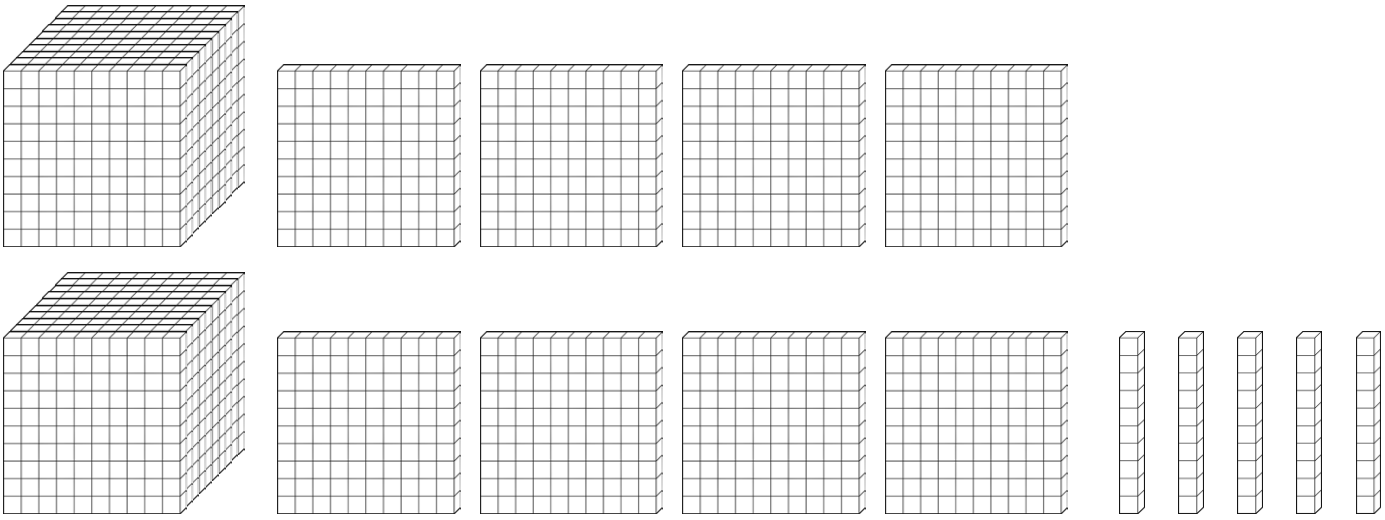
6. Order the following numbers from largest to smallest:

   Smallest **11 112** **11 211** **121 211** **122 121** **122 211** Greatest

Identify, Represent and Estimate

Use models and representations of numbers

7. What number is shown? **2840**



Rounding

Round numbers to the nearest 10, 100, 1000, 10 000 or 100 000

8. 4500 rounded to the nearest 1000 is **5000**

   253 450 to the nearest 10 000 is **250 000**

Read and Write Numbers in Numerals and Words

9. Complete the table:

Numerals	Words
344 285	Three hundred and forty-four thousand, two hundred and eighty-five
855 102	Eight hundred and fifty-five thousand, one hundred and two
622 916	six hundred and twenty-two thousand, nine hundred and sixteen
120 563	One hundred and twenty thousand, five hundred and sixty-three

Roman Numerals

10. Use the following Roman numerals to represent numbers to 100:

Roman	Numeral
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

CCXIX = 219

DCXXVI = 626

CMXLVIII = 948

MDCCCLXXI = 1871

Solve Problems

11. Here are 3 years written in Roman Numerals. Order the years from earliest to latest:

MCMXCIX (1999) MMIX (2009) MMXV (2015)

Addition and Subtraction

Add and Subtract Mentally

12. Add and subtract three-digit numbers and ones, tens and hundreds

376 + 3 = **379** 376 + 40 = **416** 376 + 200 = **576**

Mental Methods

13. Add and subtract numbers mentally with larger numbers

15 672 – 3200 = **12 472**

Formal Methods

14. Use a formal written method to calculate:

$$\begin{array}{rrrrrr} & 7 & 2 & 6 & 9 & 8 \\ + & 6 & 1 & 5 & 6 & 2 \\ \hline \mathbf{1} & \mathbf{3} & \mathbf{4} & \mathbf{2} & \mathbf{6} & \mathbf{0} \\ \hline \end{array}$$

$$\begin{array}{rrrrrr} & 8 & 4 & 9 & 3 & 5 \\ - & 1 & 2 & 4 & 2 & 3 \\ \hline & \mathbf{7} & \mathbf{2} & \mathbf{5} & \mathbf{1} & \mathbf{2} \\ \hline \end{array}$$

$$\begin{array}{rrrrrr} & {\scriptstyle 5}\not{6} & {\scriptstyle 1}4 & {\scriptstyle 7}\not{8} & {\scriptstyle 10}\not{1} & {\scriptstyle 1}2 \\ - & 2 & 9 & 3 & 6 & 4 \\ \hline & \mathbf{3} & \mathbf{5} & \mathbf{4} & \mathbf{4} & \mathbf{8} \\ \hline \end{array}$$

Estimate and Inverse

15. Estimate by rounding to check accuracy.
    Use the inverse to check the following calculations. Circle 'correct' or 'incorrect.'

    6470 + 1248 = 7718 **correct**/incorrect

    5905 - 2674 = 2231 correct/**incorrect**

Solve Problems

Multi-step problems

16. 8451 people visit a cinema on one day. There are two films showing. 3549 adults and 946 children see an adventure film, 1263 adults and a number of children see an animation.

    How many adults are there? **4812**

    How many children are there? **3639**

    How many children see the animation? **2693**

    How many more children see the animation than the adventure film? **1747**

Multiplication and Division

Multiplication Tables

17. Fill in the missing numbers:

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Multiplying and Dividing

18. Use knowledge of place value and related facts to solve these calculations:

400 × 5 = **2000** 630 ÷ 7 = **90**

Multiply by 0 and 1 and divide by 1:

285 × 1 =**285** 285 × 0 = **0** , 285 ÷ 1 = **285**

Multiplying and dividing whole numbers and decimals by 10, 100 and 1000:

45 × 10 = **450** 6.7 × 100 = **670** 902 × 1000 = **902 000**

59 ÷ 10 = **5.9** 4506 ÷ 100 = **45.06** 382 ÷ 1000 = **0.382**

Factor Pairs and Commutativity

19. What are all the factor pairs of 56? **1 and 56, 2 and 28, 4 and 14, 8 and 7**

    Use your factor pairs to solve:
    56 pencils are shared between 4 tables. How many pencils does each table receive?

    14

20. Change the order of the numbers in these calculation without changing the answer:

    5 × 9 × 2 = 90 **2 × 9 × 5 = 90, 2 × 5 × 9 = 90, 9 × 2 × 5 = 90, 9 × 5 × 2 = 90**

    6 × 3 ×10 = 180 **6 × 10 × 3 = 180, 10 × 3 × 6 = 180, 10 × 6 × 3 = 180**

Prime Numbers

21. List all the prime numbers up to 20. **2, 3, 5, 7, 11, 13, 17, 19**

    List all prime numbers between 20 and 30. **23, 29**

    What would be the first prime number after 100? **101**

Square and Cube Numbers

22. Write these numbers into the correct place in the table:
    9, 144, 27, 4, 1, 8, 100, 81, 125, 16, 25, 64, 121

Square Numbers	Cube Numbers
1	**1**
4	**8**
9	**27**
16	**64**
25	**125**
64	
81	
100	
121	

Formal Methods

23. Use formal written methods to multiply:

			2	7
		x		4
		1	0	8
			2	
		3	8	2
	x			7
	2	6	7	4
		5	1	
	2	4	7	1
x				6
1	4	8	2	6
	2	4		

24. a) Use the formal long multiplication method to calculate:

			2	7
		x	1	4
		1	0	8
		2	7	0
		3	7	8

b) Use a short division method to solve these problems:

			1	9				9	7	r	2
	4	7	6			5	4	8	7		

25. Fill in the missing numbers to complete the calculations.

15 × 3 = 45 or 56 ÷ **4** = 14

Word Problems:

26. A teacher has four new boxes of pencils, each with 12 pencils, and a tray with 37 pencils. The teacher shares equally all the pencils between 5 tables. How many pencils does each table receive? Show your working out below.

12 × 4 = 48 new pencils.

48 + 37 = 85 pencils in total.

85 ÷ 5 = 17 pencils per table.

Scaling Problems with Simple Fractions

27. 12 pizzas are cut into quarters. Into how many pieces of pizza will the pizzas be cut?

12 × 4 = 48 pieces

Correspondence problems

28. Jenna has 2 t-shirts and 4 pairs of shorts. How many different combinations of the t-shirts and shorts does Jenna have? **8 different combinations.**

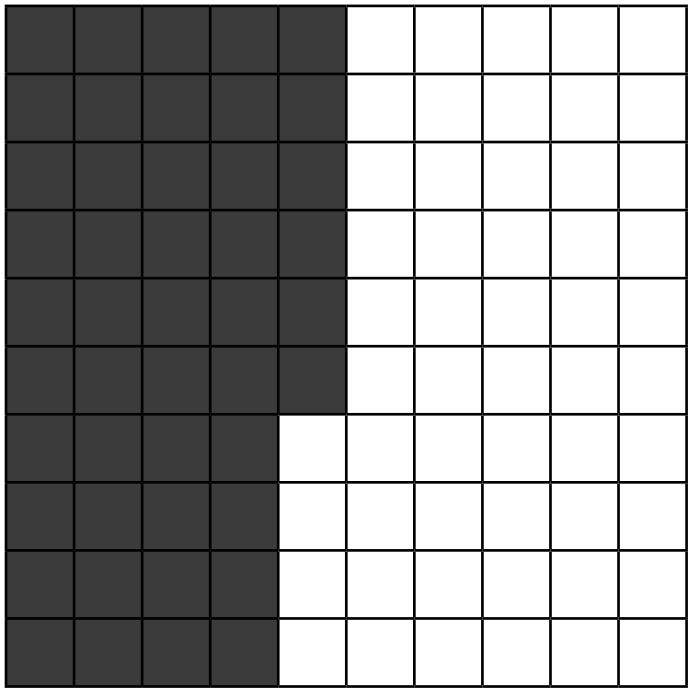
29. 120 pencils are shared equally between 3 classes. How many pencils will they each receive?

120 ÷ 3 = 40 pencils each.

Fractions

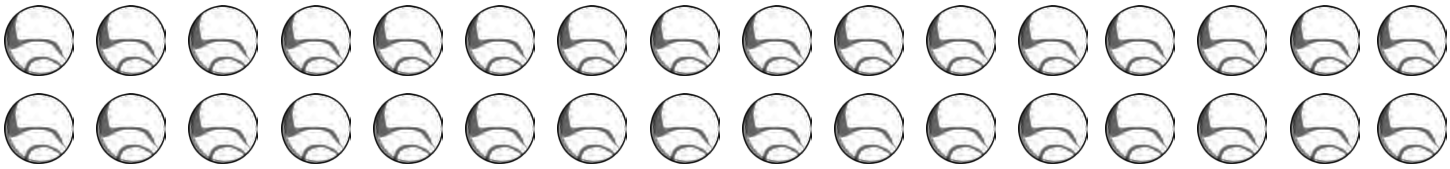
30. Shade to show 7/10:

Shade to show 46/100:



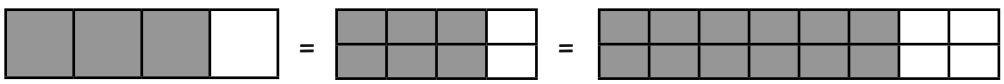
Equivalent Fractions

31. Find $\frac{5}{8}$ of these marbles by circling: **Accept 20 marbles circled**



Fraction of a Set of Marbles

32. Write in the missing fractions



$\frac{3}{4}$ $\frac{6}{8}$ $\frac{12}{16}$

1															
$\frac{1}{2}$								$\frac{1}{2}$							
$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$			
$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$

1															
$\frac{1}{3}$						$\frac{1}{3}$						$\frac{1}{3}$			
$\frac{1}{6}$				$\frac{1}{6}$				$\frac{1}{6}$				$\frac{1}{6}$			
$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$		$\frac{1}{12}$	
$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$

1															
$\frac{1}{5}$						$\frac{1}{5}$						$\frac{1}{5}$			
$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$	
$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$

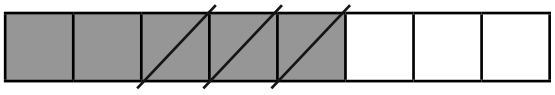
33. Write 3 fractions that are equivalent to $\frac{1}{3}$ $\frac{2}{6}$ $\frac{4}{12}$ $\frac{8}{24}$

Add and Subtract Fractions with the Same Denominator and with Denominators that are Multiples

34. Find the missing equivalent fractions.

$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$

$\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \frac{1}{4}$



Compare and Order

Unit fractions

35. a) Order these fractions from smallest to greatest:

smallest $\frac{1}{8}$ $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{3}$ greatest

b) Use <. > or = to compare these fractions:

$\frac{1}{5} < \frac{3}{5}$

$\frac{5}{8} > \frac{1}{4}$

Mixed Numbers and Improper Fractions

36. Write the improper fraction:

Mixed fraction $1\frac{2}{3}$ = - Improper fraction $\frac{5}{3}$

Multiply Fractions

37. Complete the missing fractions:

$\frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$

Decimal Equivalents

38. Complete the missing tenths, hundredths and decimals:

$\frac{7}{10} = 0.7$ $\frac{43}{100} = 0.43$

$\frac{1}{4} = 0.25$ $\frac{1}{2} = 0.5$ $\frac{3}{4} = 0.75$

Write decimals as a fraction:

$0.67 = \frac{67}{100}$

Division by 10 and 100

39.

2 ÷ 10 = **0.2** 2 ÷ 100 = **0.02** 25 ÷ 10 = **2.5** 25 ÷ 100 = **0.25**

Rounding Decimals

40. Round these decimals to the nearest whole number:

0.5 rounds to **1**

2.35 rounds to **2**

Round this decimal to one decimal place:

0.05 rounds to **0.1**

Read, Write, Order and Compare Decimals

41. Write the decimal in digits:

zero ones, four tenths and five hundredths. **0.45**

two ones, three tenths and four hundredths. **2.34**

Percentages

42. Complete the missing percentages:

50% = $\frac{50}{100}$ = $\frac{1}{2}$ 41% = $\frac{\mathbf{41}}{\mathbf{100}}$

Solve Problems

Fractions

43. Adil divides his marbles into tenths. He wants to give two friends an equal number of marbles but still have 3 times more than their individual amounts. What fractions could he split his marbles into?

$\frac{\mathbf{2}}{\mathbf{10}}$ + $\frac{\mathbf{2}}{\mathbf{10}}$ + $\frac{\mathbf{6}}{\mathbf{10}}$

Measure and Money Problems

44. a) Ellie buys a new shirt for £4.75 and a pair of trousers for £3.50 in a sale. She pays with a £10 note. What change will she receive?

Ellie will receive £1.75 in change.

b) A bag of potatoes weigh 2.45kg. How much will 4 bags weigh?

9.8kg

Decimal Problems to 3 Decimal Places

45. A packet of sugar weighs 1.348kg. $\frac{3}{4}$ kg is used to bake some cakes.

How much will the packet weigh now?

1.348kg – 0.75kg = 0.598kg

Knowing Percentage and Decimal Equivalents

46. Order the following from smallest to largest:

25%, 0.3, $\frac{2}{5}$

25%, $\frac{2}{5}$, 0.3

Measurement

Estimate, Measure, Compare, Add and Subtract

47.

Lengths (mm/cm/m)

Measure and draw lines using a ruler in centimetres (cm) or millimetres (mm).

This line is **9.5cm** or **95mm** long.

Mass (g/kg)

Measure the mass of objects using different scales

48. 3 apples weigh 435g. One is eaten, and the 2 remaining apples weigh 285g. What is the mass of the eaten apple? **150g**

Capacity (ml/l)

49.

Circle the jug which has more water:

75ml

90ml

Convert between units

50.

Complete the missing conversions:

Length:

1 km = **1000m**

1m = **100cm** or **1000mm**

1cm = **10mm**

Mass:

1kg = **1000g**

Capacity/ Volume:

1l = **1000ml**

Time:

1 year = **365** days

1 week = **7** days

1 day = **24** hours

1 hour = **60** minutes

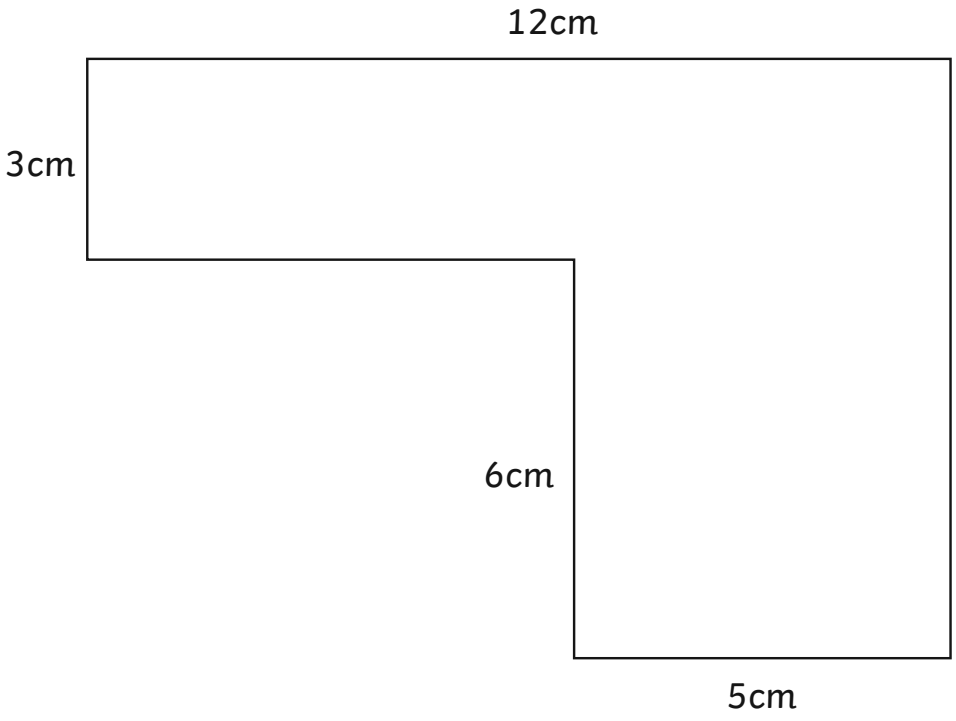
1 minute = **60** seconds

Perimeter

51. Calculate the perimeter:

Perimeter = 22cm.

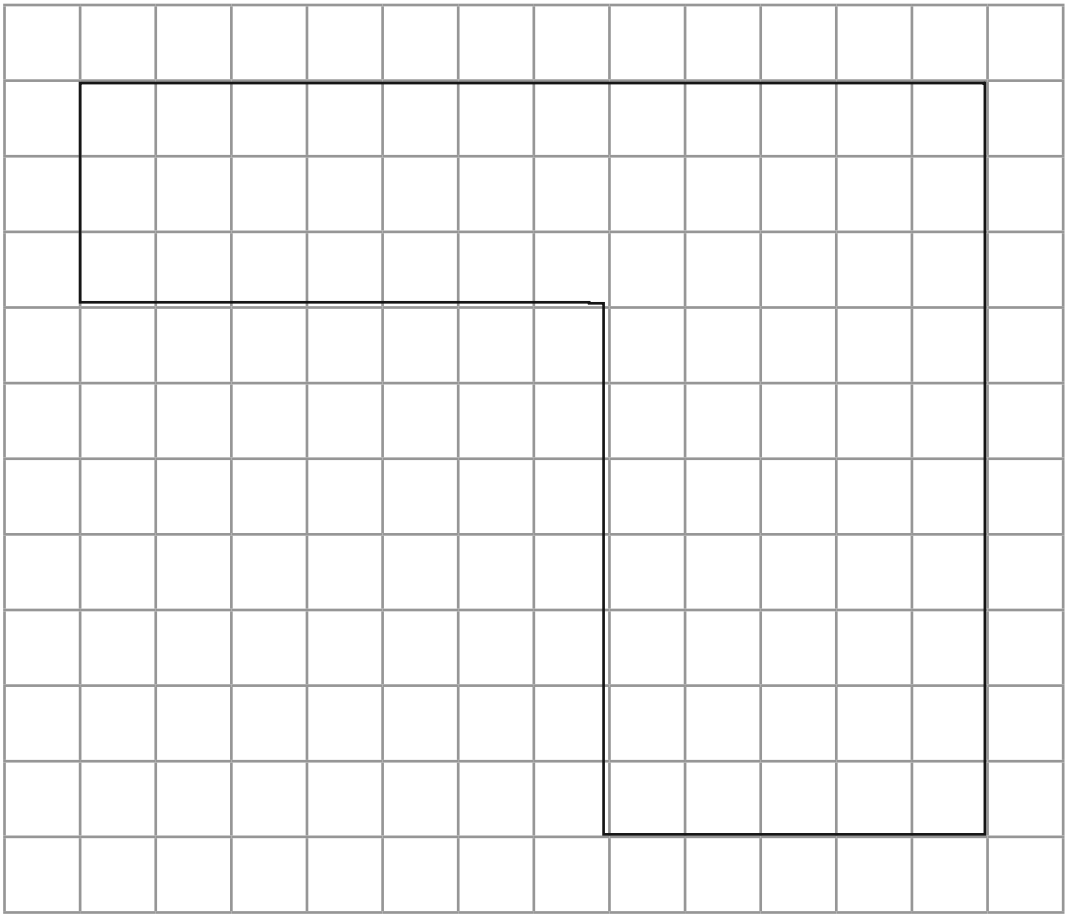
Measure and calculate the perimeter of rectilinear shapes (including squares)



Perimeter = 42cm.

Area

52. a) Calculate the area of this rectilinear shape by counting squares:

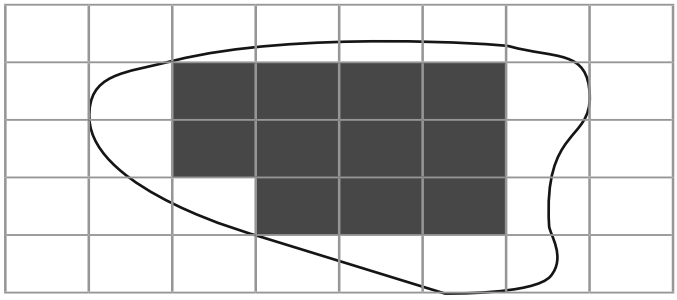


Area = 66cm²

b) Measure the sides of the rectangle and calculate the area:

Area = 8cm × 3cm = 24cm²

c) Estimate the area of this irregular shape:



Accept answers between 20cm² and 22cm²

Money

53. Add and subtract giving change

Jude buys a bag of apples for £2.25 and some avocados for £3.15. How much change will he get from £20?

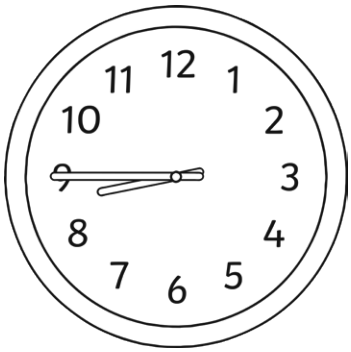
£2.25 + £3.15 = £5.40

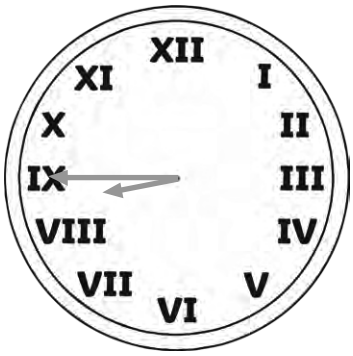
£20 - £5.40 = **£14.60**

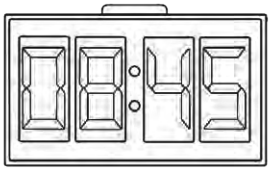
Time

54. Analogue clocks and 12/24 hour time

a) What time do these clocks show? **Quarter to 9, 08:45, or eight forty-five**







b) The maths lesson lasted 1 hour and 5 minutes. The art lesson was one hour and twenty minutes. Which lesson was longer and by how long? **The art lesson was longer by 15 minutes**

c) A film lasts 136 minutes. How long is the film in hours and minutes?

2 hours and 16 minutes

Solve Problems

55. a) 2 equal bottles of water contain 500ml of drink. How many litres will 7 bottles hold?

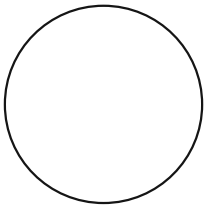
1.75 litres of water.

b) A 6.5kg bag of soil is divided into 20 pots equally. Each pot needs 0.5kg. How much more soil does each pot need after the bag is used up?

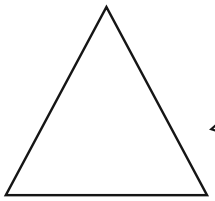
175g more soil is needed in each pot.

2D Shapes

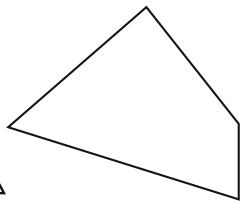
56. Label the shapes.



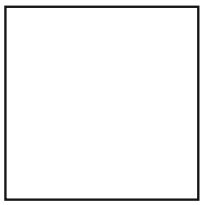
circle



triangle

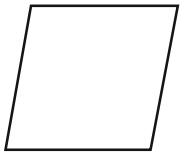


quadrilateral



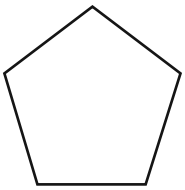
square

rectangle

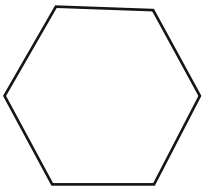


rhombus

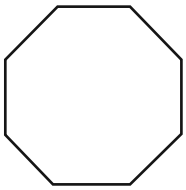
parallelogram



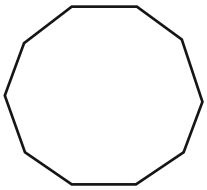
pentagon



hexagon

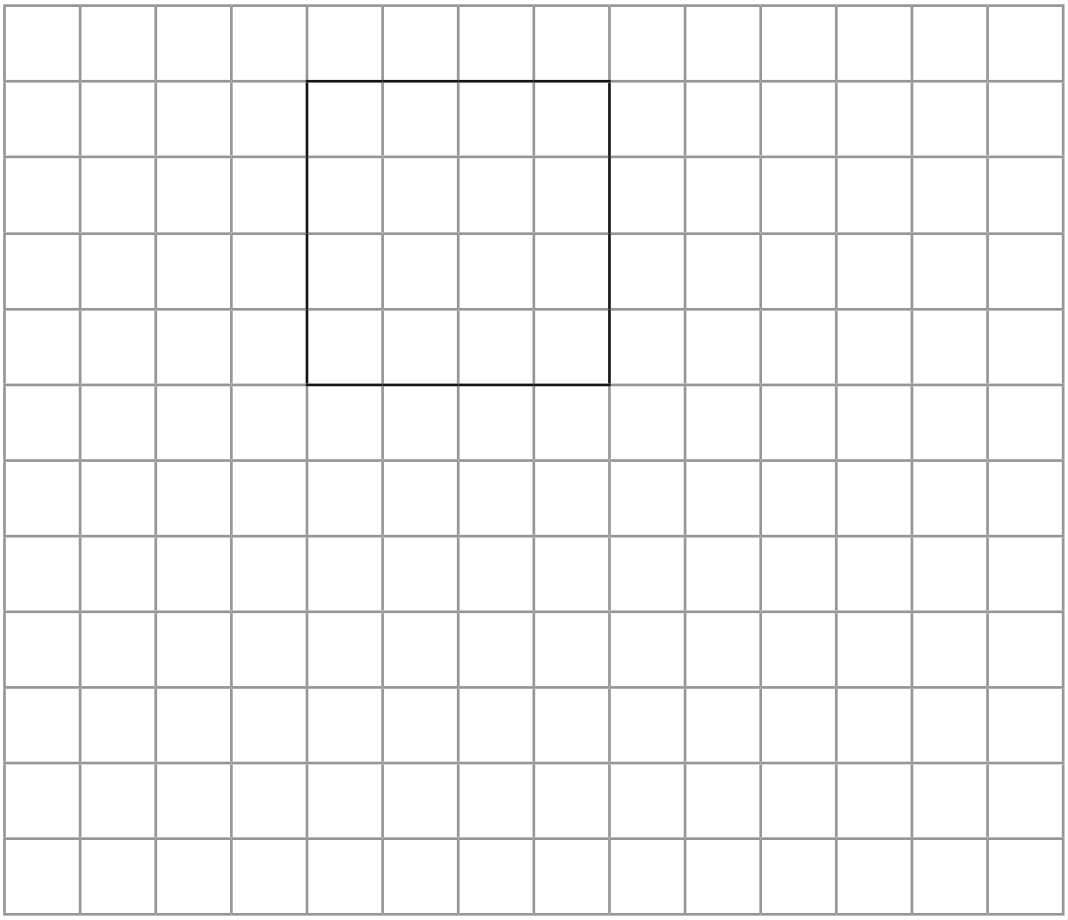


octagon

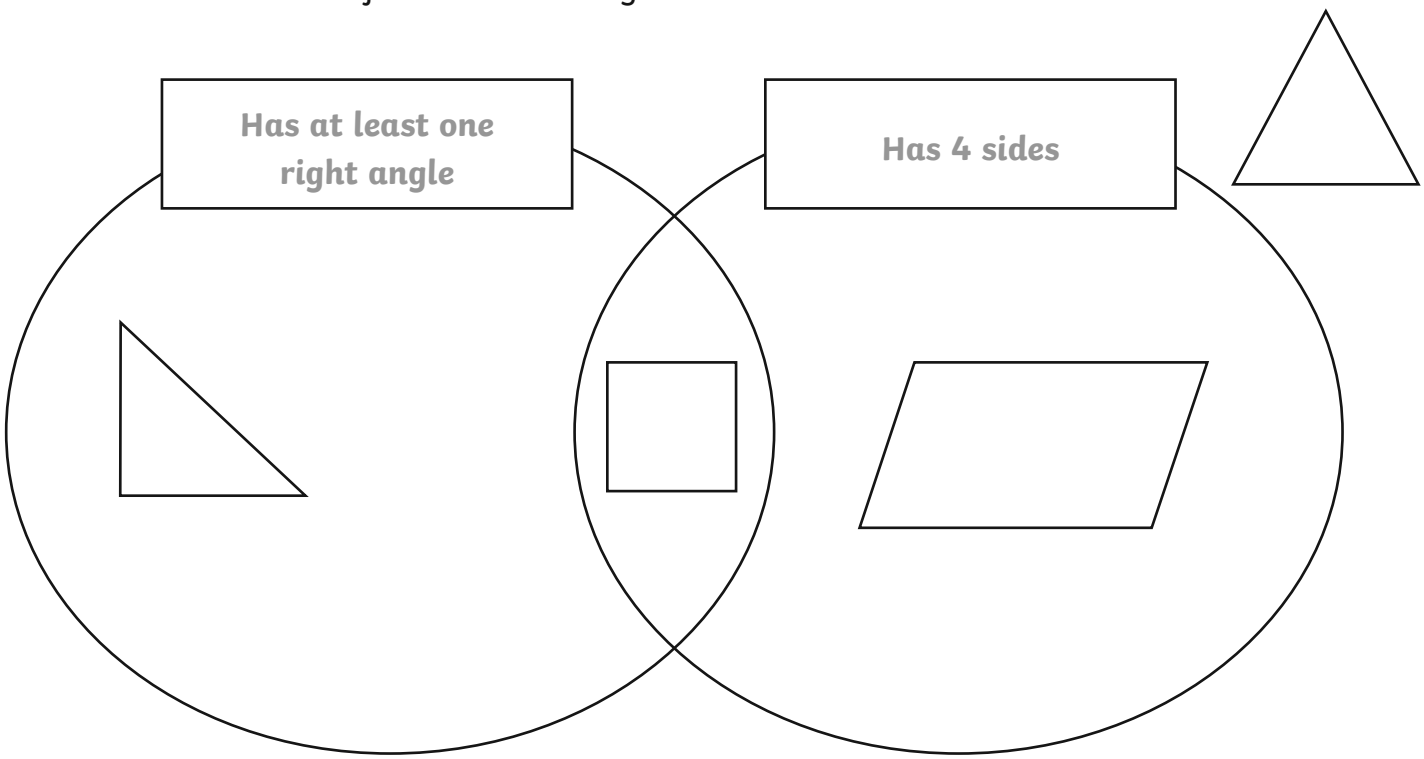


decagon

57. Draw a square on 1cm squared paper with sides of 4cm.



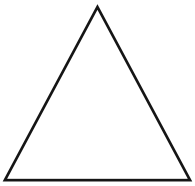
58. Write suitable titles for this Venn diagram:



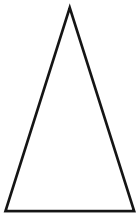
Triangles

59. Label the triangles.

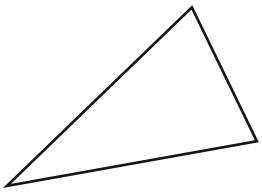
Equilateral (all sides and angles equal)



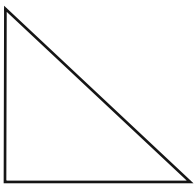
Isosceles (2 sides and angles equal)



Scalene (no sides and angles equal)

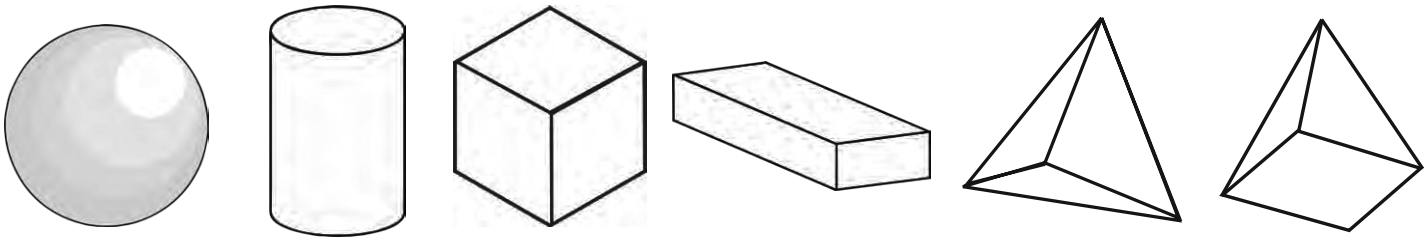


Right-angled triangle (no sides and angles equal)

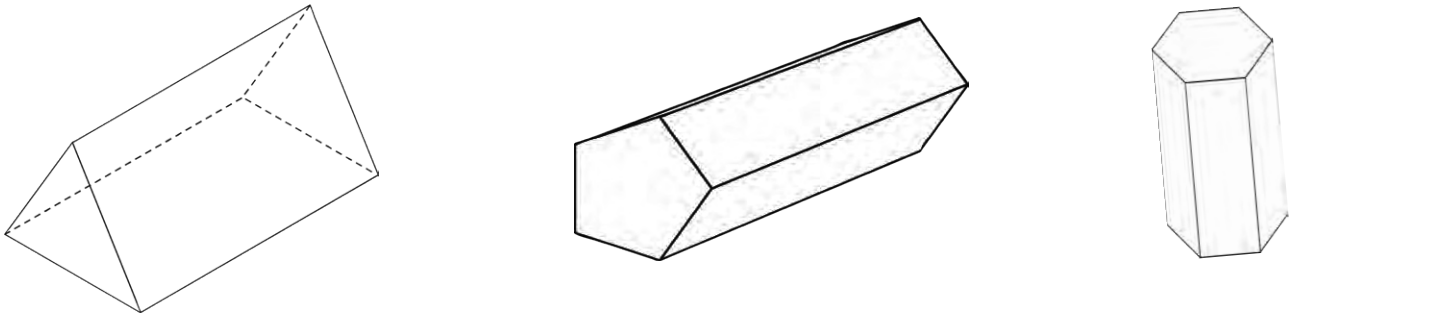


3D Shapes

60. Label the shapes:



sphere | cylinder | cube | cuboid | tetrahedron | square-based pyramid



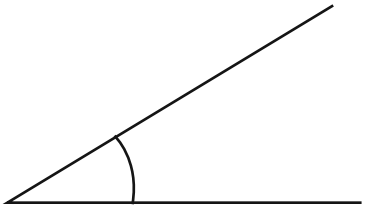
triangular prism | pentagonal prism | hexagonal prism

Recognise 2D representations and make models from modelling materials

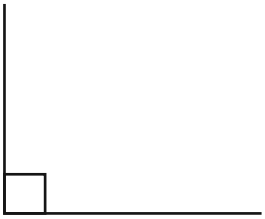
Angles

61. Complete the statements:

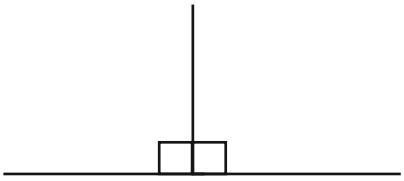
An **angle** measures a turn.



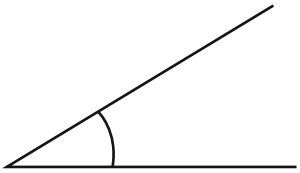
A **right angle** is the corner of a square.



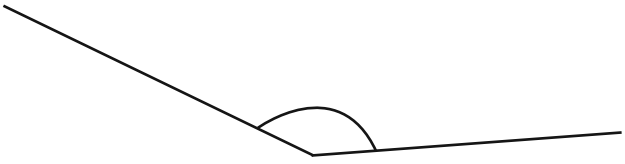
2 right angles make a straight line.



An **acute** angle is less than a right angle (90°).

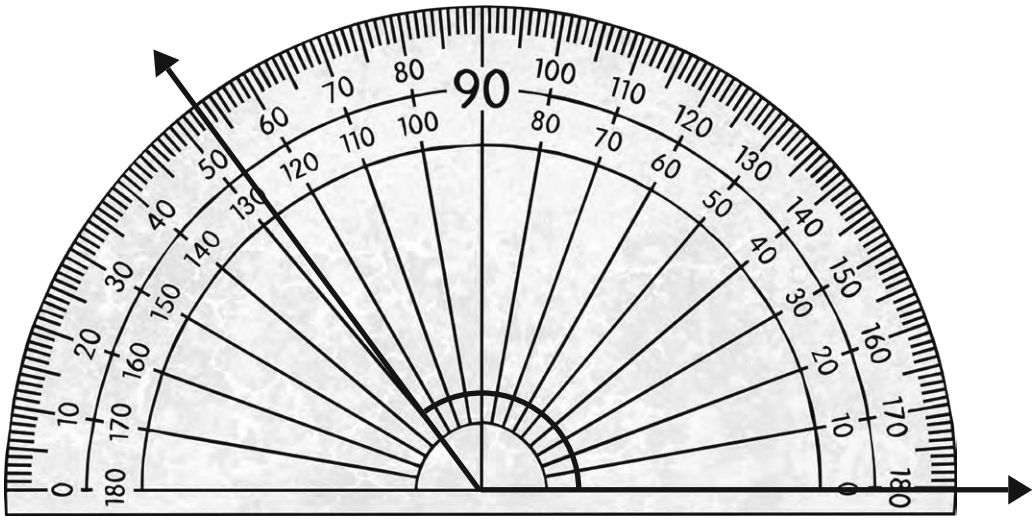


An **obtuse** angle is between a right angle and a straight line.



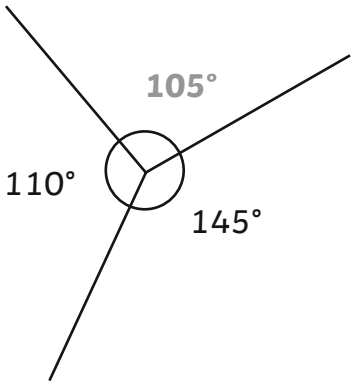
Draw and Measure Angles

62. a) Measure the angle:

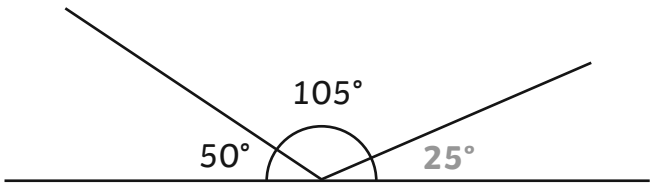


The angle measures **127°**

b) Calculate the missing angles:



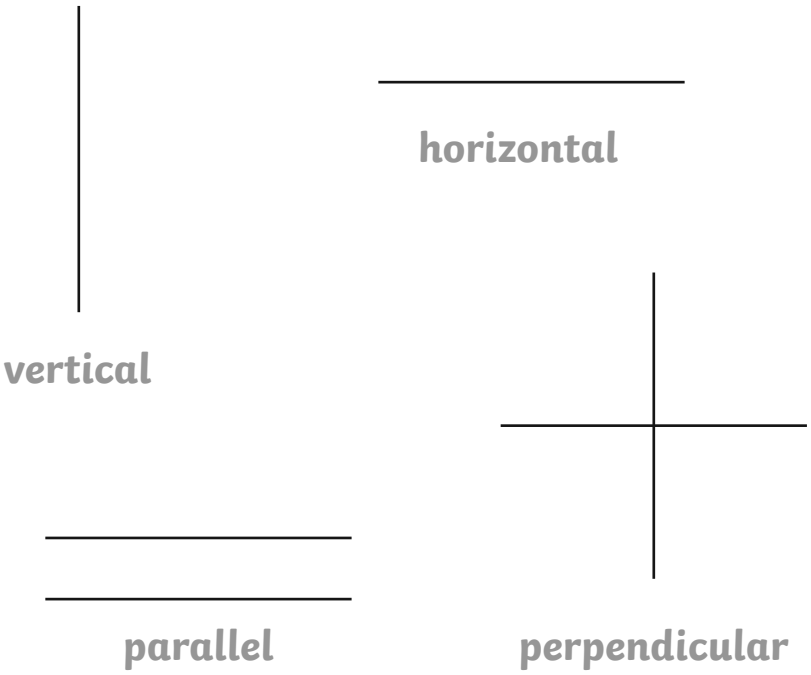
c)



One right angle = **90°** Two right angles = **180°** Three right angles = **270°**

Lines

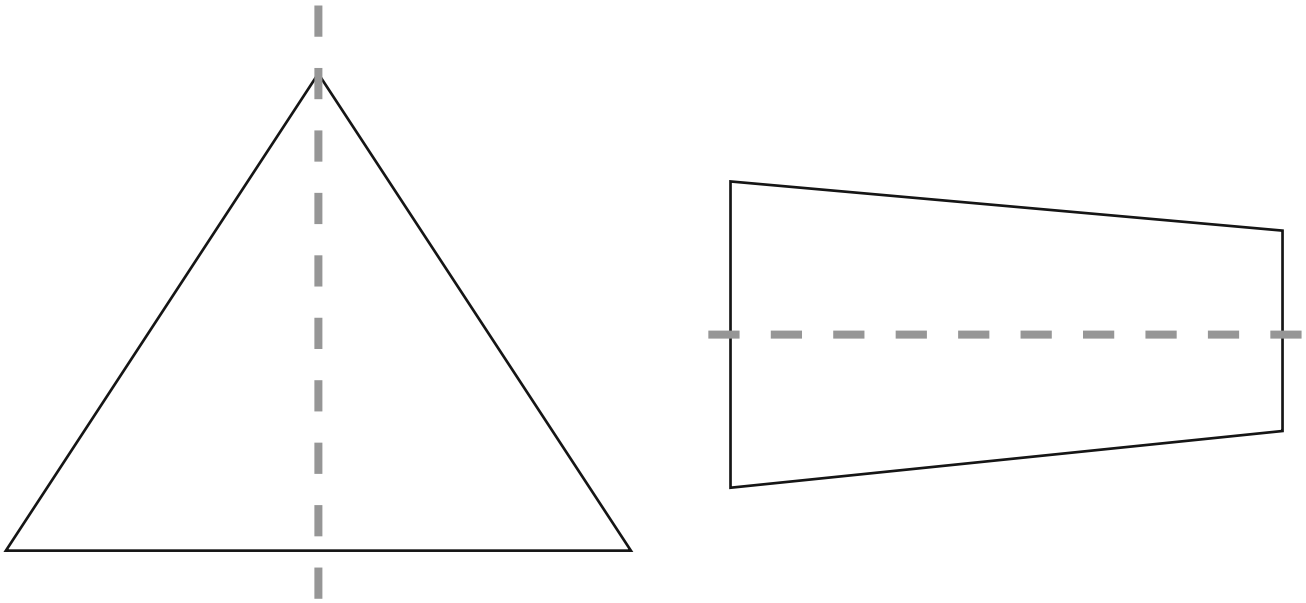
63. Label the lines using the word bank:



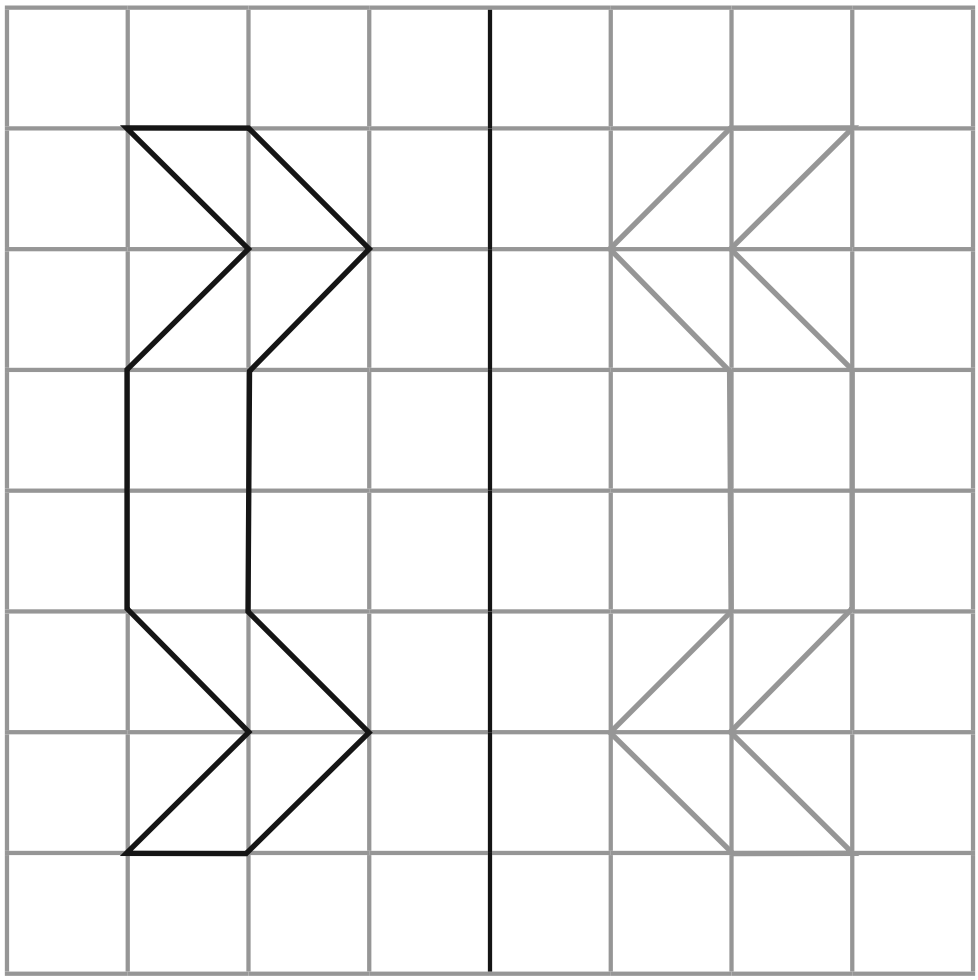
vertical
parallel
horizontal
perpendicular

Symmetry

64. Mark the lines of symmetry in these shapes:

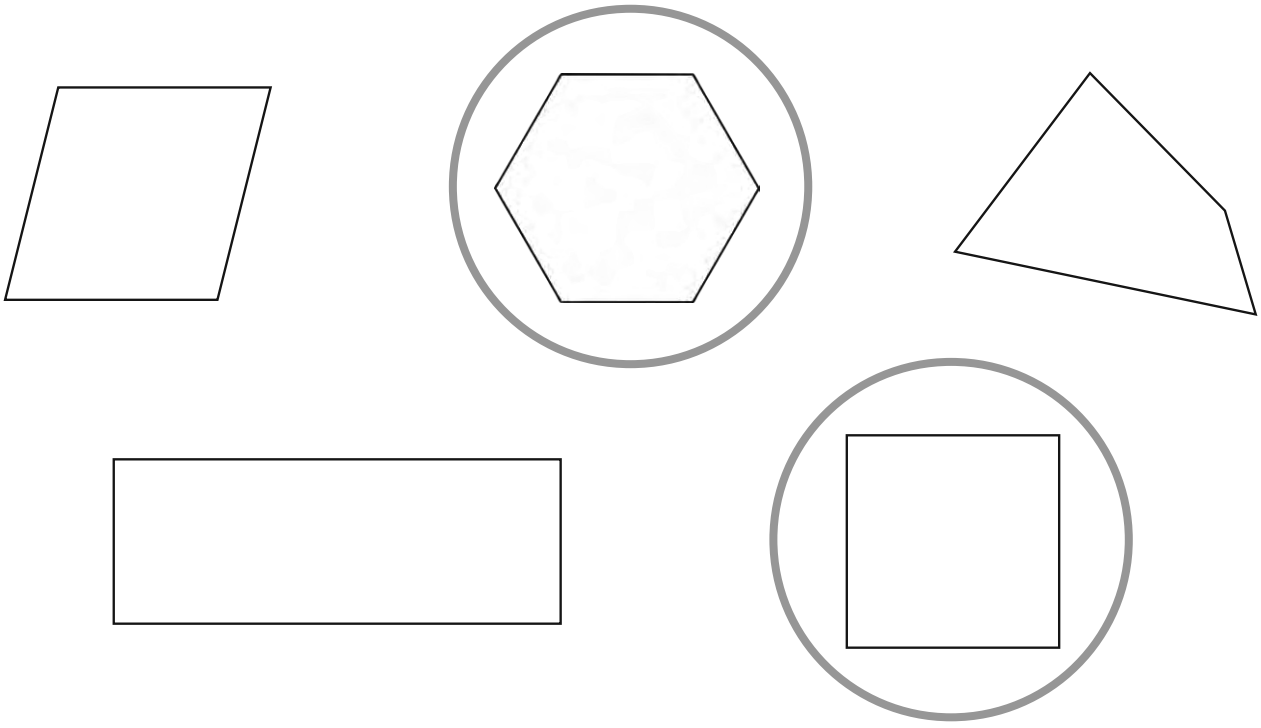


Complete the symmetrical figure:



Regular and Irregular Polygons

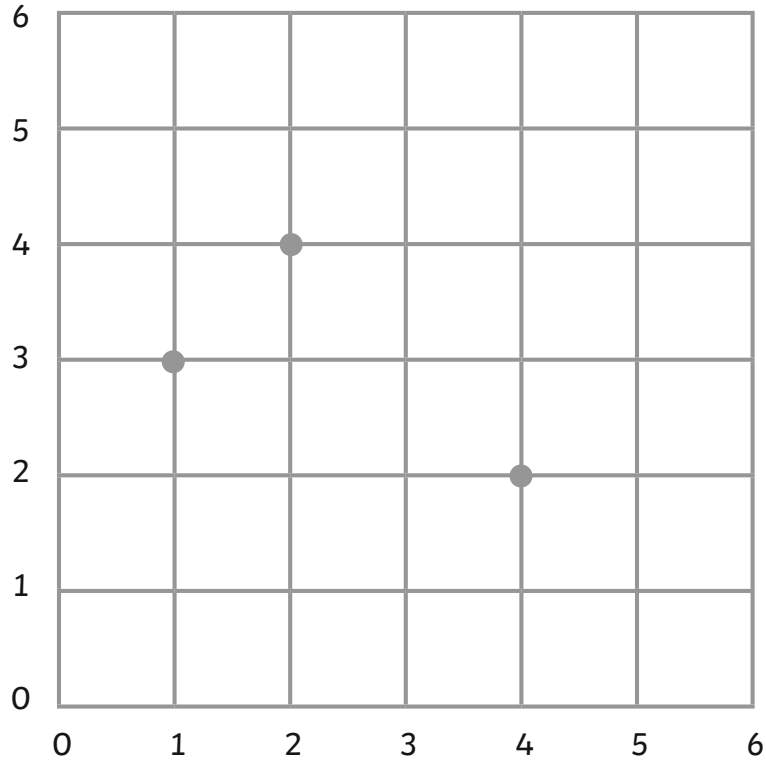
65. Circle the regular polygons:



Geometry – Position and Direction

Coordinates

66.



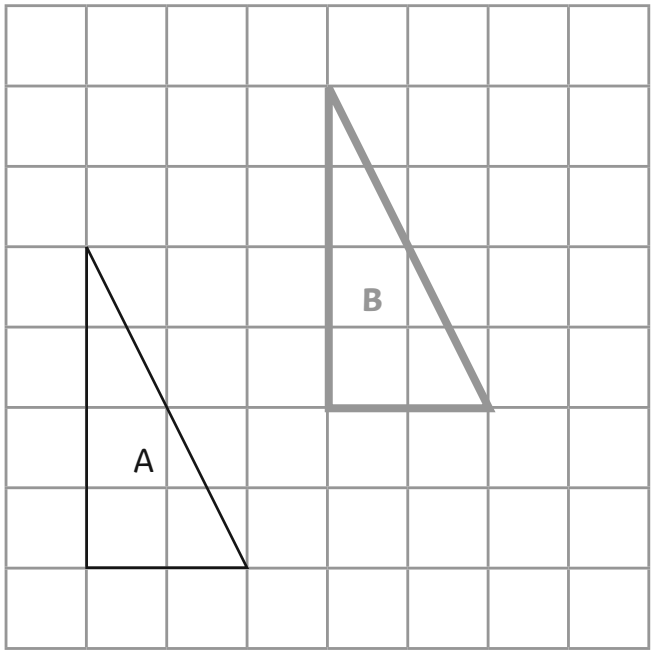
Label A, B and C The coordinates are

A (1,3)

B (2,4)

C (4,2)

Translation

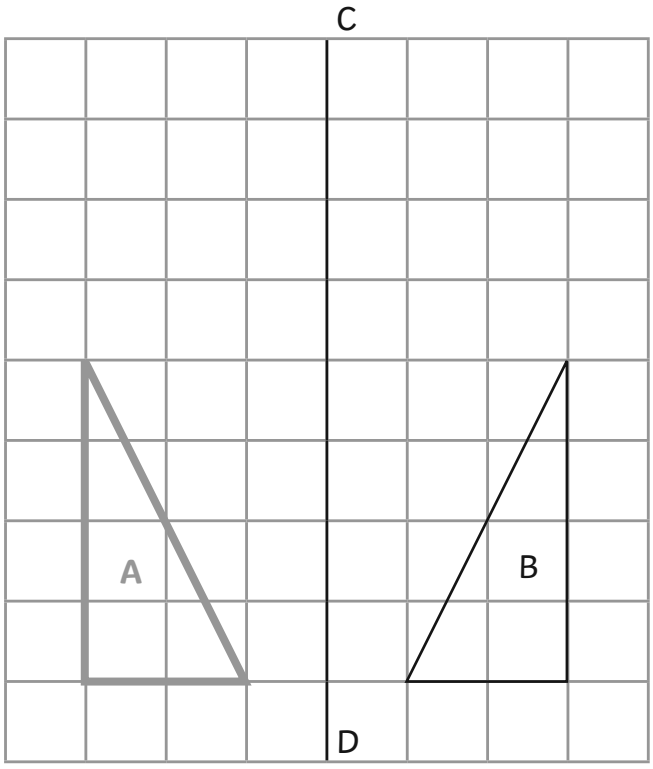


The triangle A is translated three squares to the right and two squares up to triangle B.

Mark triangle B

Reflection

What are the coordinates of the point that will complete a rectangle? **(3,1)**

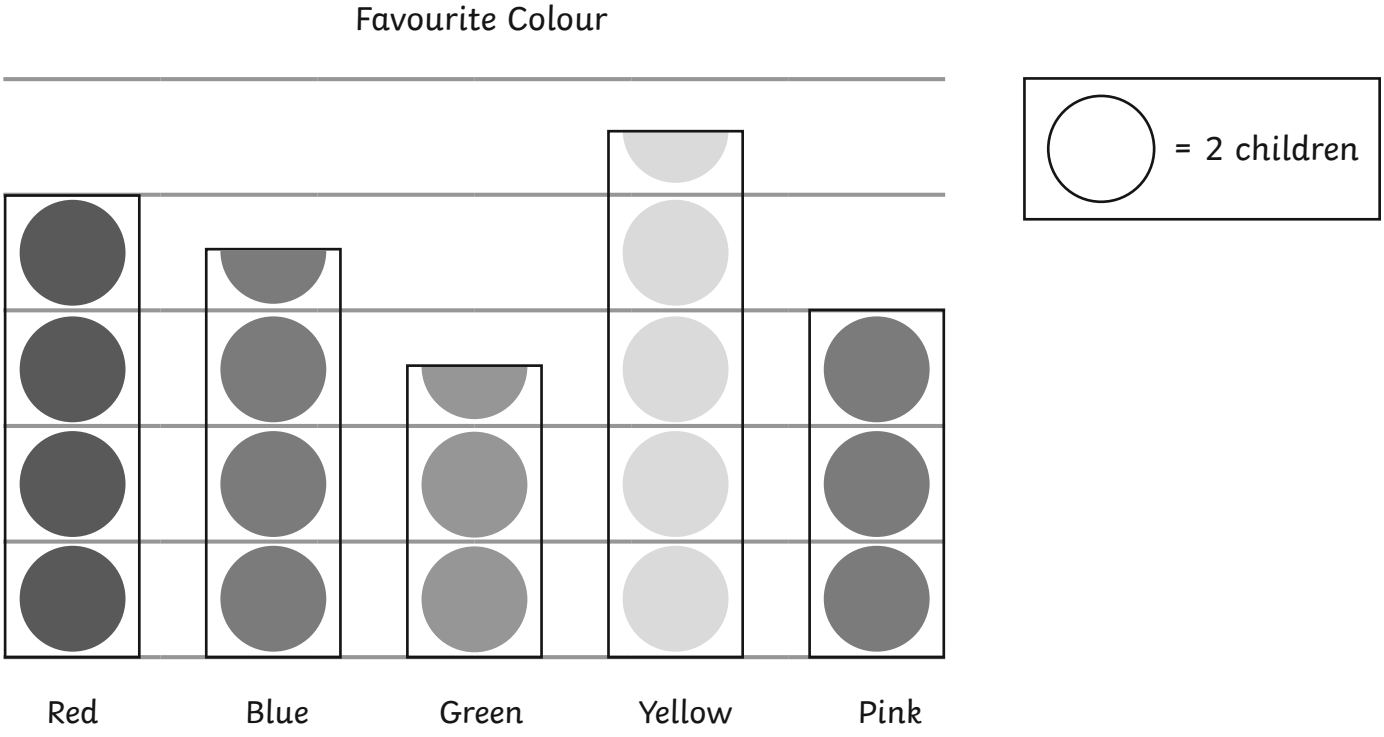


The triangle A is reflected about the line CD to triangle B.

Statistics

67. Present data in these graphs and tables and solve problems:

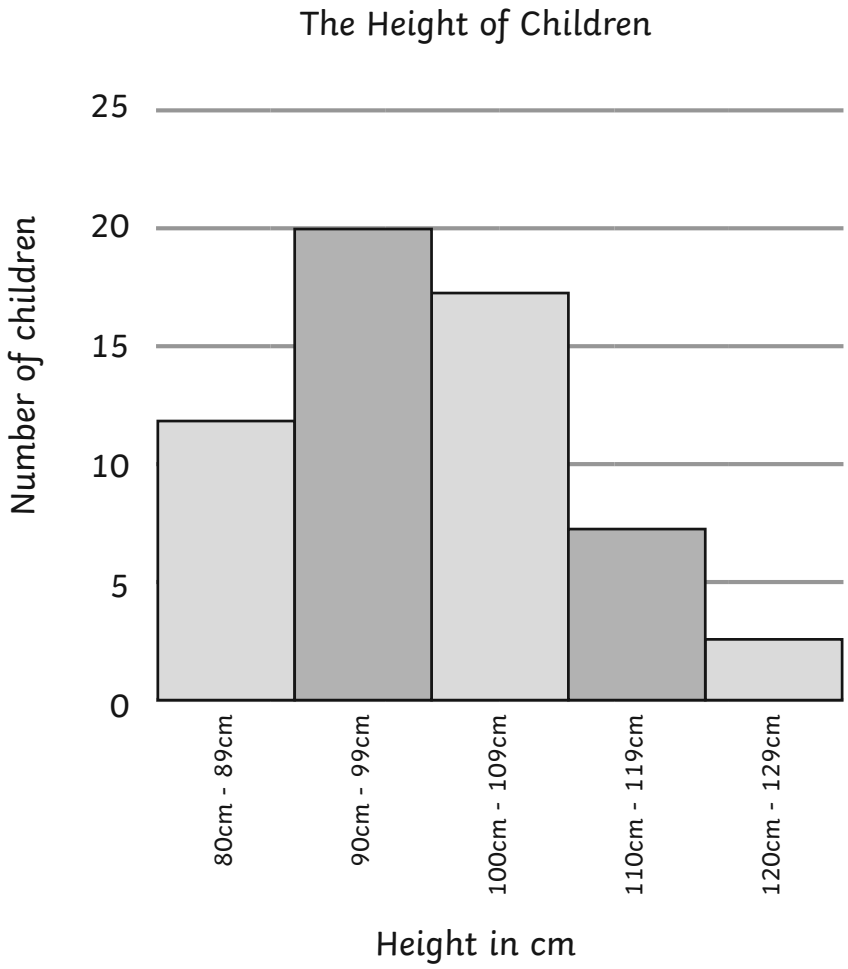
Pictograms



a) How many children chose their favourite colour? **35**

Bar Charts

b) How many more children chose cheese and onion as their favourite crisps than ready salted? **10** children



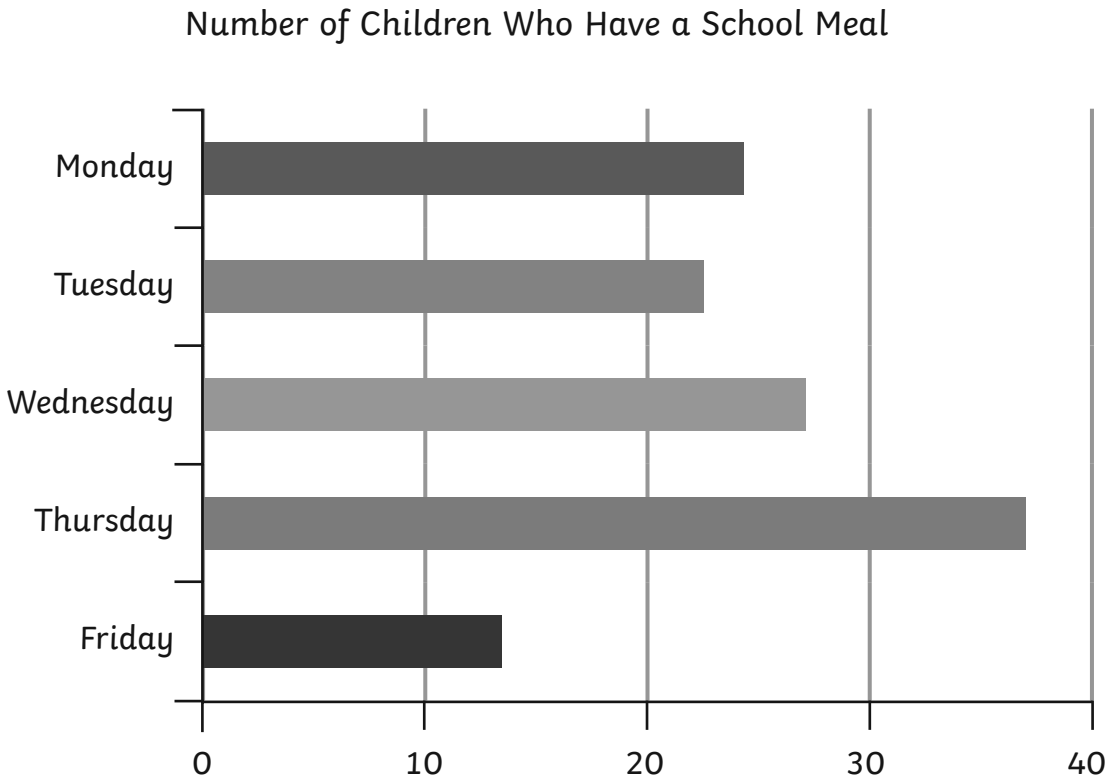
c) How many children are shorter than 1m? **32** or **33** children

Tables

	Monday	Tuesday	Wednesday	Thursday
Saturn	2	1	3	4
Twin	0	2	2	3
Stars	5	3	2	0
Cluster	2	2	2	2
Treasure	1	3	5	0
Tiger	6	3	4	1
Plimmy	1	3	2	2

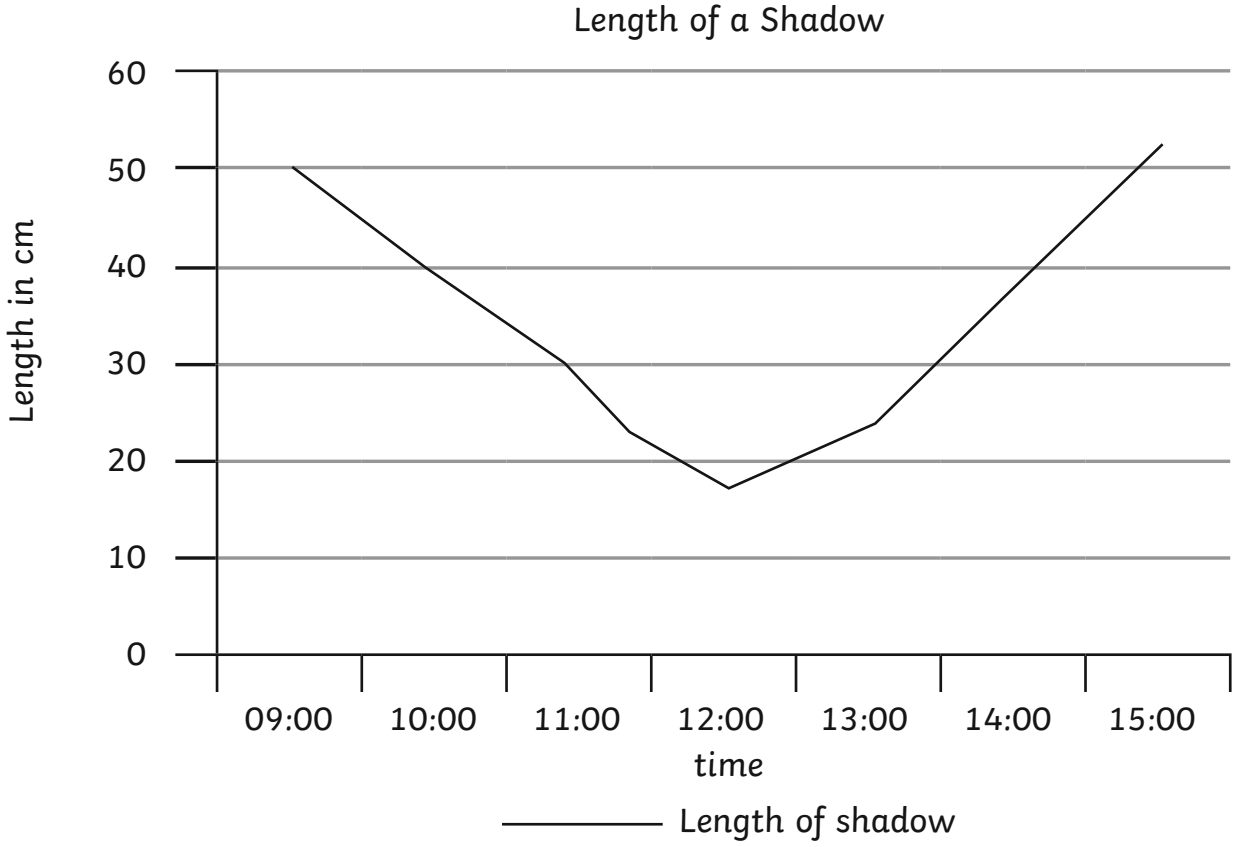
d) Which chocolate bar is the most popular? **Tiger**

Time Graphs



e) How many children had a school meal during the week? Approximately **126** children

Line Graphs



f) In which hour was the largest change in the length of the shadow? **Between 14:00 and 15:00**

Time Graphs

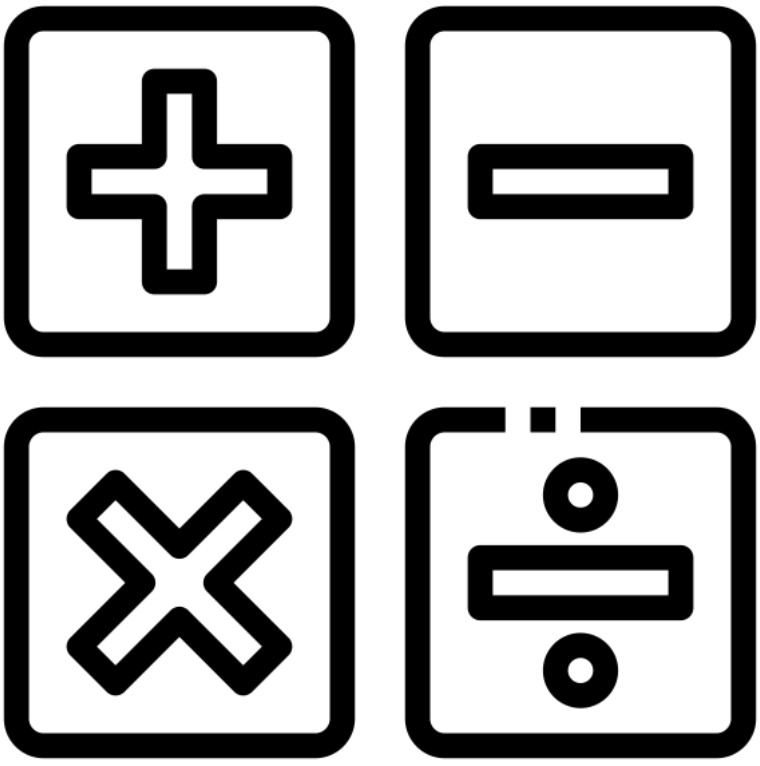
Train timetable from London to Newcastle

Destination	Journey A	Journey B	Journey C
London	10:20	11:30	16:40
Derby	12:20		18:00
Sheffield	12:40	13:10	18:30
Hull	13:20	13:55	19:15
Newcastle	14:25	14:40	

g) Which train takes the least time to get from London to Hull? **Journey B is the shortest**

MATHS HIGHER

Complete as many of the following tasks as possible.



Types of Numbers

Things to remember:

- A factor is a whole number that divides exactly into another number.
- A multiple is a number that may be divided by another a certain number of times without a remainder.
- A prime number only has 2 factors – 1 and itself.
- A power tells us how many times the base number has been multiplied by itself
- A root is the opposite of a power.
- A square number is the result of multiplying an integer (whole number) by itself.

Questions:

1. (a) Write down the square of 8

…….

(1)

(b) Write down the value of 10^3

…….

(1)

(c) Estimate the value of $\sqrt{20}$

…….

(1)

(Total for Question is 3 marks)

2. Here is a list of eight numbers: 4 5 14 25 29 30 33 39 40

From the list, write down

(i) a factor of 20

…….

(ii) a multiple of 10

…….

(iii) the prime number that is greater than 15

…….

(Total for Question is 3 marks)

3. Express 180 as a product of its prime factors.

…….

(Total for Question is 3 marks)

4. (a) Write down the value of 7^2

……
(1)

(b) Write down the value of $\sqrt{25}$

……
(1)

(c) Write down the value of 2^3

……
(1)
(Total for Question is 3 marks)

5. (a) Write down the value of $\sqrt{81}$

……
(1)

(b) Work out the value of $5^2 + 2^3$

……
(2)
(Total for Question is 3 marks)

6. Here is a list of numbers:
2 3 10 12 15 16 24
From the list write down
(i) an odd number

……
(1)

(b) a multiple of 6

……
(1)

(c) a factor of 18

……
(1)
(Total for Question is 3 marks)

7. Here is a list of numbers.
2 3 5 8 10 16 21 24
From the numbers in the list,

(a) write down an odd number

……
(1)

(b) write down the square number

……
(1)

(c) write down the number which is a multiple of 6

……
(1)
(Total for Question is 3 marks)

8. Here is a list of numbers.

1 2 4 5 7 11 13 14 15 17

From the list, write down three different prime numbers that add together to make 20

…….....

(Total for Question is 3 marks)

Place Value

Things to remember:
Label columns as below

Thousands	Hundreds	Tens	Units	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Questions:

1. (a) Write the number **seven thousand and twenty five** in figures.

…….....
(1)

(b) Write the number 9450 in words.

……..
(1)

(c) Write the number 28.75 to the nearest whole number.

…….....
(1)

(d) Write the number 7380 to the nearest thousand.

…….....
(1)
(Total for Question is 4 marks)

2. Write down the value of the 3 in the number 4376

…….....
(Total for question = 1 mark)

3. Write down the value of the 3 in 16.35

…….....
(Total for question is 1 mark)

4. (a) Work out 90 ÷ 10

…….....
(1)

(b) Write these numbers in order of size. Start with the smallest number.
2.8 4.71 0.6 13.4

……..
(1)

(c) Write $^{7}/_{10}$ as a decimal.

…….....
(1)
(Total for Question is 3 marks)

5. (a) Write these numbers in order of size. Start with the smallest number.
3517 7135 5713 1357

……..

(1)

(b) Write these numbers in order of size. Start with the smallest number.
0.354 0.4 0.35 0.345

……..

(1)

(Total for Question is 2 marks)

6. Here are four cards. There is a number on each card.

(a) Write down the largest 4-digit even number that can be made using each card only once.

…….....

(2)

(b) Write down all the 2-digit numbers that can be made using these cards.

……..

(2)

(Total for question is 4 marks)

7. (a) Write these numbers in order of size. Start with the smallest number.
3007 4435 399 4011 3333

……..

(1)

(b) Write these numbers in order of size. Start with the smallest number.
3.7 5.62 0.7 14.3

……..

(1)

(c) Write $\frac{9}{10}$ as a decimal.

…….....

(1)

(Total for question = 3 marks)

8. Write the following numbers in order of size. Start with the smallest number.
0.61 0.1 0.16 0.106

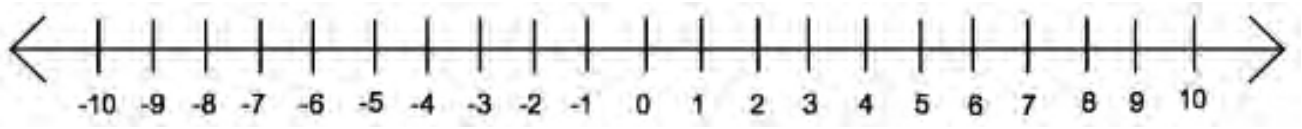
……..

(Total for question = 1 mark)

Directed Numbers

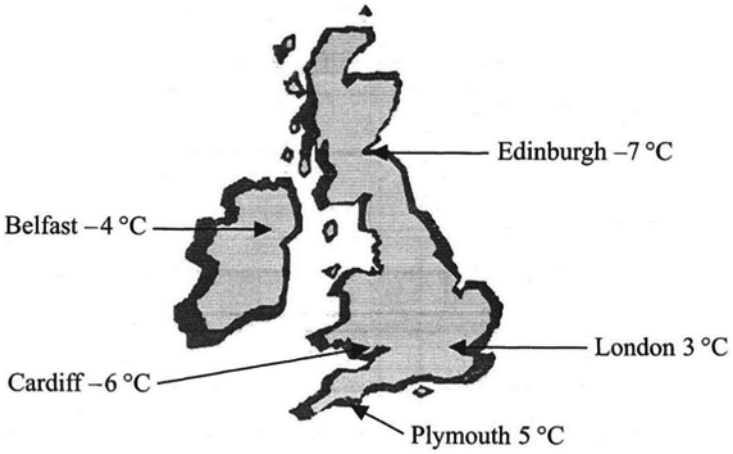
Things to remember:

- Mixed means minus!
- Use a number line – if you're adding you need to move in a positive direction (right), if you're subtracting you need to move in a negative direction (left).



Questions:

1. Here is a map of the British Isles.
The temperatures in some places, one night last winter are shown on the map.



(a) (i) Write down the names of the two places that had the biggest difference in temperature.

…..

…..

(ii) Work out the difference in temperature between these two places.

…..°C

(3)

(b) Two pairs of places have a difference in temperature of 2 °C.
Write down the names of these places.

(i) ….. and …..

(ii) ….. and …..

(2)

(Total 5 marks)

2. Sally wrote down the temperature at different times on 1st January 2003.

Time	Temperature
midnight	– 6 °C
4 am	–10 °C
8 am	– 4 °C
noon	7 °C
3 pm	6 °C
7 pm	–2 °C

(a) Write down

(i) the **highest** temperature,

…….°C

(ii) the **lowest** temperature.

…….°C

(2)

(b) Work out the difference in the temperature between

(i) 4 am and 8 am,

…….°C

(ii) 3 pm and 7 pm.

…….°C

(2)

At 11 pm that day the temperature had fallen by 5 °C from its value at 7 pm.

(c) Work out the temperature at 11 pm.

…….°C

(1)

(Total 5 marks)

3. The table shows the temperature on the surface of each of five planets.

Planet	Temperature
Venus	480 °C
Mars	– 60 °C
Jupiter	– 150 °C
Saturn	– 180 °C
Uranus	– 210 °C

(a) Work out the difference in temperature between Mars and Jupiter.

…….°C

(1)

(b) Work out the difference in temperature between Venus and Mars.

…….°C

(1)

(c) Which planet has a temperature 30 °C higher than the temperature on Saturn?

…….

(1)

The temperature on Pluto is 20 °C lower than the temperature on Uranus.

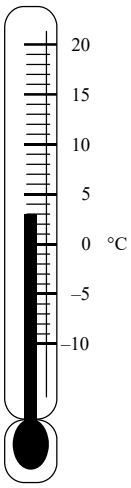
(d) Work out the temperature on Pluto.

…….°C

(1)

(Total 4 marks)

4. (a) Write down the temperature shown on the thermometer.



…….....°C
(1)

The temperature falls by 8°C.

(b) Work out the new temperature.

…….....°C
(1)
(Total 2 marks)

5. The table shows the highest and lowest temperatures one day in London and Moscow.

	Highest	**Lowest**
London	8°C	–6°C
Moscow	–3°C	–8°C

(a) Work out the difference between the **lowest** temperature in London and the **lowest** temperature in Moscow.

…….....°C
(1)

(b) Work out the difference between the **highest** and **lowest** temperature in London.

…….....°C
(1)
(Total 2 marks)

6. The table shows the midday temperatures in 4 different cities on Monday.

City	**Midday temperature (°C)**
Belfast	5
Cardiff	–1
Glasgow	–6
London	–4

(a) Which city had the lowest temperature?

…….....
(1)

(b) Work out the difference between the temperature in Cardiff and the temperature in Belfast.

…….....°C
(1)

By Tuesday, the midday temperature in London had risen by 7 °C.

(c) Work out the midday temperature in London on Tuesday.

…….....°C
(1)
(Total 3 marks)

7. Mr Snow stayed some time at the South Pole.
The highest temperature there was –30 °C.
The lowest temperature there was –57 °C.

(a) Work out the difference between the highest temperature and the lowest temperature at the South Pole.

…….°C
(1)

Mr Snow returned to his house in London.
The temperature outside his house was –2 °C.
The temperature inside his house was 12 °C higher.

(b) Work out the temperature inside his house.

…….°C
(1)
(Total 2 marks)

8. Write these temperatures in order. Start with the lowest temperature.

7ºC –2ºC 10ºC –5ºC 3ºC

……..
(Total for question = 1 mark)

Coordinates

Things to remember:
Along the corridor, up the stairs → (x,y)

Questions:

1. (a) Write down the coordinates of the point *P*.

(…….. , ……..)

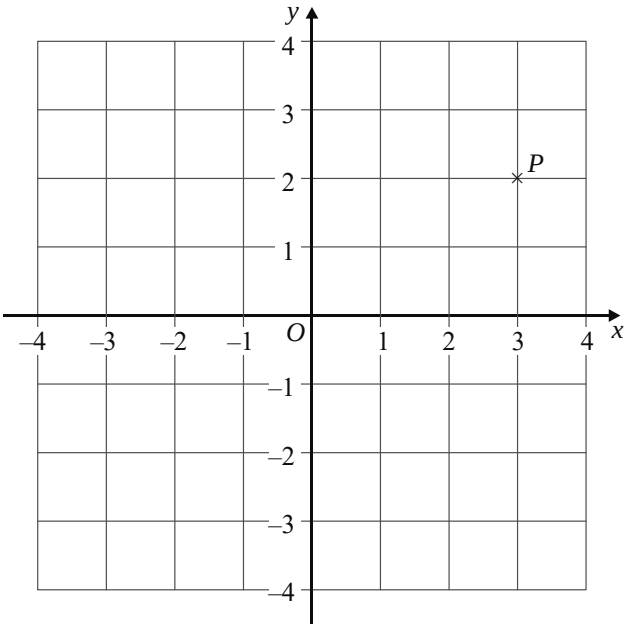
(1)

(b) (i) On the grid, plot the point (0, 3). Label the point *Q*.

(ii) On the grid, plot the point (–2, –3). Label the point *R*.

(2)

(Total 3 marks)



2. (a) Write down the coordinates of the point

(i) *A*,

(…… , ……..)

(ii) *B*.

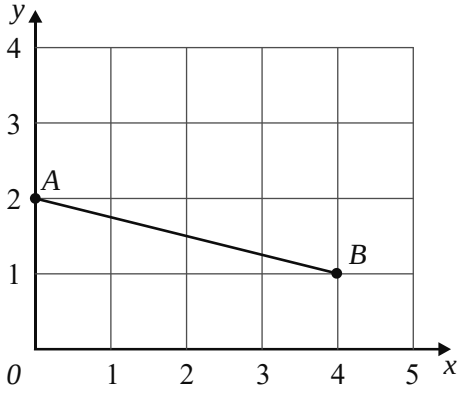
(…… , ……..)

(2)

(b) On the grid, mark with a cross (×) the midpoint of the line *AB*.

(1)

(Total 3 marks)



3. (a) (i) Write down the coordinates of the point A.

(……,……)

(ii) Write down the coordinates of the point *B.*

(……,……)

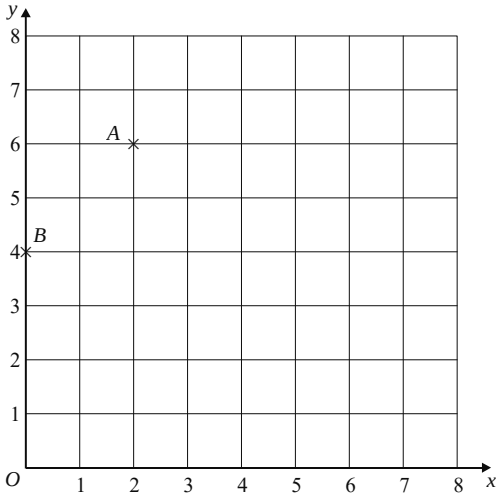
(2)

(b) (i) On the grid, mark the point (6, 4) with the letter *P.*

(ii) On the grid, mark the point (3, 0) with the letter *Q.*

(2)

(Total 4 marks)



4. (a) Write down the coordinates of the point

(i) *A*,

(..... , ...)

(ii) *C*.

(..... , ...)

(2)

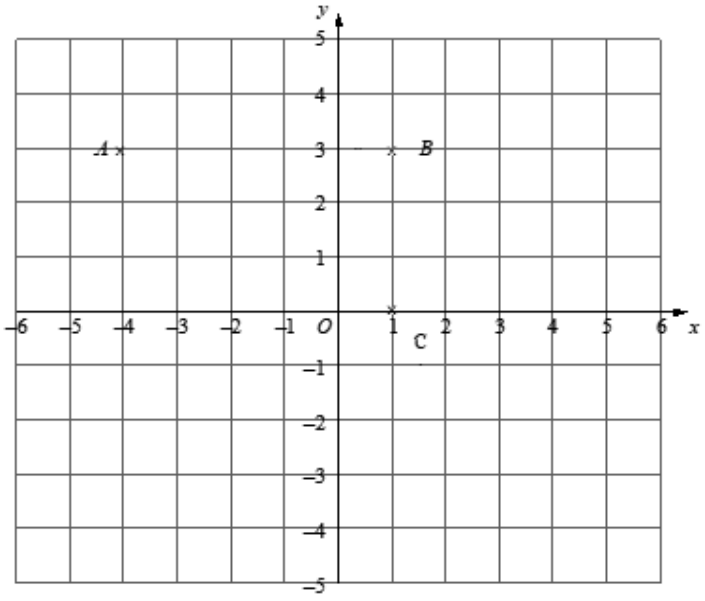
(b) (i) On the grid, mark the point *D* so that *ABCD* is a rectangle.

(ii) Write down the coordinates of *D*.

(..... , ...)

(2)

(Total 4 marks)



5. (a) Write down the coordinates of the point *A*.

(..... , ...)

(1)

(b) Write down the coordinates of the point *B*.

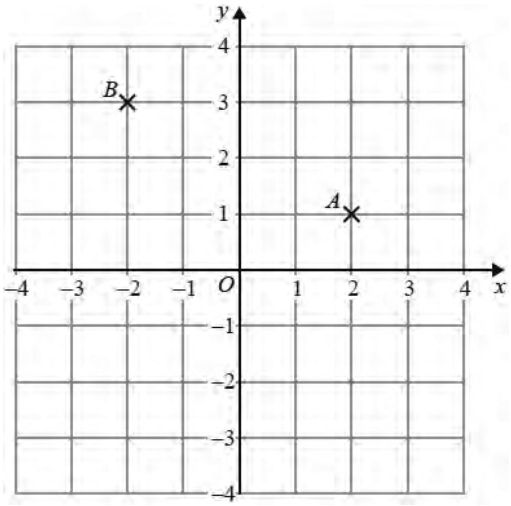
(..... , ...)

(1)

(c) On the grid, mark with a cross (×) the point (−3, −1). Label this point *C*.

(1)

(Total for question = 3 marks)



6. (a) (i) Write down the coordinates of the point *A*.

(..... , ...)

(ii) Write down the coordinates of the point *B*.

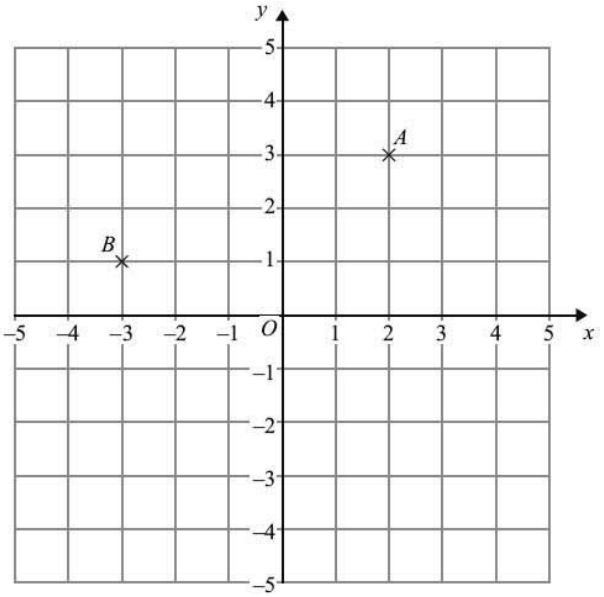
(..... , ...)

(2)

(b) On the grid, mark with a cross the point (3, –4). Label this point *C*.

(1)

(Total for Question is 3 marks)



7. (a) Write down the coordinates of the point P.

(…….. , ……..)

(1)

(b) Write down the coordinates of the point R.

(…….. , ……..)

(1)

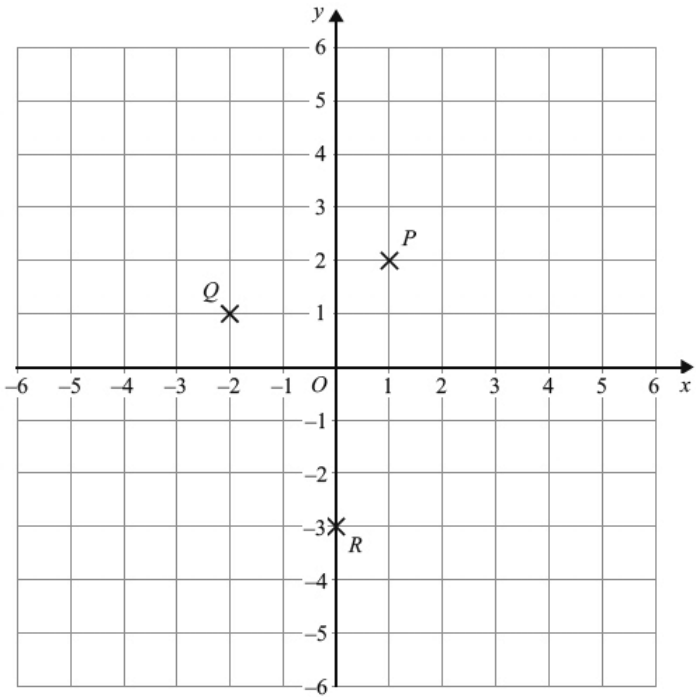
P, Q and R are three vertices of a parallelogram.

(c) Write down the coordinates of the fourth vertex of this parallelogram.

(…….. , ……..)

(1)

(Total for Question is 3 marks)



8. (a) Write down the coordinates of point B.

(…….. , ……..)

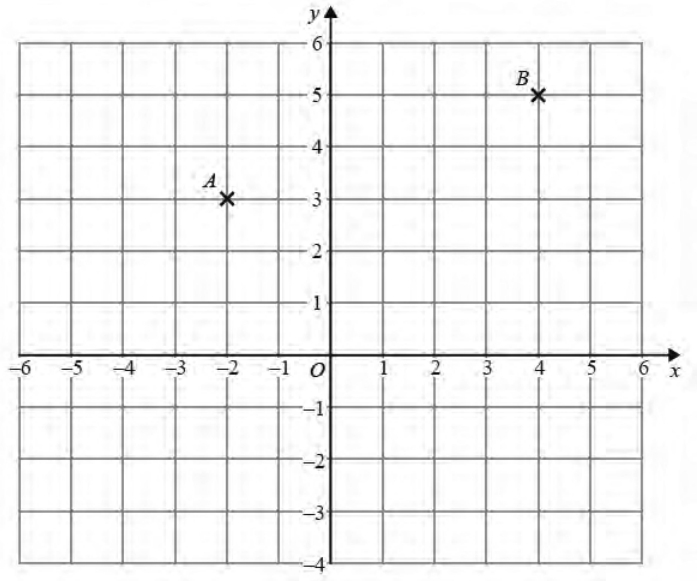
(1)

(b) Find the coordinates of the midpoint of AB.

(…….. , ……..)

(1)

(Total for question = 2 marks)



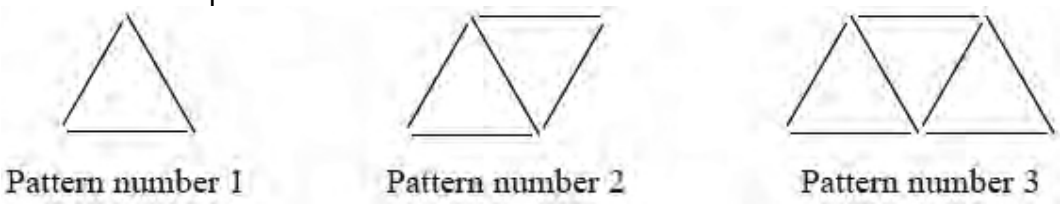
Patterns and Sequences

Things to remember:

- If there is a pattern, look carefully at how many sticks/blocks are being added on each time.
- Work out the rule (for example: add 4 or multiply by 2) to help you work out the next term.

Questions:

1. Here are some patterns made from sticks.



Pattern number 1 Pattern number 2 Pattern number 3

In the space below, draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	3	5	7		

(1)

(c) How many sticks make Pattern number 15?

…….

(1)

(Total for Question is 3 marks)

2. Here are the first four terms of a number sequence.

6 10 14 18

(a) Write down the next term in this sequence.

…….

(1)

(b) Find the 10th term in this sequence.

…….

(1)

(c) The number 101 is **not** a term in this sequence. Explain why.

…….

…….

(1)

(Total for Question is 3 marks)

3. Here are the first four terms of a number sequence.

3 7 11 15

(a) Write down the next term of this sequence.

…….....

(1)

The 50th term of this number sequence is 199

(b) Write down the 51st term of this sequence.

…….....

(1)

The number 372 is **not** a term of this sequence.

(c) Explain why.

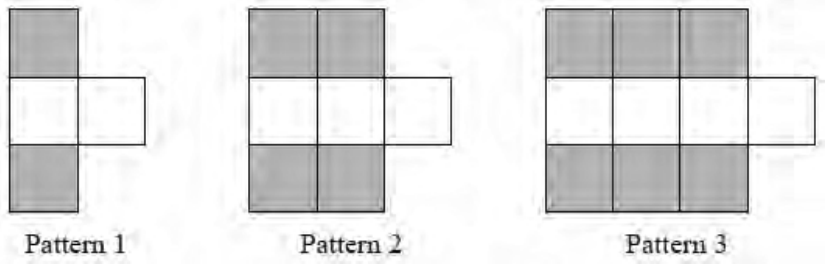
…….....

…….....

(1)

(Total for Question is 3 marks)

4. Here are some patterns made from white centimetre squares and grey centimetre squares.



(a) In the space below, draw Pattern 4

(1)

(b) Find the number of grey squares in Pattern 6

…….....

(1)

A Pattern has 20 grey squares.

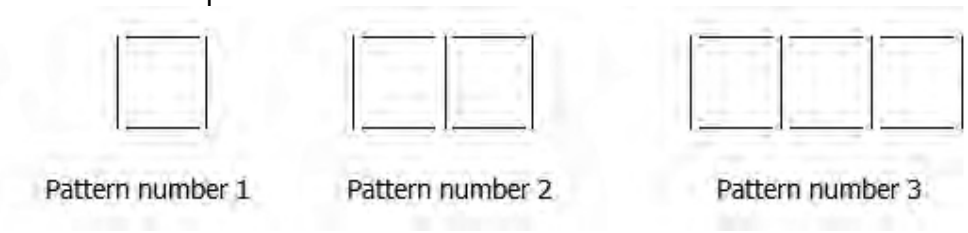
(c) Work out how many white squares there are in this Pattern.

…….....

(2)

(Total for Question is 4 marks)

5. Here are some patterns made from sticks.



(a) Draw Pattern number 4 in the space below.

(1)

(b) How many sticks are needed for Pattern number 12?

….....

(2)

Sunil says that he will need 70 sticks for Pattern number 20

(c) Is Sunil correct? You must give a reason for your answer.

….....

….....

….....

(2)

(Total for Question is 5 marks)

6. Here are the first 6 terms of a number sequence.

5 9 13 17 21 25

(a) Write down the next term of the sequence.

….....

(1)

(b) (i) Work out the eleventh term of the sequence.

….....

(ii) Explain how you found your answer.

….....

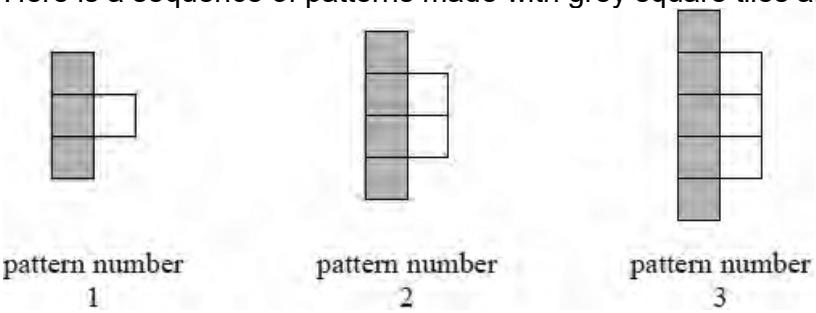
….....

….....

(2)

(Total for Question is 3 marks)

7. Here is a sequence of patterns made with grey square tiles and white square tiles.



(a) In the space below, draw pattern number 4

(1)

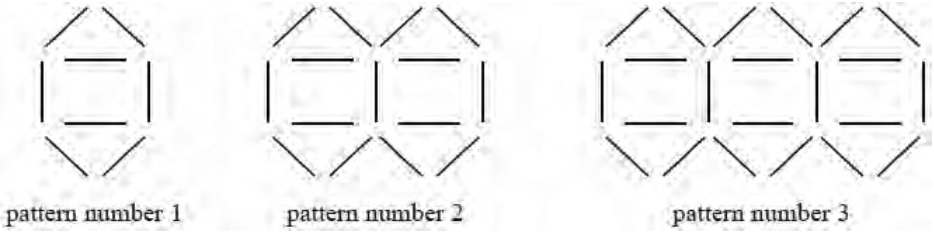
(b) Find the total number of tiles in pattern number 20

…….

(2)

(Total for question is 3 marks)

8. Here is a sequence of patterns made from sticks.



(a) In the space below, draw pattern number 4

(1)

(b) How many sticks are needed for pattern number 10?

…….

(2)

(Total for question = 3 marks)

Collecting Like Terms (Simplifying)

Things to remember:

- 2a means a + a or 2 lots of a
- a^2 means a x a
- The sign (+ or -) belongs to the term following it. You may find it easier to identify like terms using two different highlighters.

Questions:

1. (a) Simplify $a + a + a + a$

…….

(1)

(b) Simplify $3 \times c \times d$

…….

(1)

(c) Simplify $3ef + 5ef - ef$

…….

(1)

(Total for Question is 3 marks)

2. (a) Simplify $b + b + b + b$

…….

(1)

(b) Simplify $8n - 3n$

…….

(1)

(c) Simplify $3 \times c \times d$

…….

(1)

(d) Simplify $3x + 7y + 2x - y$

…….

(2)

(Total for Question is 5 marks)

3. Simplify $3x + 5y + x + 4y$

…….

(Total for Question is 2 marks)

4. (a) Simplify $a \times c \times 3$

…….....

(1)

(b) Simplify $p \times p \times p$

…….....

(1)

(c) Simplify $5x - 4y + 3x - 3y$

…….....

(2)

(Total for Question is 4 marks)

5. (a) Simplify $5a - 2a$

…….....

(1)

(b) Simplify $3 \times 4y$

…….....

(1)

(c) Simplify $3e + 4f + 2e - f$

…….....

(2)

(Total for Question is 4 marks)

6. (a) Simplify $m + m + m$

…….....

(1)

(b) Simplify $9e - 2e$

…….....

(1)

(c) Simplify $5 \times 3g$

…….....

(1)

(Total for Question is 3 marks)

7. (a) Simplify $d + d + d + d$

…….....

(1)

(b) Simplify $3 \times e \times f$

…….....

(1)

(c) Simplify $2x + 3y + 3x - y$

…….....

(2)

(Total for question = 4 marks)

8. (a) Simplify $f + f + f + f - f$

…….....

(1)

(b) Simplify $2m \times 3$

…….....

(1)

(c) Simplify $3a + 2h + a + 3h$

…….....

(2)

(Total for Question is 4 marks)

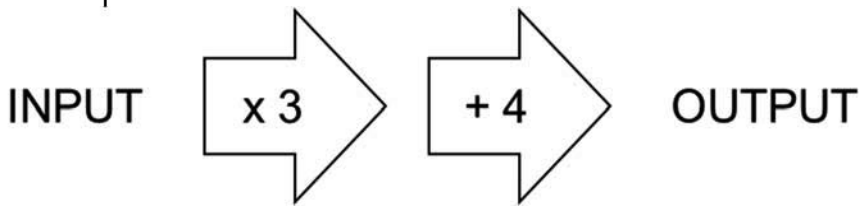
Solving Linear Equations

Things to remember:

- "Solve" means to find the value of the variable (what number the letter represents).
- The inverse of + is – and the inverse of x is ÷
- Work one step at a time, keeping you = signs in line on each new row of working.

Questions:

1. A two step function machine is shown.



(a) When the input is -4, what is the output?

…….....

(1)

(b) If the output is 25, what was the input?

…….....

(1)

(c) If the input is n, what is the output?

…….....

(2)

(Total for Question is 4 marks)

2. You can use this rule to work out the total cost of hiring a car.

Total cost = £4 per hour plus £12

Arun hires a car for 5 hours.

(a) Work out the total cost.

£…….....

(2)

Raj hires a car.

The total cost is £40

(b) Work out how many hours Raj hires the car for.

……..... hours

(3)

(Total for Question is 5 marks)

3. (a) Solve $6g = 18$

$g =$ . . . . . .

(1)

(b) Solve $5h + 7 = 17$

$h =$ . . . . . .

(2)

(Total for Question is 3 marks)

4. (a) Solve $x + 9 = 19$

$x =$ . . . . . .

(1)

(b) Solve $2y = 17$

$y =$ . . . . . .

(1)

(c) Solve $\frac{w}{4} = 8$

$w =$ . . . . . .

(1)

(Total for Question is 3 marks)

5. (a) Solve $\frac{n}{7} = 2$

$n =$ . . . . . .

(1)

(b) Solve $3g + 4 = 19$

$g =$ . . . . . .

(2)

(Total for Question is 3 marks)

6. (a) Solve $4x = 20$

$x =$ . . . . . .

(1)

(b) Solve $y - 9 = 17$

$y =$ . . . . . .

(1)

(Total for question = 2 marks)

7. Solve $3x + 7 = 1$

$x =$ . . . . . .

(Total for question = 2 marks)

8. Solve $4x + 5 = x + 26$

$x =$ . . . . . .

(Total for question = 2 marks)

Inequalities

Things to remember:

- < means less than
- > means greater than
- ≤ means less than or equal to
- ≥ means greater than or equal to
- An integer is a whole number
- On a number line, use a full circle to show a value can be equal, and an empty circle to show it cannot.

Questions:

1. $-2 < n \leq 3$

n is an integer.

Write down all the possible values of n.

.....

(Total for Question is 2 marks)

2. (a) n is an integer.

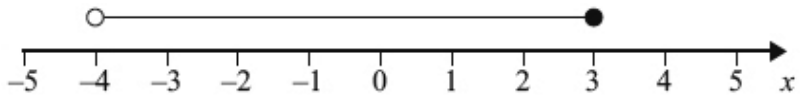
$-1 \leq n < 4$

List the possible values of n.

.....

(2)

(b)



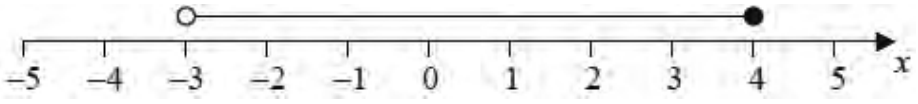
Write down the inequality shown in the diagram.

.....

(2)

(Total for Question is 4 marks)

3. Here is an inequality, in x, shown on a number line.

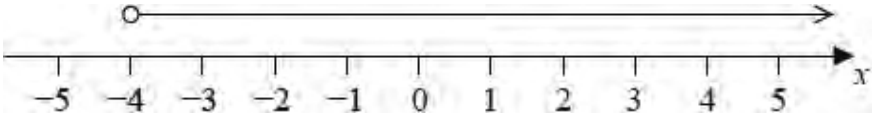


Write down the inequality.

.....

(Total for Question is 2 marks)

4.



(a) Write down the inequality represented on the number line.

…….....

(1)

(b) $-3 \leq n < 2$
$-2 < m < 4$
n and m are integers.
Given that $n = m$, write down all the possible values of n.

…….....

(2)
(Total for question = 5 marks)

5. $-5 < y \leq 0$
y is an integer.
Write down all the possible values of y.

…….....

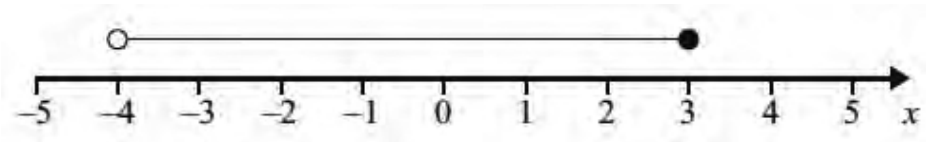
(Total for Question is 2 marks)

6. (a) n is an integer.
$-1 \leq n < 4$
List the possible values of n.

…….....

(2)

(b)



Write down the inequality shown in the diagram.

…….....

(2)
(Total for Question is 4 marks)

7. $-4 < n \leq 1$

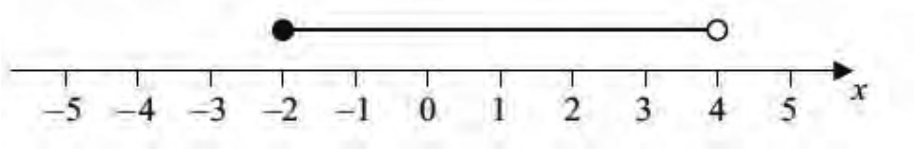
n is an integer.

(a) Write down all the possible values of n.

…….....

(2)

(b) Write down the inequalities represented on the number line.



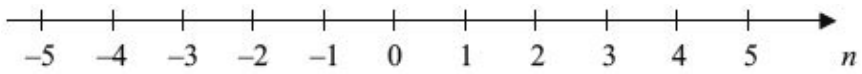
…….....

(2)

(Total for Question is 4 marks)

8. $-2 < n \leq 3$

Represent this inequality on the number line.



(Total for Question is 2 marks)

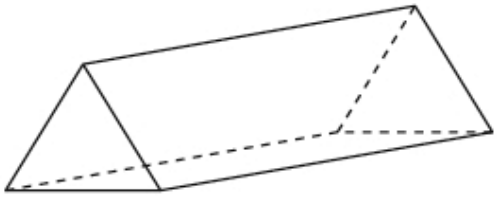
Types of Shapes and their Properties

Things to remember:

- Sides and vertices belong on 2D shapes.
- Edges, faces and vertices belong on 3D shapes.

Questions:

1. Here is a triangular prism.



(a) For this prism, write down

(i) the number of edges

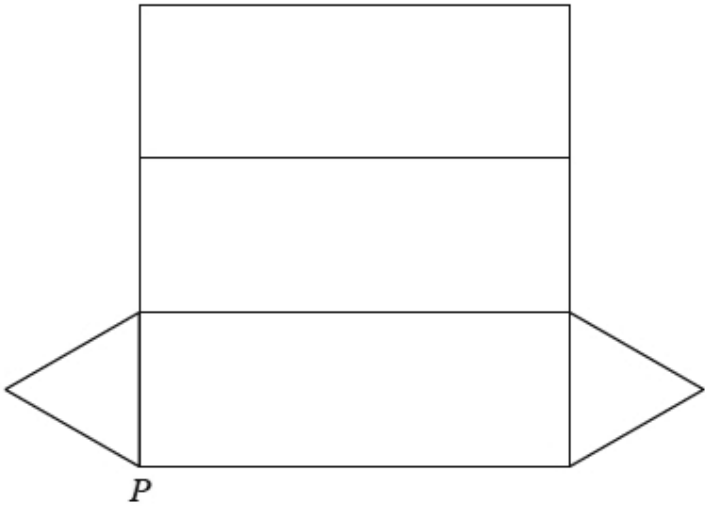
.....

(ii) the number of faces

.....

(2)

Here is a net of the triangular prism.



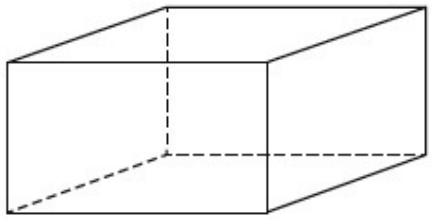
The net is folded to make the prism.
One other point meets at *P*.

(b) Mark this point on the net with the letter *P*.

(1)

(Total for Question is 3 marks)

2. Here is a cuboid.



The following sentences are about cuboids.

Complete each sentence by writing the correct number in the gap.

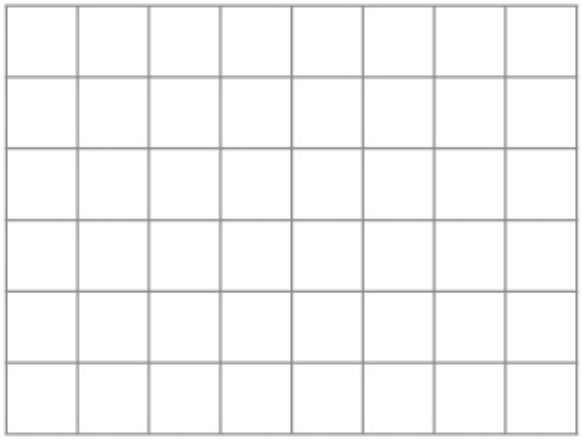
(i) A cuboid has ..... faces.

(ii) A cuboid has ..... edges.

(iii) A cuboid has ..... vertices.

(Total for Question is 3 marks)

3. (a) On the grid, draw a kite.



(1)

(b) Here is a quadrilateral.

Write down the special name of this quadrilateral.

.....

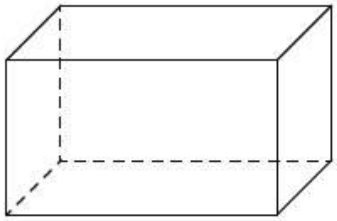
(1)

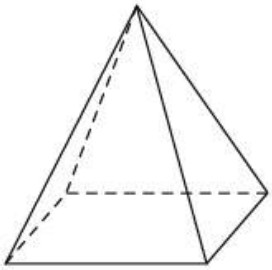
(Total for Question is 2 marks)

4. Draw a sketch of a pentagon.

(Total for Question is 1 marks)

5. Write down the name of each of these 3-D shapes.



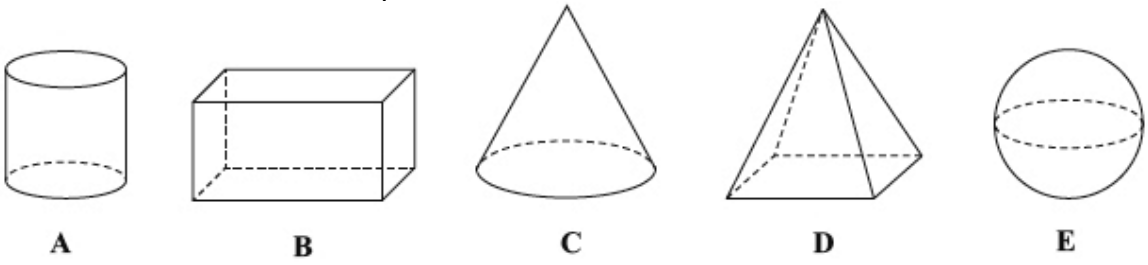


(i) .....

(ii) .....

(Total for Question is 2 marks)

6. Here are some solid 3-D shapes.



A **B** **C** **D** **E**

(a) Write down the letter of the shape that is a sphere.

.....

(1)

(b) Write down the mathematical name of shape **A**.

.....

(1)

(c) How many faces does shape **B** have?

.....

(1)

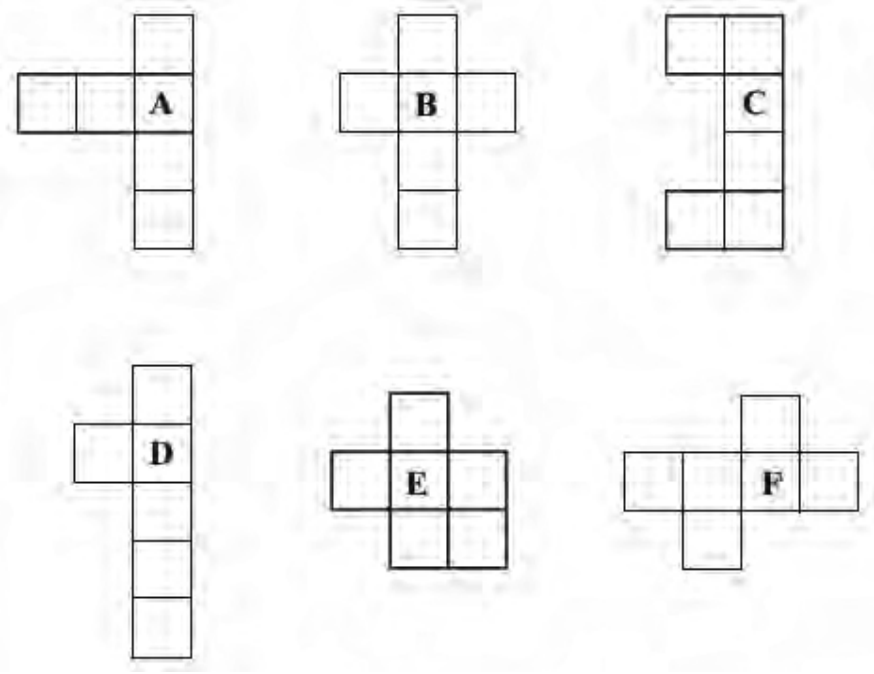
(d) How many edges does shape **D** have?

.....

(1)

(Total for Question is 4 marks)

7. Here are some shapes made from squares.



Two of these shapes are nets of a cube.
Which two shapes?

.....

(Total for Question is 2 marks)

8. Here is a list of the names of five types of quadrilateral.

Trapezium Parallelogram Square Rhombus Rectangle

(a) From the list, write down the names of two quadrilaterals which must have all four sides the same length.

..... and .....

(1)

(b) From the list, write down the name of the quadrilateral that has only one pair of parallel sides.

.....

(1)

For one of these quadrilaterals: the corners are not right angles,
the quadrilateral has rotational symmetry of order 2
and the diagonals cross at right angles.

(c) Write down the name of this quadrilateral.

.....

(1)

(Total for Question is 3 marks)

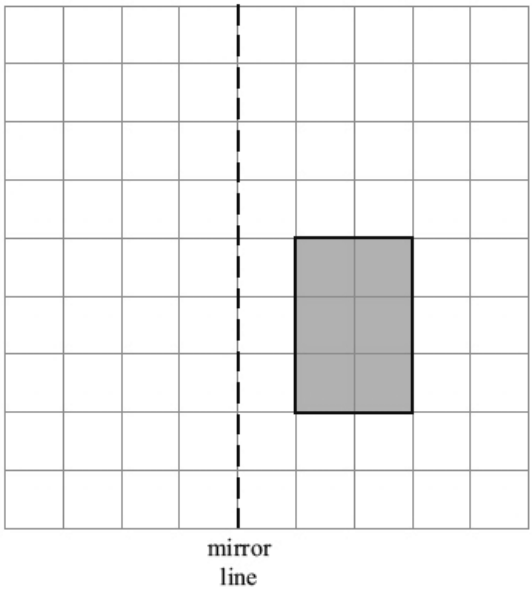
Reflection, Rotation and Symmetry

Things to remember:

- A reflection is where the shape is flipped.
- A rotation is where the shape is turned.

Questions:

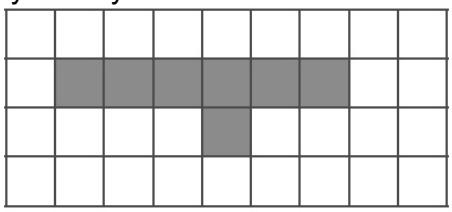
1. Here is a shaded shape on a grid of centimetre squares.



Reflect the shaded shape in the mirror line.

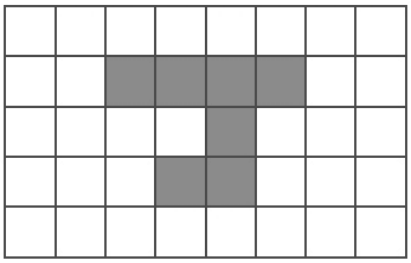
(Total for Question is 2 marks)

2. (a) On the grid, shade in one more square so that the completed shape has one line of symmetry.



(1)

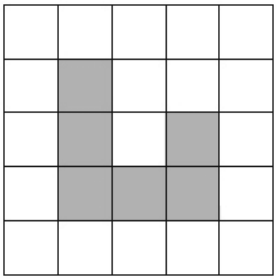
(b) On the grid below, shade in two more squares so that the completed shape has rotational symmetry of order 2



(1)

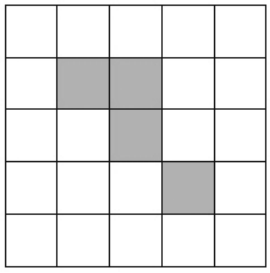
(Total for Question is 2 marks)

3. (a) Shade **one** more square to make a pattern with 1 line of symmetry.



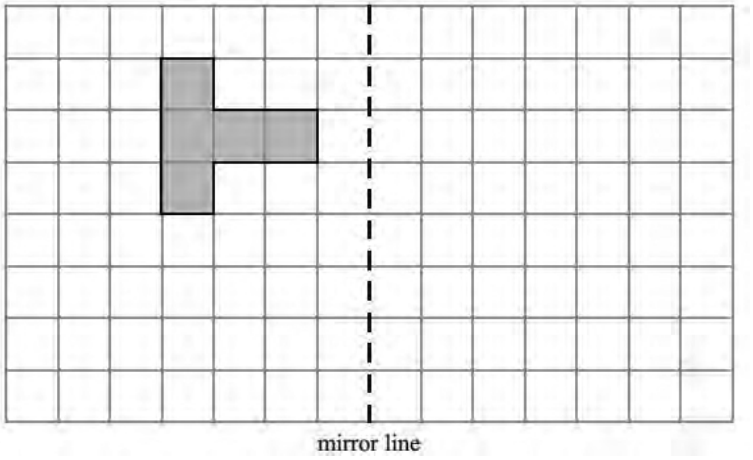
(1)

(b) Shade **one** more square to make a pattern with rotational symmetry of order 2



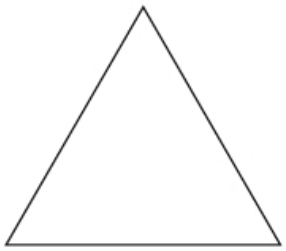
(1)
(Total for Question is 2 marks)

4. Reflect the shaded shape in the mirror line.



(Total for Question is 2 marks)

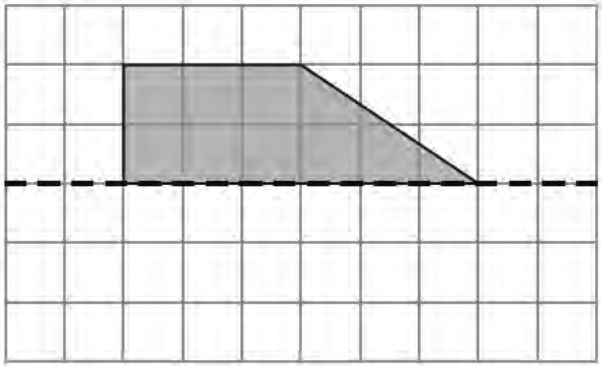
5. Here is an equilateral triangle.



Write down the order of rotational symmetry of the triangle.

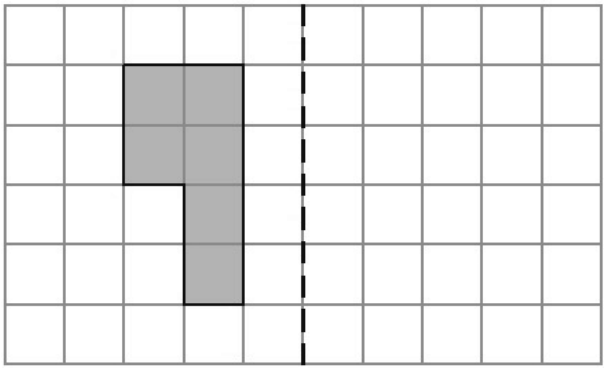
……..
(Total for Question is 1 mark)

6. (a) Reflect the shaded shape in the mirror line.



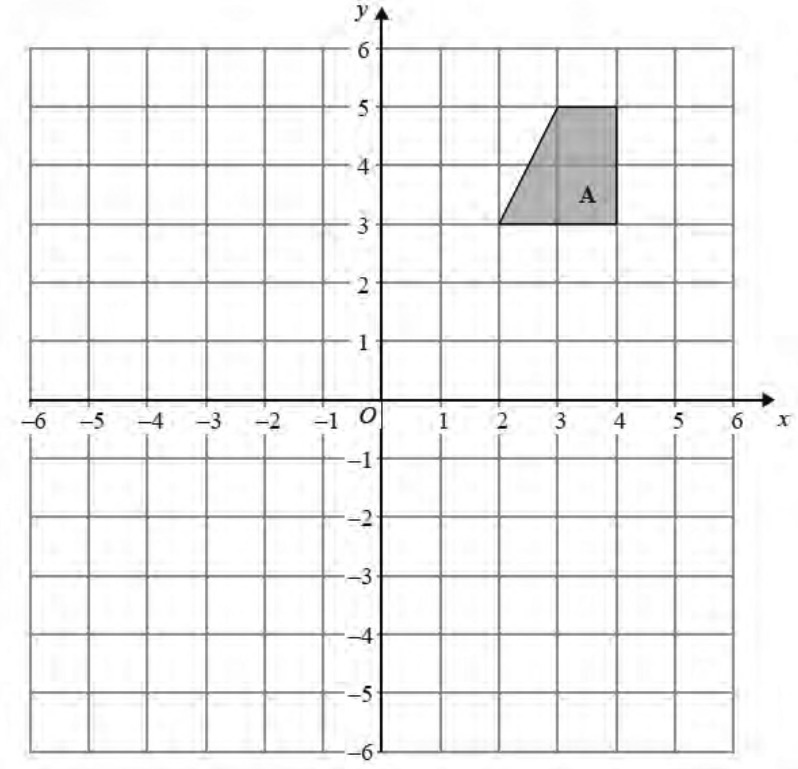
(1)

(b) Reflect the shaded shape in the mirror line.



(1)
(Total for Question is 2 marks)

7. On the grid, rotate shape **A** 180° about the point (1, 1).



(Total for Question is 2 marks)

8. (a) (i) Shade 4 sectors on diagram **A** so that it has rotational symmetry of order 4

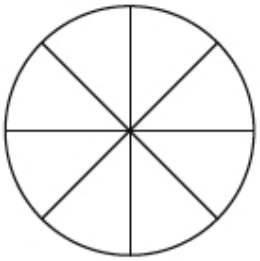


diagram **A**

(ii) Shade 4 sectors on diagram **B** so that it has rotational symmetry of order 2

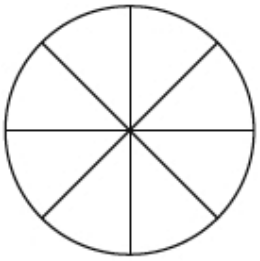


diagram **B**

(Total for question = 2 marks)

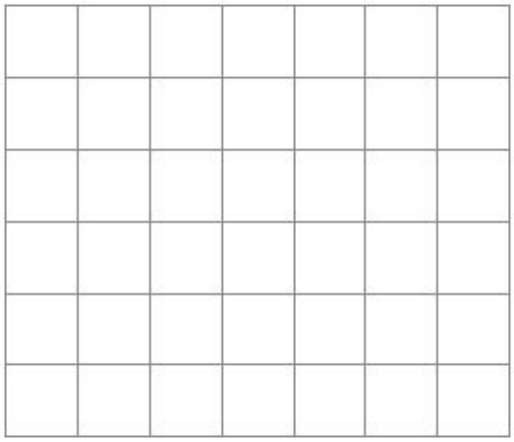
Area and Perimeter of Rectangles and Triangles

Things to remember:

- Area of a rectangle = base x height
- Area of a triangle = ½ x base x height
- The perimeter is the distance around the outside of shape

Questions:

1. On the centimetre grid, draw a rectangle with an area of 12 cm^2.

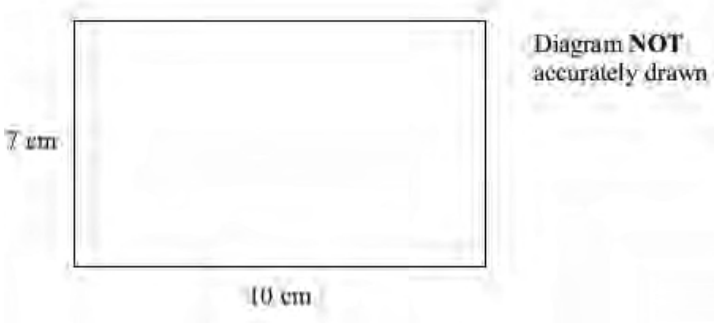


(Total for Question is 2 marks)

2. On the grid of centimetre squares, draw a rectangle with a perimeter of 10 cm.

(Total for Question is 2 marks)

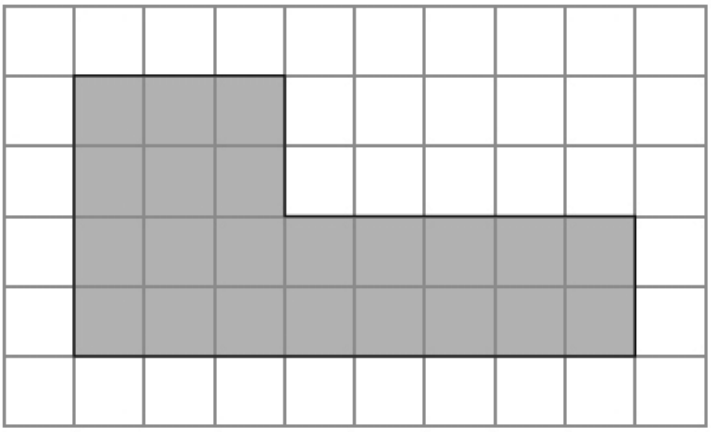
3. Here is a rectangle. Work out the area of this rectangle.



…..... cm^2

(Total for Question is 2 marks)

4. The shaded shape is drawn on a grid of centimetre squares.



(a) Find the perimeter of the shaded shape.

…..... cm

(1)

(b) Find the area of the shaded shape.

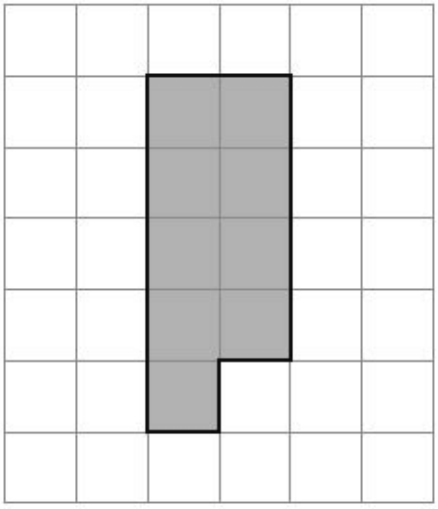
…..... cm^2

(1)

(Total for Question is 2 marks)

5. The shaded shape is drawn on a grid of centimetre squares.

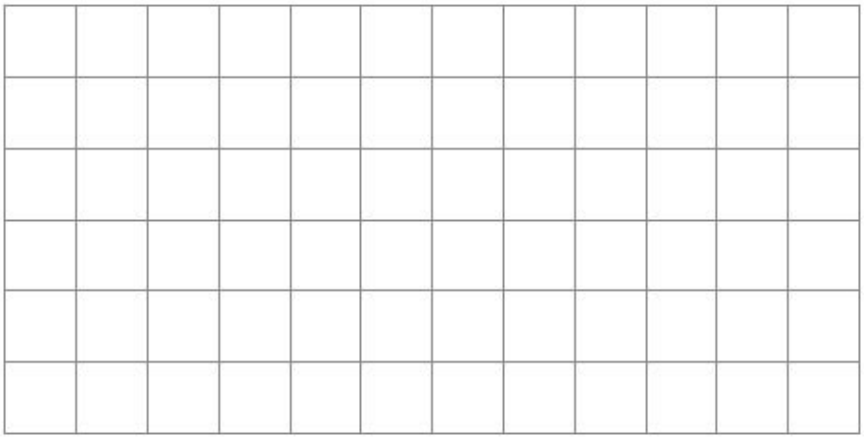
(a) Find the perimeter of the shaded shape.



…..... cm

(2)

(b) On the grid below, draw a square with the same area as the shaded shape.



(1)

(Total for Question is 3 marks)

6. Dilys buys a new house.
She wants to have a lawn in the back garden.
The lawn is going to be in the shape of a rectangle.

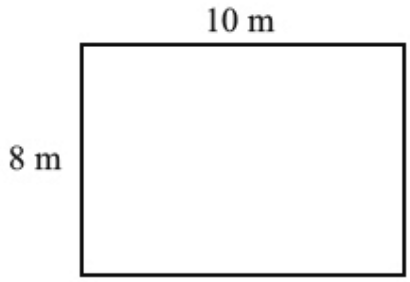


Diagram **NOT** accurately drawn

The lawn will have a length of 10 m. The lawn will have a width of 8 m.
Dilys wants to buy edging strip for her lawn.
The length of the edging strip needs to be equal to the perimeter of her lawn.
Edging strip costs £1.50 per metre. What is the total cost of the edging strip?

£…..

(Total for Question is 4 marks)

7. The diagram shows a garden with 4 flower beds.
The garden is a rectangle, 23 m by 17 m.

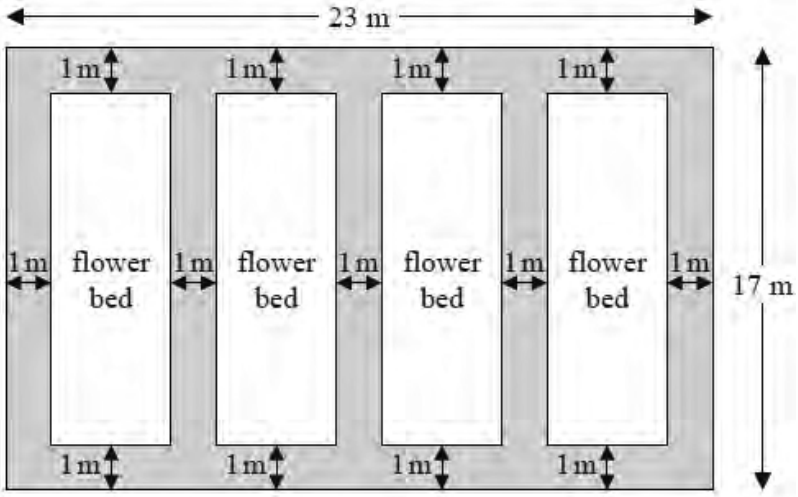


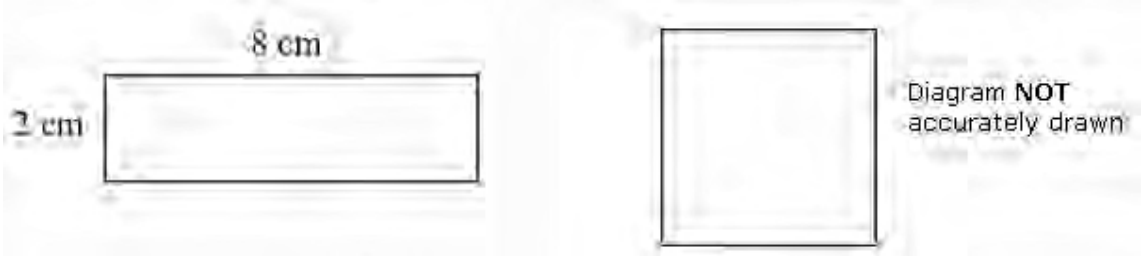
Diagram NOT accurately drawn
Each flower bed is a rectangle with the same length and the same width.
Work out the length and the width of a flower bed.

length =.....m

width =.....m

(Total for Question is 3 marks)

8. The diagram shows a rectangle and a square.



The perimeter of the rectangle is the same as the perimeter of the square.
Work out the length of one side of the square.

…..... cm

(Total for Question is 4 marks)

Types of Numbers

Things to remember:

- A factor is a whole number that divides exactly into another number.
- A multiple is a number that may be divided by another a certain number of times without a remainder.
- A prime number only has 2 factors – 1 and itself.
- A power tells us how many times the base number has been multiplied by itself
- A root is the opposite of a power.
- A square number is the result of multiplying an integer (whole number) by itself.

Questions:

1. (a) Write down the square of 8

64

(1)

(b) Write down the value of 10^3

1000

(1)

(c) Estimate the value of $\sqrt{20}$

4.5

(1)

(Total for Question is 3 marks)

2. Here is a list of eight numbers: 4 5 14 25 29 30 33 39 40

From the list, write down

(i) a factor of 20

4 or 5

(ii) a multiple of 10

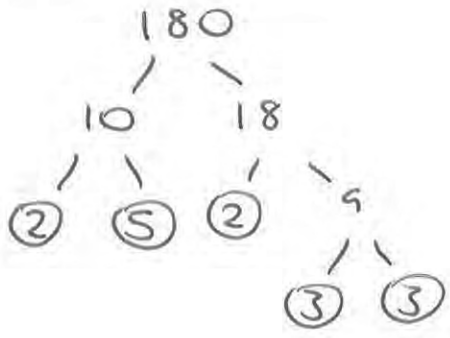
30 or 40

(iii) the prime number that is greater than 15

29

(Total for Question is 3 marks)

3. Express 180 as a product of its prime factors.



$2^2 \times 3^2 \times 5$

or

$2 \times 2 \times 3 \times 3 \times 5$

(Total for Question is 3 marks)

4. (a) Write down the value of 7^2

49
(1)

(b) Write down the value of $\sqrt{25}$

5
(1)

(c) Write down the value of 2^3

8
(1)

(Total for Question is 3 marks)

5. (a) Write down the value of $\sqrt{81}$

9
(1)

(b) Work out the value of $5^2 + 2^3$

25 + 8

33
(2)

(Total for Question is 3 marks)

6. Here is a list of numbers:

2 3 10 12 15 16 24

From the list write down

(i) an odd number

3 or 15
(1)

(b) a multiple of 6

12 or 24
(1)

(c) a factor of 18

2 or 3
(1)

(Total for Question is 3 marks)

7. Here is a list of numbers.

2 3 5 8 10 16 21 24

From the numbers in the list,

(a) write down an odd number

3, 5 or 21
(1)

(b) write down the square number

16
(1)

(c) write down the number which is a multiple of 6

24
(1)

(Total for Question is 3 marks)

8. Here is a list of numbers.

1 (2) 4 (5) (7) (11) (13) 14 15 (17)

From the list, write down three different prime numbers that add together to make 20

2, 7, 11 or 2, 5, 13

(Total for Question is 3 marks)

Place Value

Things to remember:
Label columns as below

Thousands	Hundreds	Tens	Units	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Questions:

1. (a) Write the number **seven thousand and twenty five** in figures.

7025

(1)

(b) Write the number 9450 in words.

Nine thousand, four hundred and fifty

(1)

(c) Write the number 28.75 to the nearest whole number.

29

(1)

(d) Write the number 7380 to the nearest thousand.

7000

(1)

(Total for Question is 4 marks)

2. Write down the value of the 3 in the number 4376

300

(Total for question = 1 mark)

3. Write down the value of the 3 in 16.35

0.3 or $\frac{3}{10}$

(Total for question is 1 mark)

4. (a) Work out 90 ÷ 10

9

(1)

(b) Write these numbers in order of size. Start with the smallest number.
2.8 4.71 0.6 13.4

0.6, 2.8, 4.71, 13.4

(1)

(c) Write 7/10 as a decimal.

0.7

(1)

(Total for Question is 3 marks)

5. (a) Write these numbers in order of size. Start with the smallest number.

3517 7135 5713 1357

1357, 3517, 5713, 7135

(1)

(b) Write these numbers in order of size. Start with the smallest number.

0.354 0.4 0.35 0.345

0.345, 0.35, 0.354, 0.4

(1)

(Total for Question is 2 marks)

6. Here are four cards. There is a number on each card.

4	5	2	1

(a) Write down the largest 4-digit even number that can be made using each card only once.

5412

(2)

(b) Write down all the 2-digit numbers that can be made using these cards.

45, 42, 41, 54, 52, 51, 24, 25, 21, 14, 15, 12

(2)

(Total for question is 4 marks)

7. (a) Write these numbers in order of size. Start with the smallest number.

3007 4435 399 4011 3333

399, 3007, 3333, 4011, 4435

(1)

(b) Write these numbers in order of size. Start with the smallest number.

3.7 5.62 0.7 14.3

0.7, 3.7, 5.62, 14.3

(1)

(c) Write $\frac{9}{10}$ as a decimal.

0.9

(1)

(Total for question = 3 marks)

8. Write the following numbers in order of size. Start with the smallest number.

0.61 0.1 0.16 0.106

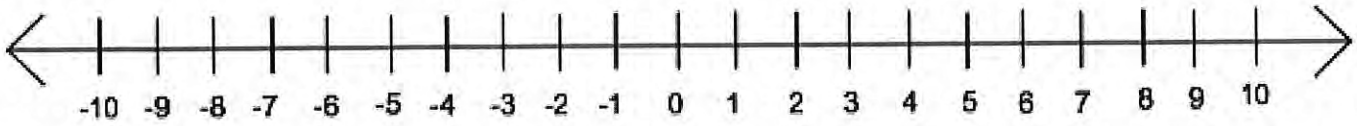
0.1, 0.106, 0.16, 0.61

(Total for question = 1 mark)

Directed Numbers

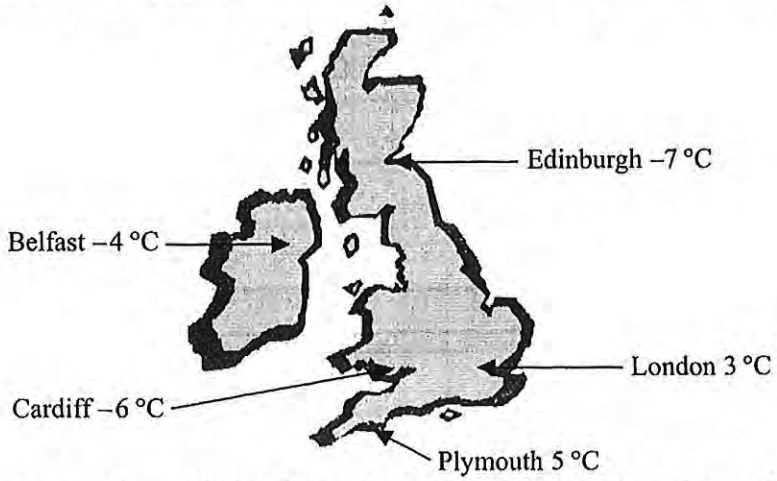
Things to remember:

- Mixed means minus!
- Use a number line – if you're adding you need to move in a positive direction (right), if you're subtracting you need to move in a negative direction (left).



Questions:

1. Here is a map of the British Isles.
The temperatures in some places, one night last winter are shown on the map.



(a) (i) Write down the names of the two places that had the biggest difference in temperature.

Edinburgh

Plymouth

(ii) Work out the difference in temperature between these two places.

12 °C

(3)

(b) Two pairs of places have a difference in temperature of 2 °C.
Write down the names of these places.

(i) London and Plymouth

(ii) Belfast and Cardiff.

(2)

(Total 5 marks)

2. Sally wrote down the temperature at different times on 1st January 2003.

Time	Temperature
midnight	– 6 °C
4 am	–10 °C
8 am	– 4 °C
noon	7 °C
3 pm	6 °C
7 pm	–2 °C

(a) Write down

(i) the **highest** temperature,

7 .....°C

(ii) the **lowest** temperature.

-10 .....°C

(2)

(b) Work out the difference in the temperature between

(i) 4 am and 8 am,

6 .....°C

(ii) 3 pm and 7 pm.

8 .....°C

(2)

At 11 pm that day the temperature had fallen by 5 °C from its value at 7 pm.

(c) Work out the temperature at 11 pm.

-2-5

-7 .....°C

(1)

(Total 5 marks)

3. The table shows the temperature on the surface of each of five planets.

Planet	Temperature
Venus	480 °C
Mars	– 60 °C
Jupiter	– 150 °C
Saturn	– 180 °C
Uranus	– 210 °C

(a) Work out the difference in temperature between Mars and Jupiter.

90 .....°C

(1)

(b) Work out the difference in temperature between Venus and Mars.

540 .....°C

(1)

(c) Which planet has a temperature 30 °C higher than the temperature on Saturn?

Jupiter .....

(1)

The temperature on Pluto is 20 °C lower than the temperature on Uranus.

(d) Work out the temperature on Pluto.

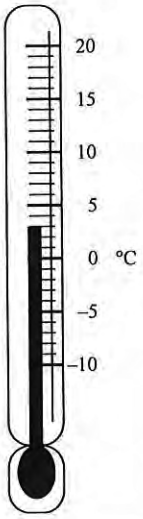
-210-20

-230 .....°C

(1)

(Total 4 marks)

4. (a) Write down the temperature shown on the thermometer.



3 °C
(1)

The temperature falls by 8°C.

(b) Work out the new temperature.

3 − 8

−5 °C
(1)
(Total 2 marks)

5. The table shows the highest and lowest temperatures one day in London and Moscow.

	Highest	**Lowest**
London	8°C	–6°C
Moscow	–3°C	–8°C

(a) Work out the difference between the **lowest** temperature in London and the **lowest** temperature in Moscow.

2 °C
(1)

(b) Work out the difference between the **highest** and **lowest** temperature in London.

14 °C
(1)
(Total 2 marks)

6. The table shows the midday temperatures in 4 different cities on Monday.

City	**Midday temperature (°C)**
Belfast	5
Cardiff	–1
Glasgow	–6
London	–4

(a) Which city had the lowest temperature?

Glasgow
(1)

(b) Work out the difference between the temperature in Cardiff and the temperature in Belfast.

6 °C
(1)

By Tuesday, the midday temperature in London had risen by 7 °C.

(c) Work out the midday temperature in London on Tuesday.

−4 + 7

3 °C
(1)
(Total 3 marks)

7. Mr Snow stayed some time at the South Pole.
The highest temperature there was –30 °C.
The lowest temperature there was –57 °C.

(a) Work out the difference between the highest temperature and the lowest temperature at the South Pole.

27 °C
(1)

Mr Snow returned to his house in London.
The temperature outside his house was –2 °C.
The temperature inside his house was 12 °C higher.

(b) Work out the temperature inside his house.

10 °C
(1)
(Total 2 marks)

8. Write these temperatures in order. Start with the lowest temperature.

7°C –2°C 10°C –5°C 3°C

-5°C, -2°C, 3°C, 7°C, 10°C
(Total for question = 1 mark)

Coordinates

Things to remember:
Along the corridor, up the stairs → (x,y)

Questions:

1. (a) Write down the coordinates of the point *P*.

(...3... , ...2...)

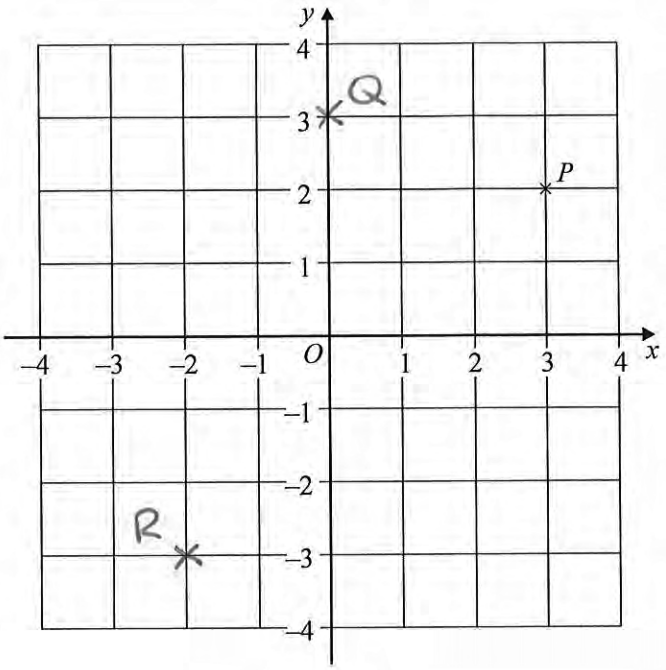
(1)

(b) (i) On the grid, plot the point (0, 3). Label the point *Q*.

(ii) On the grid, plot the point (–2, –3). Label the point *R*.

(2)

(Total 3 marks)



2. (a) Write down the coordinates of the point

(i) *A*,

(...0... , ...2...)

(ii) *B*.

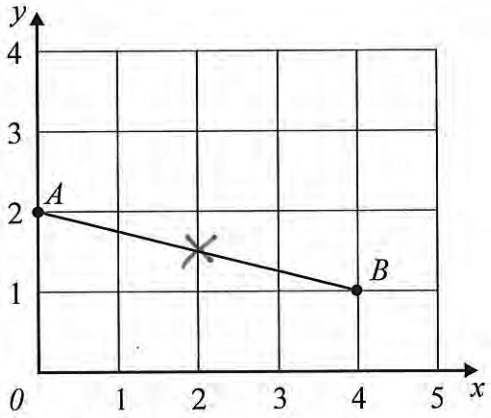
(...4... , ...1...)

(2)

(b) On the grid, mark with a cross (×) the midpoint of the line *AB*.

(1)

(Total 3 marks)



3. (a) (i) Write down the coordinates of the point A.

(...2...,...6...)

(ii) Write down the coordinates of the point *B*.

(...0...,...4...)

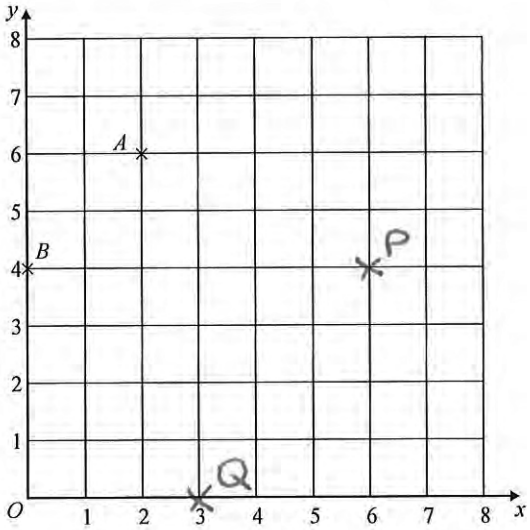
(2)

(b) (i) On the grid, mark the point (6, 4) with the letter *P*.

(ii) On the grid, mark the point (3, 0) with the letter *Q*.

(2)

(Total 4 marks)



4. (a) Write down the coordinates of the point

(i) A,

(−4 , 3)

(ii) C.

(1 , 0)

(2)

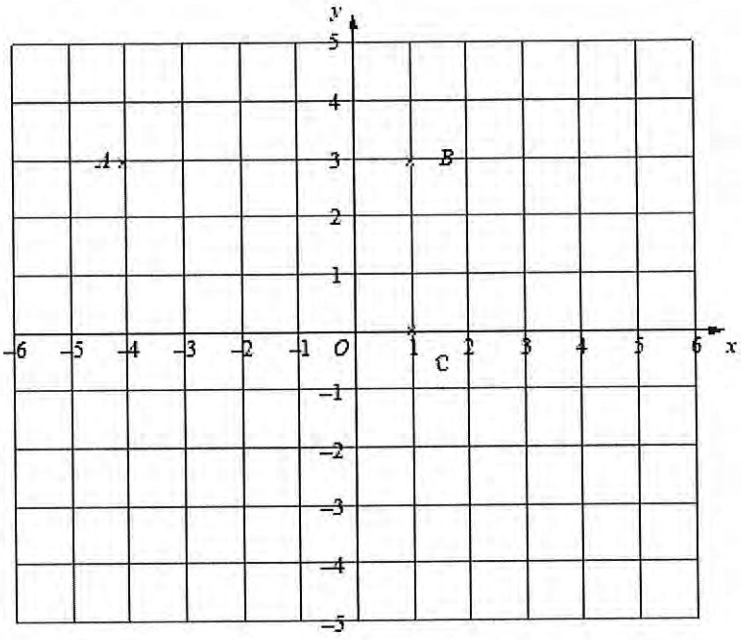
(b) (i) On the grid, mark the point D so that $ABCD$ is a rectangle.

(ii) Write down the coordinates of D.

(−4 , 0)

(2)

(Total 4 marks)



5. (a) Write down the coordinates of the point A.

(2 , 1)

(1)

(b) Write down the coordinates of the point B.

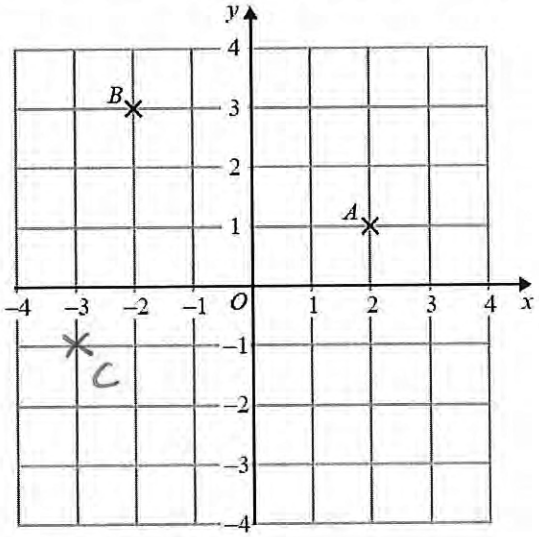
(−2 , 3)

(1)

(c) On the grid, mark with a cross (×) the point (−3, −1). Label this point C.

(1)

(Total for question = 3 marks)



6. (a) (i) Write down the coordinates of the point A.

(2 , 3)

(ii) Write down the coordinates of the point B.

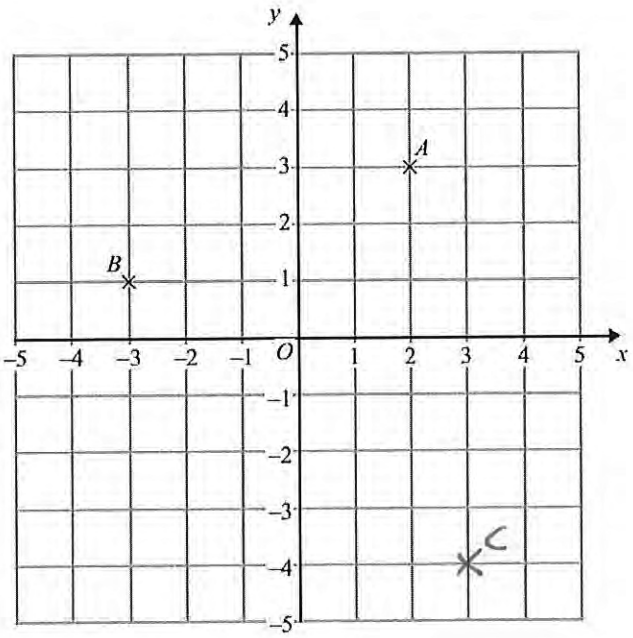
(−3 , 1)

(2)

(b) On the grid, mark with a cross the point (3, –4). Label this point C.

(1)

(Total for Question is 3 marks)



7. (a) Write down the coordinates of the point P.

(..... 1 ..... , ... 2 .....)

(1)

(b) Write down the coordinates of the point R.

(..... 0 ..... , ... -3 .....)

(1)

P, Q and R are three vertices of a parallelogram.

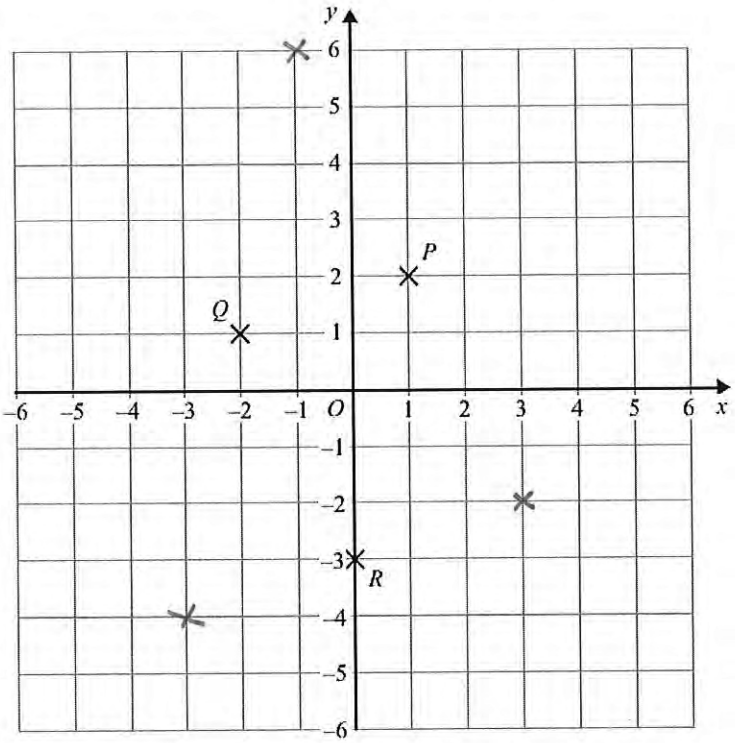
(c) Write down the coordinates of the fourth vertex of this parallelogram.

(..... , ...)

(1)

(Total for Question is 3 marks)

(-1, 6), (-3, -4) or (3, -2)



8. (a) Write down the coordinates of point B.

(..... 4 ..... , ... 5 .....)

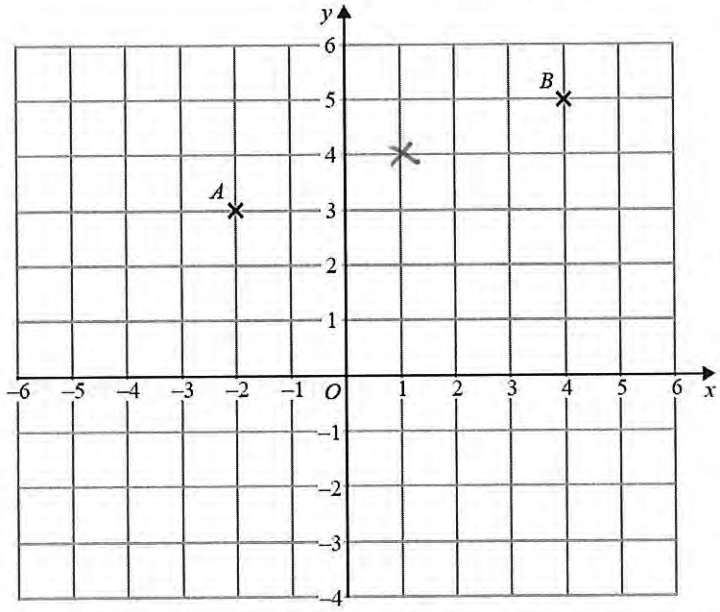
(1)

(b) Find the coordinates of the midpoint of AB.

(..... 1 ..... , ... 4 .....)

(1)

(Total for question = 2 marks)



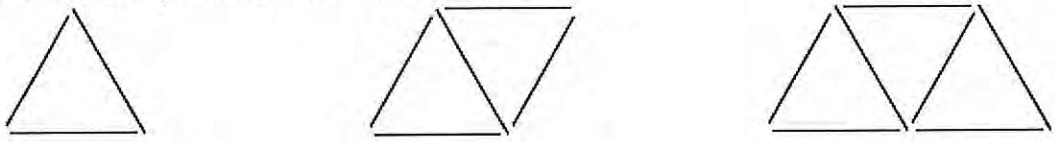
Patterns and Sequences

Things to remember:

- If there is a pattern, look carefully at how many sticks/blocks are being added on each time.
- Work out the rule (for example: add 4 or multiply by 2) to help you work out the next term.

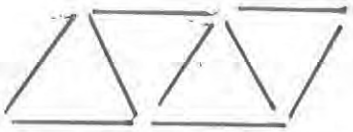
Questions:

1. Here are some patterns made from sticks.



Pattern number 1 Pattern number 2 Pattern number 3

In the space below, draw Pattern number 4



(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	3	5	7	9	11

(1)

(c) How many sticks make Pattern number 15?

31

(1)

(Total for Question is 3 marks)

2. Here are the first four terms of a number sequence.

6 10 14 18

(a) **(2)** Write down the next term in this sequence.

22

(1)

(b) Find the 10th term in this sequence.

42

(1)

(c) The number 101 is **not** a term in this sequence. Explain why.

All the terms in the sequence are even but 101 is odd.

(1)

(Total for Question is 3 marks)

3. Here are the first four terms of a number sequence.

3 7 11 15

(a) Write down the next term of this sequence.

19

(1)

The 50th term of this number sequence is 199

(b) Write down the 51st term of this sequence.

199 + 4

203

(1)

The number 372 is **not** a term of this sequence.

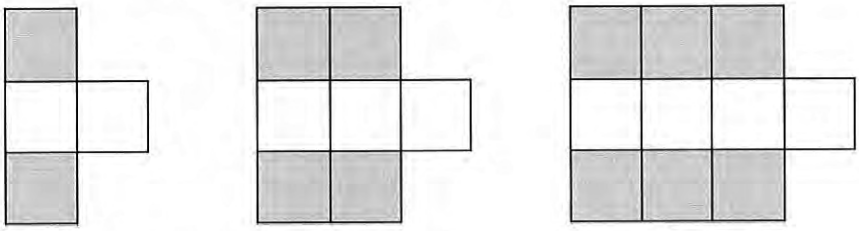
(c) Explain why.

All the terms in the sequence are odd but 372 is even.

(1)

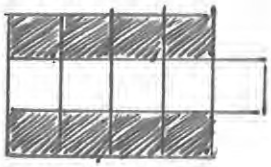
(Total for Question is 3 marks)

4. Here are some patterns made from white centimetre squares and grey centimetre squares.



Pattern 1 Pattern 2 Pattern 3

(a) In the space below, draw Pattern 4



(1)

(b) Find the number of grey squares in Pattern 6

12

(1)

A Pattern has 20 grey squares.

(c) Work out how many white squares there are in this Pattern.

11

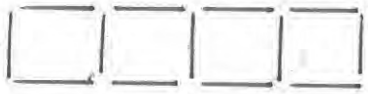
(2)

(Total for Question is 4 marks)

5. Here are some patterns made from sticks.

Pattern number 1 Pattern number 2 Pattern number 3

(a) Draw Pattern number 4 in the space below.



(1)

(b) How many sticks are needed for Pattern number 12?

37

(2)

Sunil says that he will need 70 sticks for Pattern number 20

(c) Is Sunil correct? You must give a reason for your answer.

Sunil is wrong - he will need 81 sticks.

(2)

(Total for Question is 5 marks)

6. Here are the first 6 terms of a number sequence.

5 9 13 17 21 25

(a) Write down the next term of the sequence.

29

(1)

(b) (i) Work out the eleventh term of the sequence.

45

(ii) Explain how you found your answer.

kept adding on 4

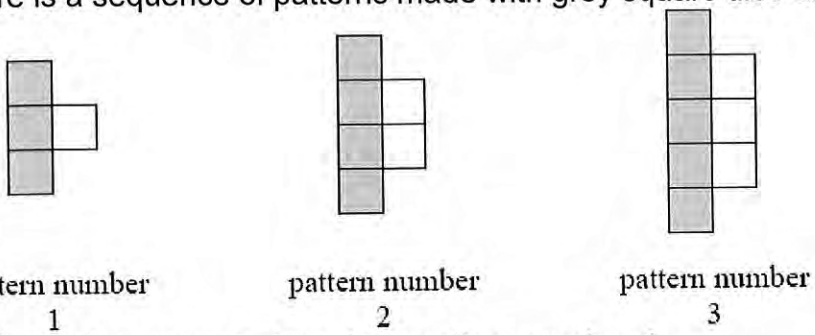
or

n^{th} term: $4n+1$

(2)

(Total for Question is 3 marks)

7. Here is a sequence of patterns made with grey square tiles and white square tiles.



pattern number 1 | pattern number 2 | pattern number 3

(a) **(2)** In the space below, draw pattern number 4

(1)

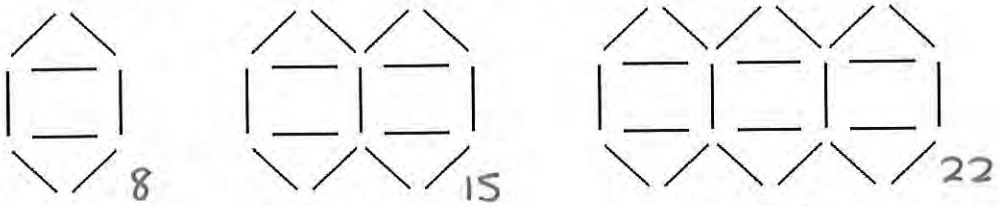
(b) Find the total number of tiles in pattern number 20

42

(2)

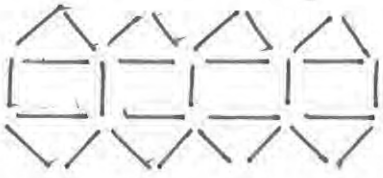
(Total for question is 3 marks)

8. Here is a sequence of patterns made from sticks.



pattern number 1 | pattern number 2 | pattern number 3

(a) In the space below, draw pattern number 4



(1)

(b) How many sticks are needed for pattern number 10?

71

(2)

(Total for question = 3 marks)

Collecting Like Terms (Simplifying)

Things to remember:

- 2a means a + a or 2 lots of a
- a^2 means a x a
- The sign (+ or -) belongs to the term following it. You may find it easier to identify like terms using two different highlighters.

Questions:

1. (a) Simplify $a + a + a + a$

4a

(1)

(b) Simplify $3 \times c \times d$

3cd

(1)

(c) Simplify $3ef + 5ef - ef$

7ef

(1)

(Total for Question is 3 marks)

2. (a) Simplify $b + b + b + b$

4b

(1)

(b) Simplify $8n - 3n$

5n

(1)

(c) Simplify $3 \times c \times d$

3cd

(1)

(d) Simplify $3x + 7y + 2x - y$

5x + 6y

(2)

(Total for Question is 5 marks)

3. Simplify $3x + 5y + x + 4y$

4x + 9y

(Total for Question is 2 marks)

4. (a) Simplify $a \times c \times 3$

3ac

(1)

(b) Simplify $p \times p \times p$

p^3

(1)

(c) Simplify $5x - 4y + 3x - 3y$

$8x - 7y$

(2)

(Total for Question is 4 marks)

5. (a) Simplify $5a - 2a$

3a

(1)

(b) Simplify $3 \times 4y$

12y

(1)

(c) Simplify $3e + 4f + 2e - f$

5e + 3f

(2)

(Total for Question is 4 marks)

6. (a) Simplify $m + m + m$

3m

(1)

(b) Simplify $9e - 2e$

7e

(1)

(c) Simplify $5 \times 3g$

15g

(1)

(Total for Question is 3 marks)

7. (a) Simplify $d + d + d + d$

4d

(1)

(b) Simplify $3 \times e \times f$

3ef

(1)

(c) Simplify $2x + 3y + 3x - y$

5x + 2y

(2)

(Total for question = 4 marks)

8. (a) Simplify $f + f + f + f - f$

3f

(1)

(b) Simplify $2m \times 3$

6m

(1)

(c) Simplify $3a + 2h + a + 3h$

4a + 5h

(2)

(Total for Question is 4 marks)

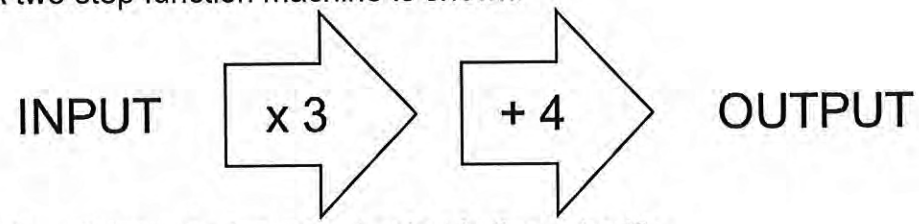
Solving Linear Equations

Things to remember:

- "Solve" means to find the value of the variable (what number the letter represents).
- The inverse of + is – and the inverse of x is ÷
- Work one step at a time, keeping you = signs in line on each new row of working.

Questions:

1. A two step function machine is shown.



(a) When the input is -4, what is the output?

$-4 \times 3 + 4$

.....-8.....

(1)

(b) If the output is 25, what was the input?

$(25 - 4) \div 3$

.....7.....

(1)

(c) If the input is n, what is the output?

.....$3n + 4$.....

(2)

(Total for Question is 4 marks)

2. You can use this rule to work out the total cost of hiring a car.

Total cost = £4 per hour plus £12

Arun hires a car for 5 hours.

(a) Work out the total cost.

$5 \times £4 + £12$

£.....32.....

(2)

Raj hires a car.

The total cost is £40

(b) Work out how many hours Raj hires the car for.

$\frac{£40 - £12}{£4}$

.....7..... hours

(3)

(Total for Question is 5 marks)

3. (a) Solve $\frac{6g}{6} = \frac{18}{6}$

$g =$ 3

(1)

(b) Solve $5h + 7 = 17$

$-7 \quad -7$

$\frac{5h}{5} = \frac{10}{5}$

$h = 2$

$h =$ 2

(2)

(Total for Question is 3 marks)

4. (a) Solve $x + 9 = 19$

$-9 \quad -9$

$x =$ 10

(1)

(b) Solve $\frac{2y}{2} = \frac{17}{2}$

$y =$ 8.5

(1)

(c) Solve $\frac{w}{4} = 8$

$\times 4 \quad \times 4$

$w =$ 32

(1)

(Total for Question is 3 marks)

5. (a) Solve $\frac{n}{7} = 2$

$\times 7 \quad \times 7$

$n =$ 14

(1)

(b) Solve $3g + 4 = 19$

$-4 \quad -4$

$\frac{3g}{3} = \frac{15}{3}$

$g =$ 5

(2)

(Total for Question is 3 marks)

6. (a) Solve $4x = 20$

$\frac{}{4} \quad \frac{}{4}$

$x =$ 5

(1)

(b) Solve $y - 9 = 17$

$+9 \quad +9$

$y =$ 26

(1)

(Total for question = 2 marks)

7. Solve $3x + 7 = 1$

$-7 \quad -7$

$\frac{3x}{3} = \frac{-6}{3}$

$x =$ -2

(Total for question = 2 marks)

8. Solve $4x + 5 = x + 26$

$-x \quad -x$

$3x + 5 = 26$

$-5 \quad -5$

$\frac{3x}{3} = \frac{21}{3}$

$x =$ 7

(Total for question = 2 marks)

Inequalities

Things to remember:

- < means less than
- > means greater than
- ≤ means less than or equal to
- ≥ means greater than or equal to
- An integer is a whole number
- On a number line, use a full circle to show a value can be equal, and an empty circle to show it cannot.

Questions:

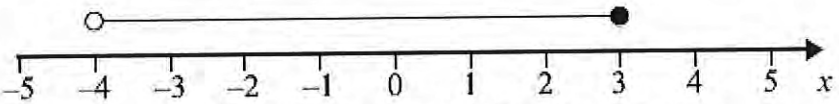
1. $-2 < n \leq 3$
n is an integer.
Write down all the possible values of n.

.....−1, 0, 1, 2, 3.....
(Total for Question is 2 marks)

2. (a) n is an integer.
$-1 \leq n < 4$
List the possible values of n.

.....−1, 0, 1, 2, 3.....
(2)

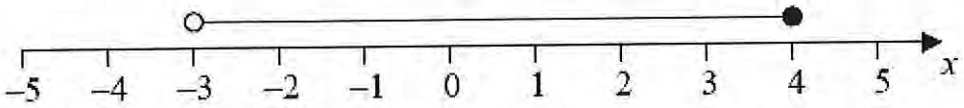
(b)



Write down the inequality shown in the diagram.

.....−4 < x ≤ 3.....
(2)
(Total for Question is 4 marks)

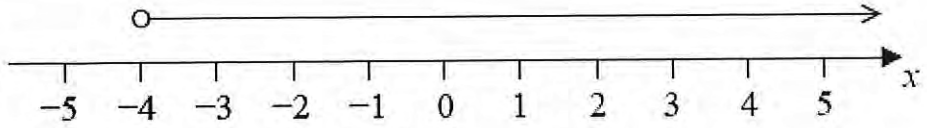
3. Here is an inequality, in x, shown on a number line.



Write down the inequality.

.....−3 < x ≤ 4.....
(Total for Question is 2 marks)

4.



(a) Write down the inequality represented on the number line.

$x > -4$

(1)

(b) $-3 \leq n < 2$
$-2 < m < 4$
n and m are integers.
Given that $n = m$, write down all the possible values of n.

$n = -3, -2, -1, 0, 1$
$m = -1, 0, 1, 2, 3$

$-1, 0, 1$

(2)

(Total for question = 5 marks)

5. $-5 < y \leq 0$
y is an integer.
Write down all the possible values of y.

$-4, -3, -2, -1, 0$

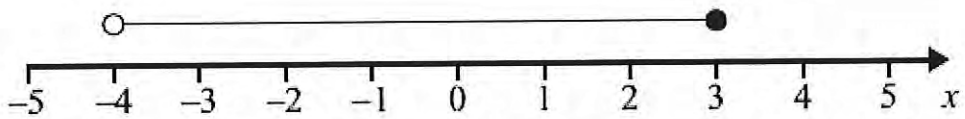
(Total for Question is 2 marks)

6. (a) n is an integer.
$-1 \leq n < 4$
List the possible values of n.

$-1, 0, 1, 2, 3$

(2)

(b)



Write down the inequality shown in the diagram.

$-4 < x \leq 3$

(2)

(Total for Question is 4 marks)

7. $-4 < n \leq 1$

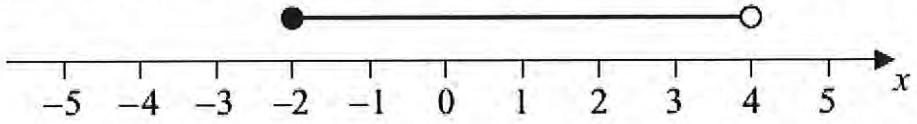
n is an integer.

(a) Write down all the possible values of n.

-3, -2, -1, 0, 1

(2)

(b) Write down the inequalities represented on the number line.



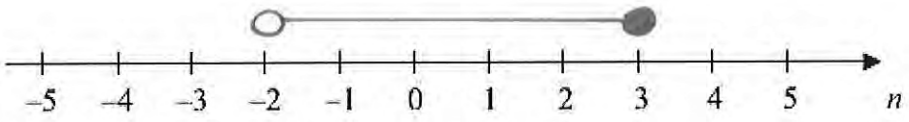
$-2 \leq x < 4$

(2)

(Total for Question is 4 marks)

8. $-2 < n \leq 3$

(a) Represent this inequality on the number line.



(Total for Question is 2 marks)

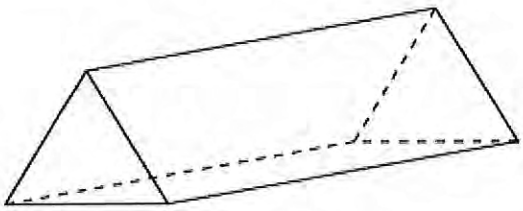
Types of Shapes and their Properties

Things to remember:

- Sides and vertices belong on 2D shapes.
- Edges, faces and vertices belong on 3D shapes.

Questions:

1. Here is a triangular prism.



(a) For this prism, write down

(i) the number of edges

9

.....

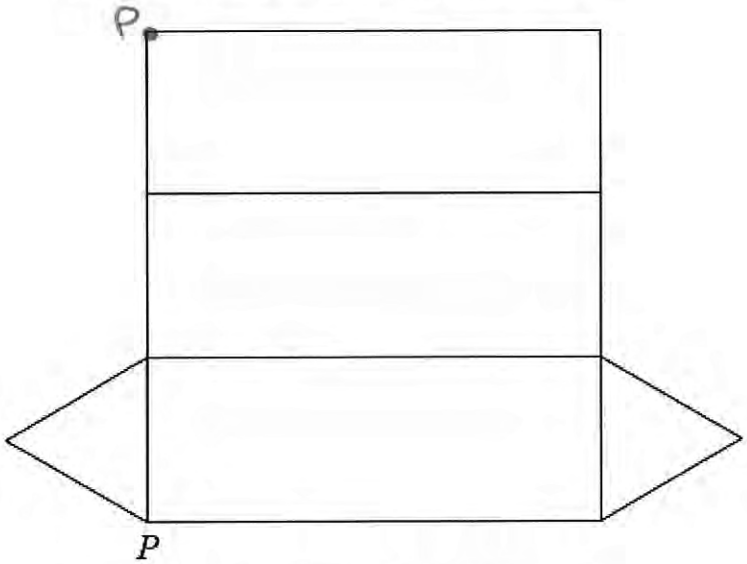
(ii) the number of faces

5

.....

(2)

Here is a net of the triangular prism.



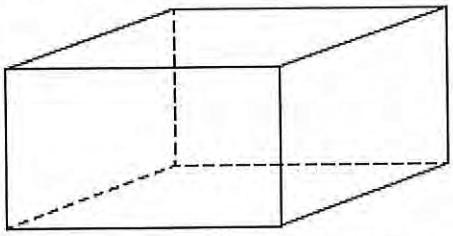
The net is folded to make the prism.
One other point meets at *P*.

(b) Mark this point on the net with the letter *P*.

(1)

(Total for Question is 3 marks)

2. Here is a cuboid.



The following sentences are about cuboids.

Complete each sentence by writing the correct number in the gap.

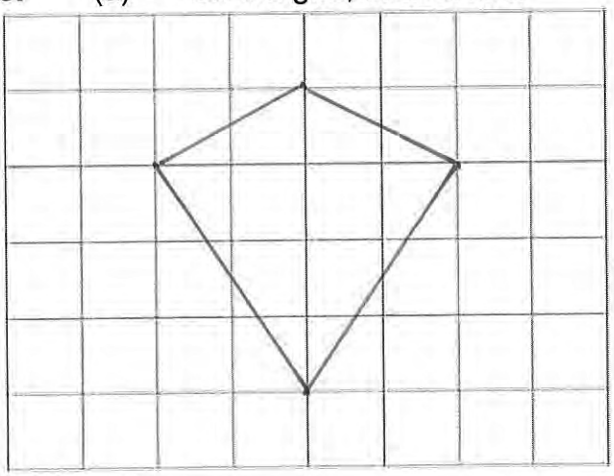
(i) A cuboid has ..... 6 ..... faces.

(ii) A cuboid has ..... 12 ..... edges.

(iii) A cuboid has ..... 8 ..... vertices.

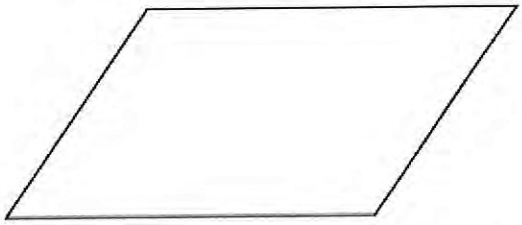
(Total for Question is 3 marks)

3. (a) On the grid, draw a kite.



(1)

(b) Here is a quadrilateral.



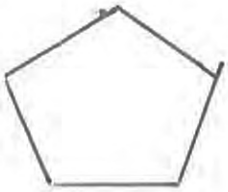
Write down the special name of this quadrilateral.

..... Parallelogram .....

(1)

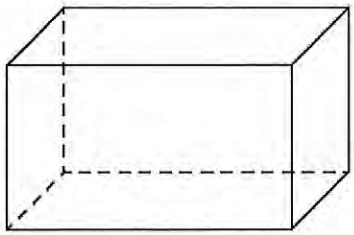
(Total for Question is 2 marks)

4. Draw a sketch of a pentagon.

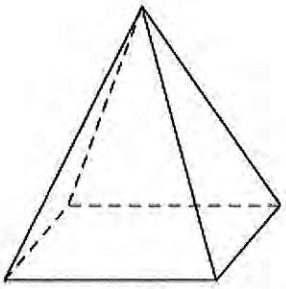


(Total for Question is 1 marks)

5. Write down the name of each of these 3-D shapes.



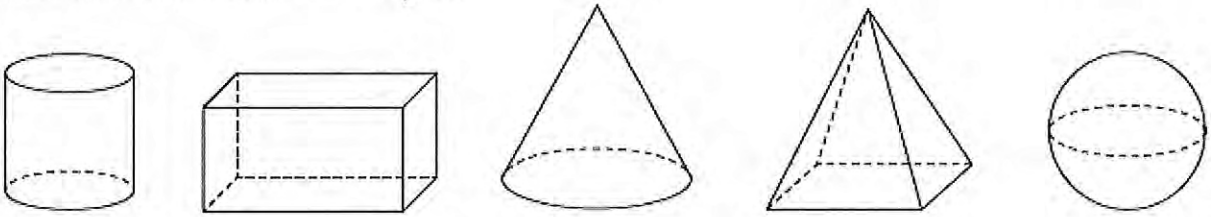
(i) Cuboid



(ii) Pyramid

(Total for Question is 2 marks)

6. Here are some solid 3-D shapes.



A **B** **C** **D** **E**

(a) Write down the letter of the shape that is a sphere.

E

(1)

(b) Write down the mathematical name of shape **A**.

Cylinder

(1)

(c) How many faces does shape **B** have?

6

(1)

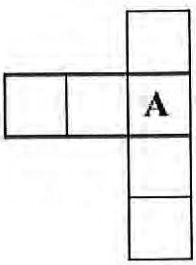
(d) How many edges does shape **D** have?

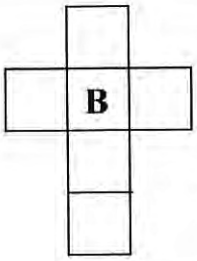
8

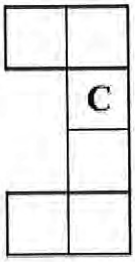
(1)

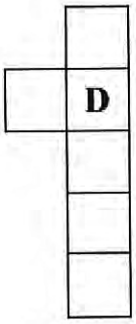
(Total for Question is 4 marks)

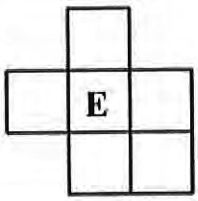
7. Here are some shapes made from squares.

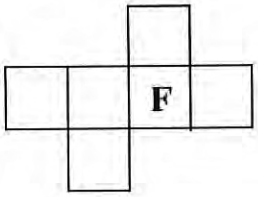












Two of these shapes are nets of a cube.
Which two shapes?

B and F

(Total for Question is 2 marks)

8. Here is a list of the names of five types of quadrilateral.

Trapezium Parallelogram Square Rhombus Rectangle

(a) From the list, write down the names of two quadrilaterals which must have all four sides the same length.

Square and Rhombus

(1)

(b) From the list, write down the name of the quadrilateral that has only one pair of parallel sides.

Trapezium

(1)

For one of these quadrilaterals: the corners are not right angles,
the quadrilateral has rotational symmetry of order 2
and the diagonals cross at right angles.

(c) Write down the name of this quadrilateral.

Parallelogram

(1)

(Total for Question is 3 marks)

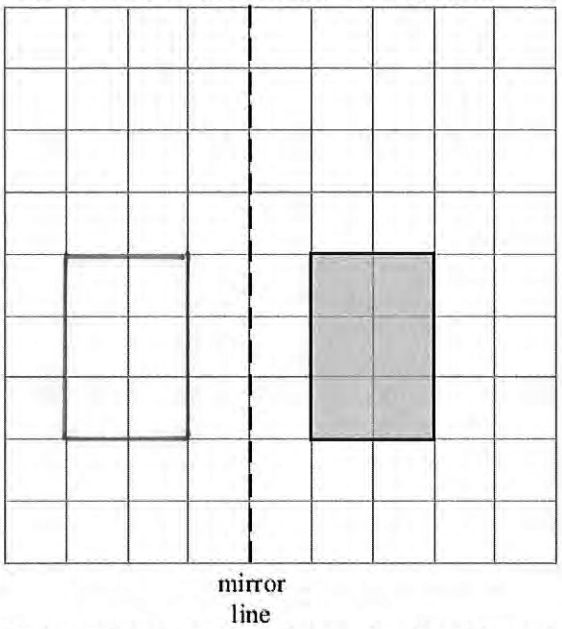
Reflection, Rotation and Symmetry

Things to remember:

- A reflection is where the shape is flipped.
- A rotation is where the shape is turned.

Questions:

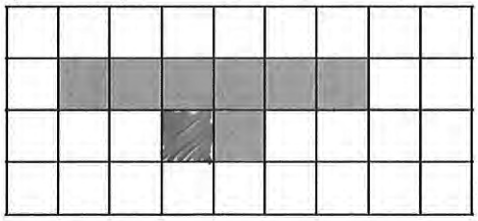
1. Here is a shaded shape on a grid of centimetre squares.



Reflect the shaded shape in the mirror line.

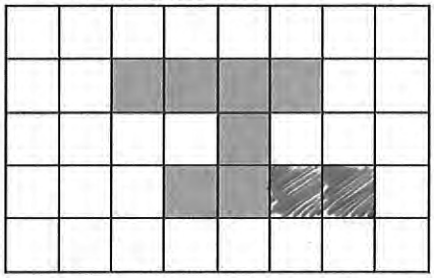
(Total for Question is 2 marks)

2. (a) On the grid, shade in one more square so that the completed shape has one line of symmetry.



(1)

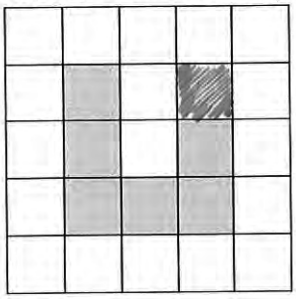
(b) On the grid below, shade in two more squares so that the completed shape has rotational symmetry of order 2



(1)

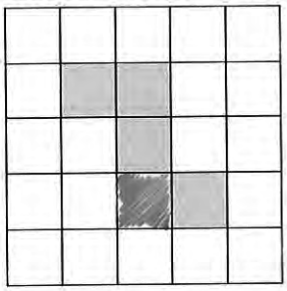
(Total for Question is 2 marks)

3. (a) Shade **one** more square to make a pattern with 1 line of symmetry.



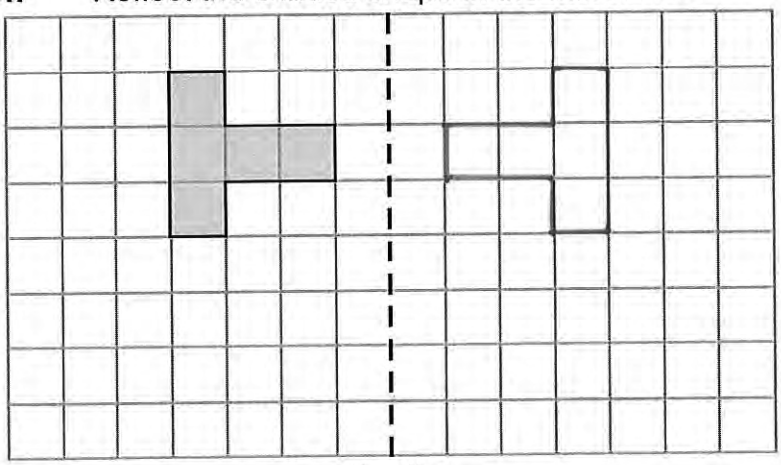
(1)

(b) Shade **one** more square to make a pattern with rotational symmetry of order 2



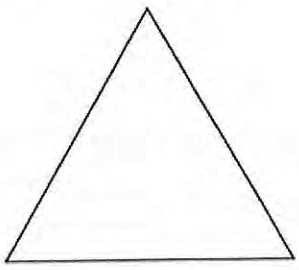
(1)
(Total for Question is 2 marks)

4. Reflect the shaded shape in the mirror line.



(Total for Question is 2 marks)

5. Here is an equilateral triangle.

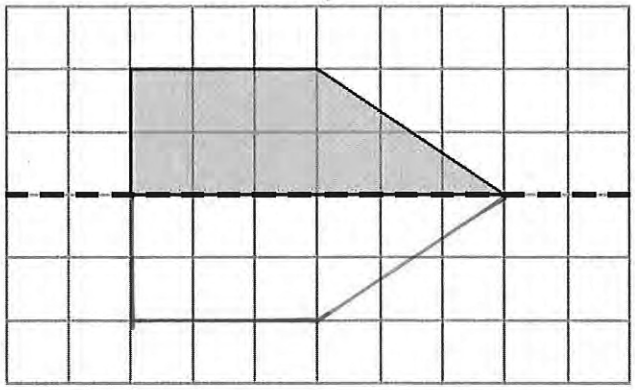


Write down the order of rotational symmetry of the triangle.

..... 3 .....

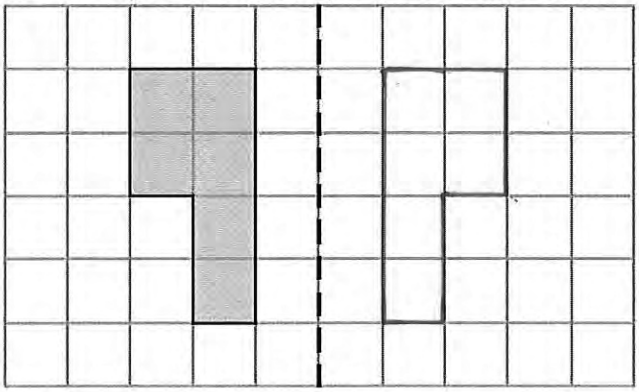
(Total for Question is 1 mark)

6. (a) Reflect the shaded shape in the mirror line.



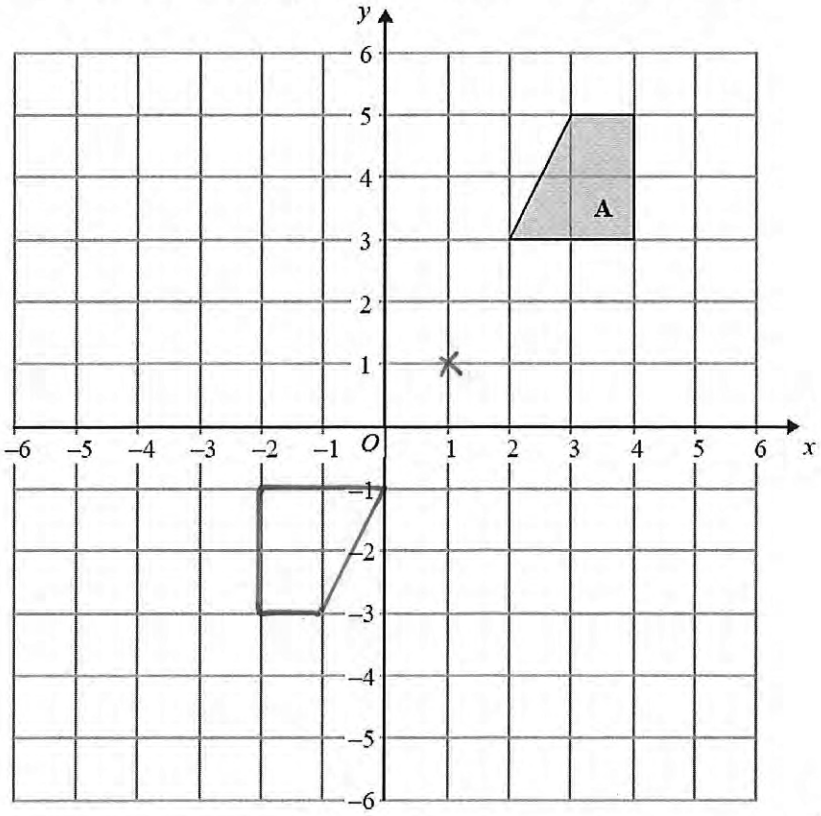
(1)

(b) Reflect the shaded shape in the mirror line.



(1)
(Total for Question is 2 marks)

7. On the grid, rotate shape **A** 180° about the point (1, 1).



(Total for Question is 2 marks)

8. (a) (i) Shade 4 sectors on diagram **A** so that it has rotational symmetry of order 4

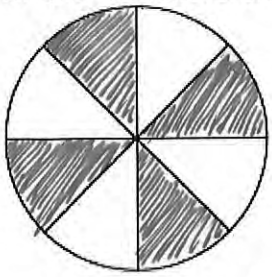


diagram **A**

(ii) Shade 4 sectors on diagram **B** so that it has rotational symmetry of order 2

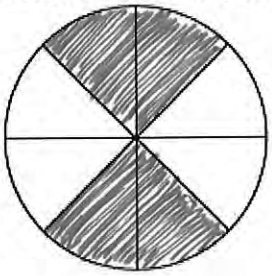


diagram **B**

(Total for question = 2 marks)

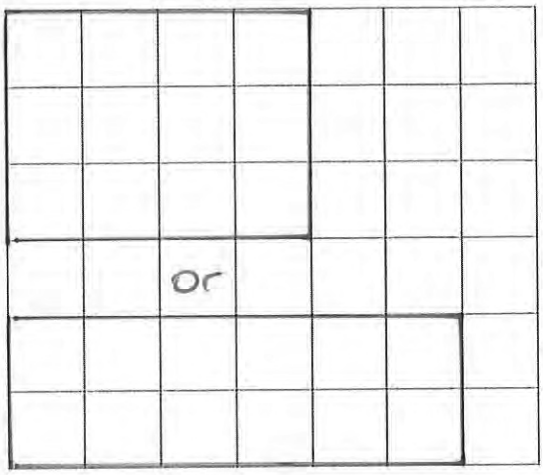
Area and Perimeter of Rectangles and Triangles

Things to remember:

- Area of a rectangle = base x height
- Area of a triangle = ½ x base x height
- The perimeter is the distance around the outside of shape

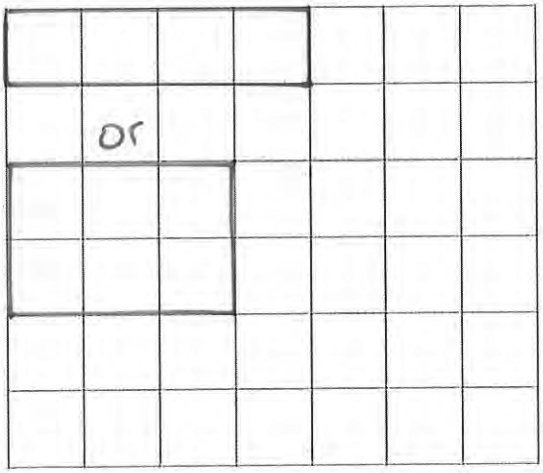
Questions:

1. On the centimetre grid, draw a rectangle with an area of 12 cm^2.



(Total for Question is 2 marks)

2. On the grid of centimetre squares, draw a rectangle with a perimeter of 10 cm.



(Total for Question is 2 marks)

3. Here is a rectangle. Work out the area of this rectangle.

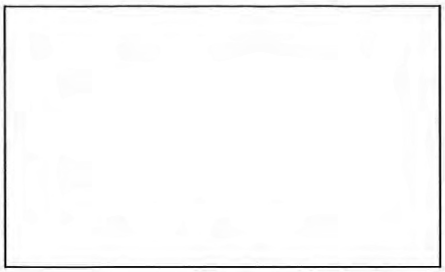


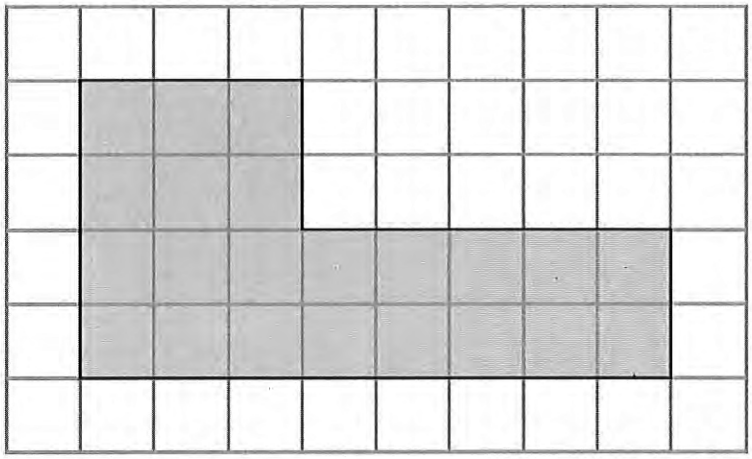
Diagram **NOT** accurately drawn

7 × 10

..... 70 ..... cm^2

(Total for Question is 2 marks)

4. The shaded shape is drawn on a grid of centimetre squares.



(a) Find the perimeter of the shaded shape.

..... 24 ..... cm

(1)

(b) Find the area of the shaded shape.

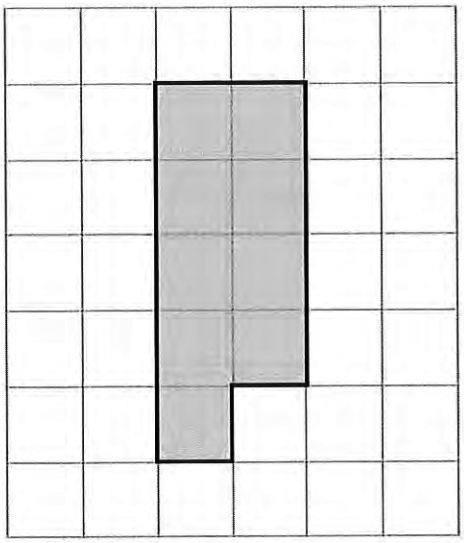
..... 22 ..... cm^2

(1)

(Total for Question is 2 marks)

5. The shaded shape is drawn on a grid of centimetre squares.

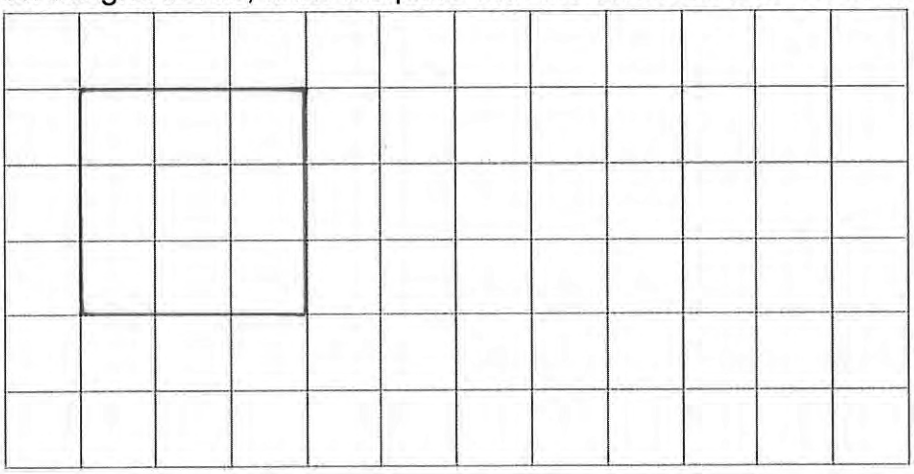
(a) Find the perimeter of the shaded shape.



14 ..... cm

(2)

(b) On the grid below, draw a square with the same area as the shaded shape.



(1)

(Total for Question is 3 marks)

6. Dilys buys a new house.
She wants to have a lawn in the back garden.
The lawn is going to be in the shape of a rectangle.

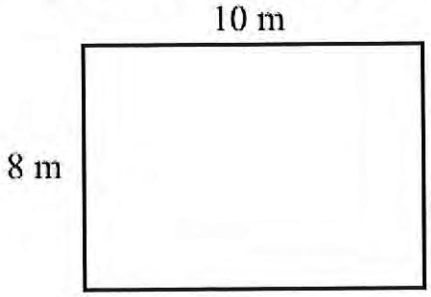


Diagram **NOT** accurately drawn

The lawn will have a length of 10 m. The lawn will have a width of 8 m.
Dilys wants to buy edging strip for her lawn.
The length of the edging strip needs to be equal to the perimeter of her lawn.
Edging strip costs £1.50 per metre. What is the total cost of the edging strip?

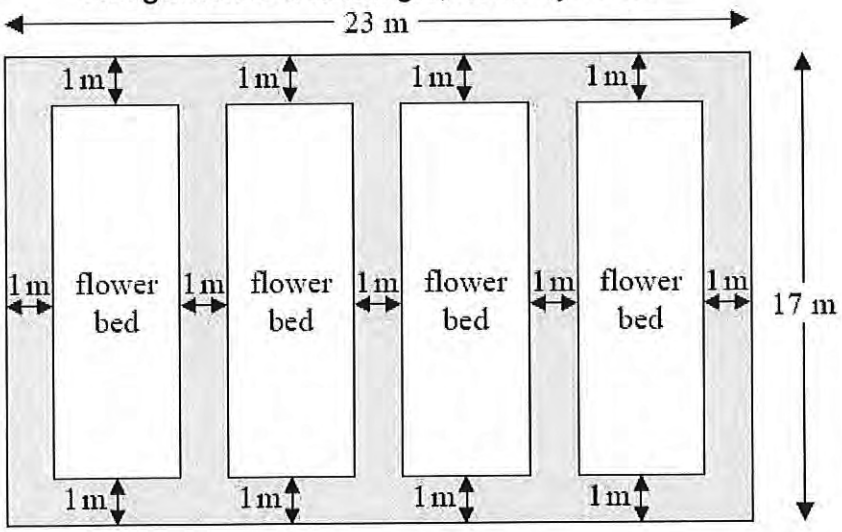
Perimeter : $2 \times (8 + 10) = 36$m

$36 \times £1.50 = £54$

£ 54

(Total for Question is 4 marks)

7. The diagram shows a garden with 4 flower beds.
The garden is a rectangle, 23 m by 17 m.



$17 - (1 + 1) = 15$m

$\frac{23 - 5}{4} = \frac{18}{4}$

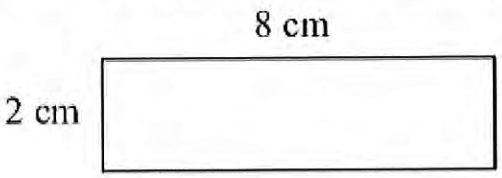
Diagram NOT accurately drawn
Each flower bed is a rectangle with the same length and the same width.
Work out the length and the width of a flower bed.

length = 15 m

width = 4.5 m

(Total for Question is 3 marks)

8. The diagram shows a rectangle and a square.



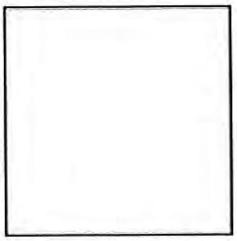


Diagram **NOT** accurately drawn

The perimeter of the rectangle is the same as the perimeter of the square.
Work out the length of one side of the square.

Perimeter : $2 \times (2 + 8) = 20$

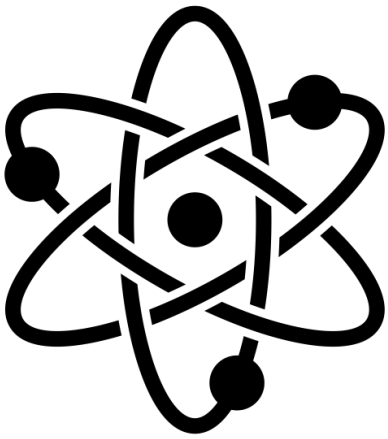
$20 \div 4 = 5$

.....5..... cm

(Total for Question is 4 marks)

SCIENCE

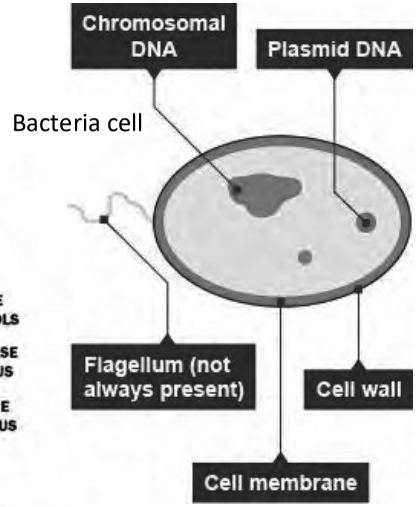
Use the knowledge organiser on the next two pages to make mind maps about the main topics you study in this term. Then complete the worksheets on different types of cells.



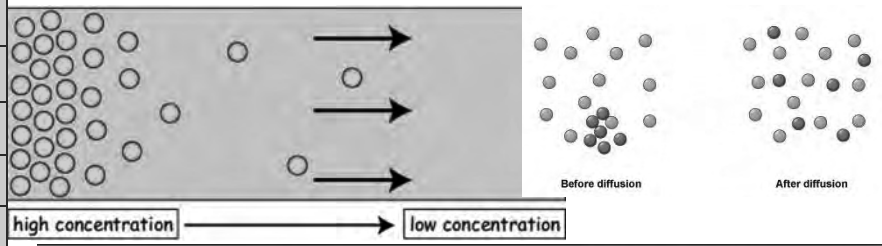
Year 8 - Term 1

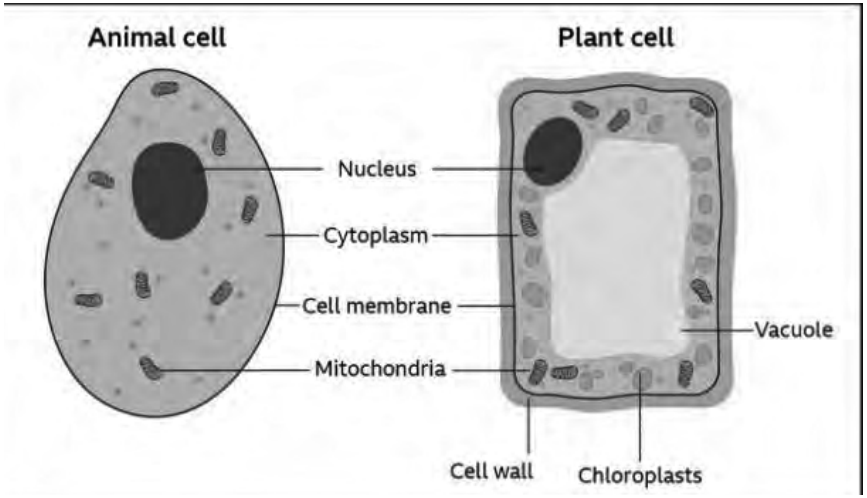
PRIDE THROUGH SUCCESS

Microscope	An instrument used for viewing very small objects, such as animal or plant cells, typically magnified several hundred times.
Specimen	Is a sample of something that is going to be looked at.
Slide	A thin piece of glass where the specimen is mounted.
Magnification	The process of enlarging the size of something, as an optical image. The specimen does not change size.
Resolution	The smallest distance between two points that can be seen as two points and not blurred into one points.
Magnification calculation	Length of object = length of magnified object ÷ magnification. for example, if a specimen appeared 10mm in length under a microscope with a magnification of 1,000 times, the calculation of the actual length would be: Length of object = 10 ÷ 1000 = 0.01 mm
Cell	the smallest structural and functional unit of an organism. The building blocks of life.
Nucleus	Contains genetic material, which controls the activities of the cell
Cell membrane	Controls the movement of substances into and out of the cell.
Cytoplasm	Most chemical processes take place here, controlled by enzymes
Mitochondria	Most energy is released by respiration here
Ribosomes	Where proteins are synthesised (made)
Vacuole	Filled with cell sap to help keep the cell turgid
Cell wall	Strengthens and provides support for the cell
Chloroplast	Contain chlorophyll, which absorbs light energy for photosynthesis
Photosynthesis	Plants make food using photosynthesis. This needs light, carbon dioxide and water. It produces glucose, and oxygen as a by-product .
Flagellum	Some bacteria have a flagellum – a whip like tail. This helps the bacteria to move itself along.
Chromosomal DNA	Chromosomal DNA carries most of the genetic information
Diffusion	Diffusion is the movement of a substance from a region of higher concentration to a region of lower concentration

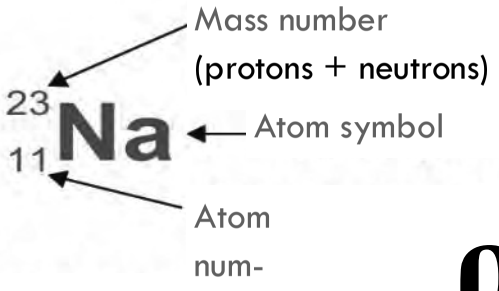


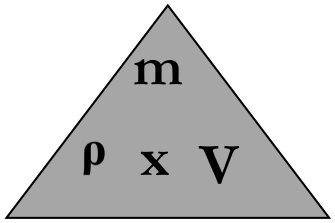
This is the process of diffusion.





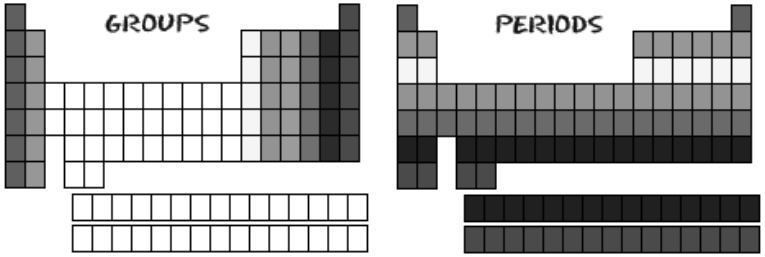
Atomic number	The number of protons in the nucleus of an atom. Also known as the proton number.
Atomic mass number	The total number of protons and neutrons in the nucleus of an atom (symbol *A*). Also known as the nucleon number.
Periodic table	Chart in which the elements are arranged in order of increasing atomic number.
Alkali Metals	Reactive metals found in group 1 of the periodic table. They increase in reactivity going down the group.
Transition Metals	Metals found in the middle of the periodic table between groups 2 and 3.
Halogens	Reactive non-metals that form coloured gases, they decrease in reactivity gong down the group. They are found in group 7 of the periodic table.
Noble gases	Unreactive gases found in group 0 of the periodic table. They have a full outer shell and are therefore stable.
Group	The vertical columns in the periodic table. An element's group number also shows how many electrons are on its atoms' outer shell.
Periods	The horizontal rows in the periodic table. An element's periodic number also shows number of electron shells in the atom.
Dimitri Mendeleev	Russian chemist who invented the periodic table. He ordered them in increasing atomic mass and left gaps for undiscovered elements.
Density	The density of a substance is a measure of how much **mass** it has for its **size**. It is measured in grams/cubic centimetre. (g/cm^3)

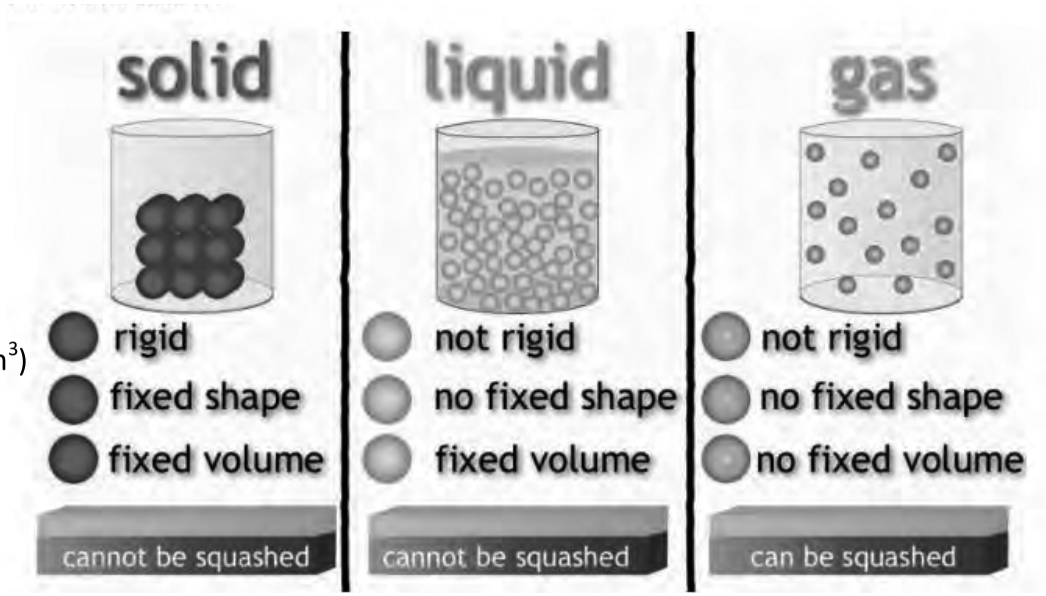




$$\rho = m / V$$

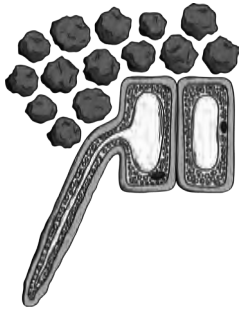
density (kg/m^3) mass (kg) volume (m^3)

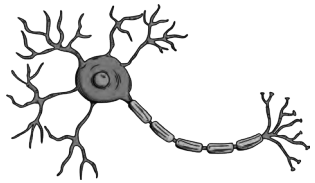


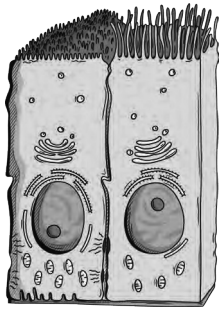


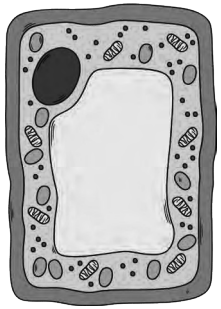
Specialised Cells

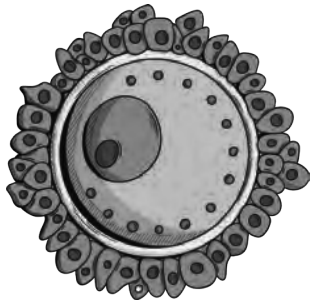
Name the specialised plant and animal cells using the words from the box below.







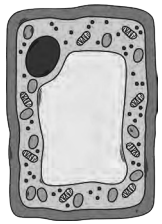




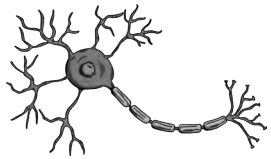
muscle cell	nerve cell	red blood cell	white blood cell	palisade cell	
sperm cell	root hair cell	ciliated cell	egg cell		

Specialised Cell Adaptations

Complete the table to explain how each specialised cell is adapted to its function.

Diagram	Cell Name	Function	Adaptations
			
			
			
			

Specialised Cell Adaptations

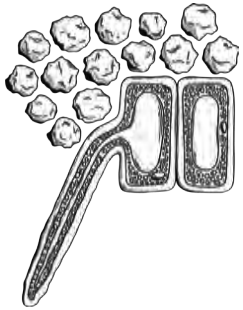
Diagram	Cell Name	Function	Adaptations
			
			
			
			
			

Specialised Cell Adaptations **Information Sheet**

Functions			**Adaptations**		
To transmit electrical impulses around the body to coordinate responses.	To move microorganisms and dust away from the lungs.	To absorb water and minerals from the soil.	• Biconcave shape to easily move through blood vessels. • Large surface area for diffusion. • No nucleus. • Contains haemoglobin.	• Lots of mitochondria to provide energy. • Store glycogen which can be broken down for use in respiration. • Can contract and relax.	• Cytoplasm contains nutrients for the developing embryo. • Membrane changes after fertilisation to stop any more sperm getting in.
To be fertilised by the sperm cell.	To carry oxygen around the body.	To contract to help parts of the body to move.	• Long tail to swim. • Lots of mitochondria to provide energy. • Chemicals in head to get into egg cell.	• Long, thin axon. • Branching dendrites at either end. • Can carry electrical impulses.	• Tiny hairs called cilia to sweep particles away. • Lots of mitochondria to provide energy.
To fight pathogens which cause disease.	To fertilise an egg cell to make a baby.	To carry out photosynthesis using energy from sunlight.	• Tall and thin. • Lots of chloroplasts for photosynthesis.	• Change shape to squeeze out of blood vessels and engulf pathogens. • Produce antibodies and antitoxins.	• Large surface area. • No chloroplasts.

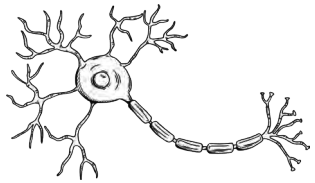
Specialised Cells **Answers**

Name the specialised plant and animal cells using the words from the box below.

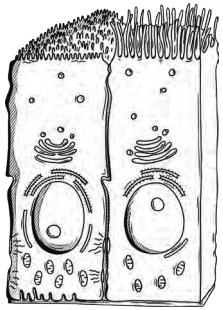


root hair cell

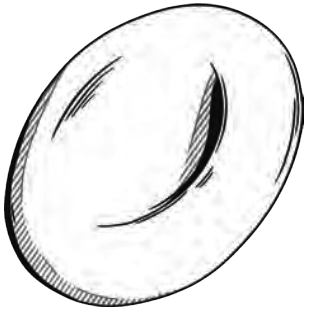
sperm cell



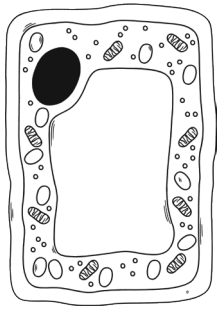
nerve cell



ciliated cell

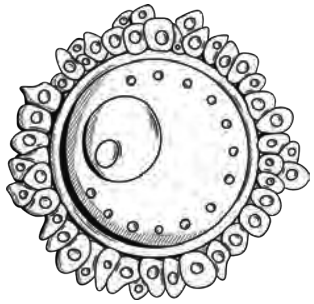


red blood cell

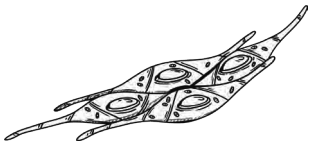


palisade cell

white blood cell



egg cell

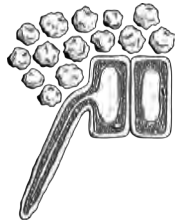
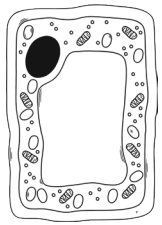


muscle cell

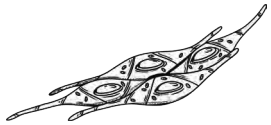
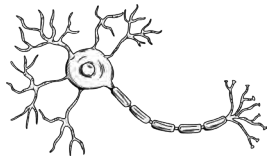
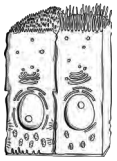
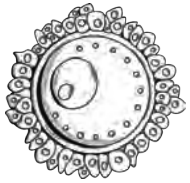
muscle cell		nerve cell		red blood cell		white blood cell		palisade cell	
	sperm cell		root hair cell		ciliated cell		egg cell		

Specialised Cell Adaptations **Answers**

Complete the table to explain how each specialised cell is adapted to its function.

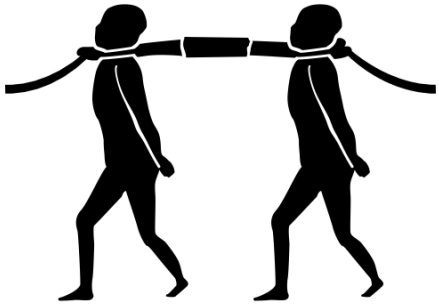
Diagram	Cell Name	Function	Adaptations
	**Root hair cell**	**To absorb water and minerals from the soil.**	• **Large surface area.** • **No chloroplasts.**
	**Sperm cell**	**To fertilise an egg cell to make a baby.**	• **Long tail to swim.** • **Lots of mitochondria to provide energy.** • **Chemicals in head to get into egg cell.**
	**Red blood cell**	**To carry oxygen around the body.**	• **Biconcave shape to easily move through blood vessels.** • **Large surface area for diffusion.** • **No nucleus.** • **Contains haemoglobin.**
	**Palisade cell**	**To carry out photosynthesis using energy from sunlight.**	• **Tall and thin.** • **Lots of chloroplasts for photosynthesis.**

Specialised Cell Adaptations **Answers**

Diagram	Cell Name	Function	Adaptations
	**Muscle cell**	**To contract to help parts of the body to move.**	• **Lots of mitochondria to provide energy.** • **Store glycogen which can be broken down for use in respiration.** • **Can contract and relax.**
	**Nerve cell**	**To transmit electrical impulses around the body to coordinate responses.**	• **Long, thin axon.** • **Branching dendrites at either end.** • **Can carry electrical impulses.**
	**Ciliated epithelial cell**	**To move microorganisms and dust away from the lungs.**	• **Tiny hairs called cilia to sweep particles away.** • **Lots of mitochondria to provide energy.**
	**Egg cell**	**To be fertilised by the sperm cell.**	• **Cytoplasm contains nutrients for the developing embryo.** • **Membrane changes after fertilisation to stop any more sperm getting in.**
	**White blood cell**	**To fight pathogens which cause disease.**	• **Change shape to squeeze out of blood vessels and engulf pathogens.** • **Produce antibodies and antitoxins**

HISTORY

Work through the activities on the following pages to help you learn a out the transatlantic slave trade.



A Piece of History

What are sources of evidence?

Any leftover of the past can be considered a source of evidence. Sources provide us with information to help us understand the past. Some examples of sources of evidence are: art, sculpture, photographs, letters, stories, diaries and artefacts such as clothing, weapons and cooking utensils.

Carefully read the extract below, thinking about what information it gives us about slavery.

Write your ideas for each source into the table.

The text shown below is taken from a newspaper advertisement which highlights a sad period in history. Read the advertisement carefully, then answer the questions.

FOR SALE

I will sell by public auction on Tuesday of next Court, being the 29th of November, Eight Valuable Family Servants, consisting of one . . . Man, a first- rate field hand, one No. 1 Boy, 17 years of age, a trusty house servant, one excellent Cook, one House-Maid, and one Seamstress. The balance are under 12 years of age. They are sold for no fault, but in consequence of my going to reside overseas.

North Carolina, October 28, 1859

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The Transatlantic Slave Trade Differentiated Reading Comprehension

The resources in this pack are designed to support teaching on or around the transatlantic slave trade and slavery or as part of UKS2 learning during Black History Month. This pack is specifically aimed at an UKS2 audience due to the distressing nature of the content.

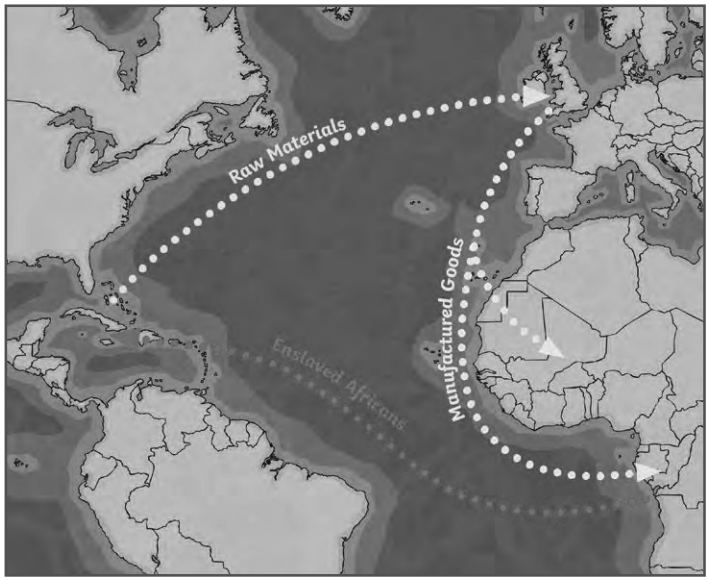
Please be aware that it will not be appropriate for the children in your class to research further into the slave trade due to the harrowing information and images freely available on the Internet.

Know your class: some content may be too upsetting for some children.

The Transatlantic Slave Trade

From the late 16th until the early 19th century, Europeans were responsible for the enslavement of millions of people from parts of West Africa, transporting them across the Atlantic Ocean in the most awful of conditions to be inhumanely sold into a life of hard, unpaid labour and brutality in the Americas. This was known as the transatlantic slave trade: a bleak and shameful period in history to which the deaths of millions of Africans can be attributed.

The Triangular Trade



The Triangular Trade is the name used to describe the three stages of the transatlantic slave trade. Its most prolific period was between 1740 and 1810, with estimates of around 60 000 people being enslaved each year.

Initially, vast ships travelled to West Africa carrying goods, such as cloth, guns and ironware. Upon arrival, these goods would be bartered for men, women and children who had been forcibly removed from their villages.

For the notorious middle passage across the ocean, these people endured unsanitary conditions below deck; overcrowded and filthy ships spent months at sea and many people died as a result. When the ships arrived in the West Indies, their weakened passengers were sold at auction to the highest bidder.

Thus, African people were bought and sold as possessions and became enslaved people, forced to work mercilessly on plantations, with little chance of payment or freedom.

The third stage of trade involved the ships returning to Europe with goods grown by the enslaved African villagers. These goods, including sugar, coffee, cotton and tobacco, were then sold to the people of Britain and beyond, completing the triangle which was built on the exploitation of many people. The process would then begin again.

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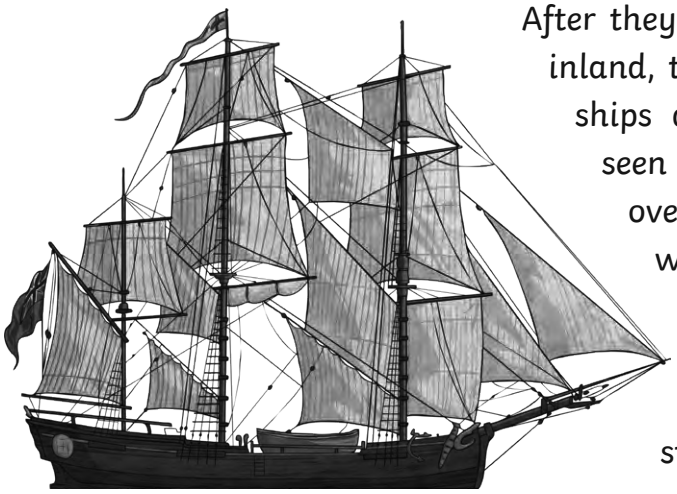
What Happened to the African Villagers on the Middle Passage?



After they had been taken from their homes inland, the villagers were forced onto huge ships at the coast, many having never seen the sea before. Ships often carried over 700 people at a time. They were chained together in cramped conditions because they were considered cargo by the ships' captains. Below deck, the air was stifling and pungent and conditions were unsanitary: many people grew ill.

If they survived the middle passage, once sold into slavery, life did not improve. Slave owners sought to crush the enslaved people's spirits and control them: they were given a new name, made to learn a new language and forced to adopt new customs. Daily life on a plantation involved working 14 hours, or more, a day with harsh beatings for any **transgressions**. However, despite the brutal consequences, many of the enslaved people did bravely resist and some were even able earn their freedom and join the fight for the abolition of slavery.

Olaudah Equiano's Story

Olaudah Equiano (1745-1797) was enslaved in West Africa (in modern-day Nigeria) as a child but was fortunate enough to survive and pay for his freedom. He became an **abolitionist** and travelled to Europe to share his life story and promote his autobiography.

'The Interesting Narrative of the Life of Olaudah Equiano' was published in 1789. Due to the fact it recounted his own traumatic experiences of slavery, it became a powerful, persuasive argument for its abolition.

Did You Know...?

Olaudah Equiano raised awareness of slavery by lecturing in Birmingham, Nottingham, Manchester, Sheffield and Cambridge.

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Abolition at Long Last

Eventually, British citizens began to recognise that slavery was unethical. In 1807, the House of Parliament outlawed the slave trade itself; however, it was not until 1833 that enslaved people began their freedom across the British Empire.

In the USA, there was great resistance to abolition and slavery continued, partly due to the fact that wealthy plantation owners continued to prosper from slave labour. Disagreements about slavery between Americans led to the American Civil War (1861-1865). Furthermore, the civil rights movement of the 1960s arose due to the continued **segregation** of Black and White Americans over 100 years following abolition.

Glossary

abolitionist	Someone who campaigns for abolition (the action of abolishing a system – in this case, slavery).
segregation	The enforced separation of different ethnic groups in a country.
transgression	An act that goes against a law, rule or code on conduct; an offence.

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Questions

1. Which statements about the transatlantic slave trade are true? Tick **two**.

   - ○ People were shipped across an ocean under atrocious conditions.
   - ○ Enslaved people were paid to work hard.
   - ○ Millions of Africans died as a result of its brutality.
   - ○ Only men were bought and sold.

2. **Upon arrival, these goods would be bartered for men, women and children who had been forcibly removed from their villages.**

   What does the word bartered mean? Tick **one**.

   - ○ given away
   - ○ captured
   - ○ exchanged, without using money
   - ○ grown on plantations

3. Look at the section entitled The Triangular Trade. Give two examples of goods which were sold during the last stage of trade.

   _____

   _____

4. Find a word which describes how the villagers had little room to themselves below deck.

   _____

5. Look at the section entitled **What Happened to the African Villagers on the Middle Passage?** The author describes the air as **stifling and pungent**. What does this tell us about conditions below deck on the ships on the middle passage?

   _____

6. Summarise what happened to the passengers if they survived the middle passage and arrived at their destination.

   _____

   _____

   _____

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7. Why do you think some enslaved people tried to resist slavery, despite the consequences?

8. Explain what people such as Olaudah Equiano hoped to achieve by visiting so many cities in Britain.

9. In your own words, explain why you think there was **great resistance to abolition** and it took so long for enslaved people to be freed.

10. Life improved for some people during the 1800s. Do you agree or disagree? Use evidence from the text to support your answer.

    Agree / Disagree (circle one)

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Questions

1. Which statements about the transatlantic slave trade are true? Tick **two**.

   - ☑ People were shipped across an ocean under atrocious conditions.
   - ☐ Slaves were paid to work hard.
   - ☑ Millions of Africans died as a result of its brutality.
   - ☐ Only men were bought and sold.

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   What does the word bartered mean? Tick **one**.

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   - ☐ captured
   - ☑ exchanged, without using money
   - ☐ grown on plantations

3. Look at the section entitled The Triangular Trade. Give two examples of goods which were sold during the last stage of trade.

   A choice of two from: sugar, coffee, cotton or tobacco.

4. Find a word which describes how the villagers had little room to themselves below deck.

   overcrowded

5. Look at the section entitled **What Happened to the African Villagers on the Middle Passage?** The author describes the air as **stifling and pungent**. What does this tell us about conditions below deck on the ships on the middle passage?

   It tells us that it was hard to breathe, hot and very smelly. As a result, many people became ill because conditions were unsanitary.

6. Summarise what happened to the passengers if they survived the middle passage and arrived at their destination.

   Pupils' own responses, such as: If they survived, their lives did not improve. They were told given a new name and forced to adopt new customs. If they made any mistakes they were given harsh beatings.

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7. Why do you think some enslaved people tried to resist slavery, despite the consequences?

   Pupils' own responses, such as: I think they tried to resist because they could not stand their harsh treatment and want to stand up to the slave owners. They refused to be controlled and were willing to take the risk of being beaten.

8. Explain what people such as Olaudah Equiano hoped to achieve by visiting so many cities in Britain.

   Pupils' own responses, such as: I think he hoped to let everyone know about the harsh treatment of enslaved people during the slave trade. He wanted people to know how their sugar and coffee were grown. He wanted more support for an end to slavery.

9. In your own words, explain why you think there was **great resistance to abolition** and it took so long for enslaved people to be freed.

   Pupils' own responses, such as: I think many people made a lot of money from slavery and they would not have wanted it to end. Also, many people, did not fully understand what was really happening so it took a long time for them to realise.

10. Life improved for some people during the 1800s. Do you agree or disagree? Use evidence from the text to support your answer.

    Agree / Disagree (circle one)

    Pupils' own responses either agreeing or disagreeing with the statement, such as: Life was a little better for some people in some ways. Enslaved people were freed across the British Empire from 1833. However, slavery continued in the USA after abolition. It also led to a war.

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Questions

Answer the questions below in full sentences.

1. What is for sale?

2. Why are they being sold?

3. Who do you think wrote the advertisement?

4. Why was the advertisement written?

5. What does the advertisement tell us about life in the 1800s for a black person?

6. What questions would you ask the auctioneer?

7. What questions would you ask the slaves?

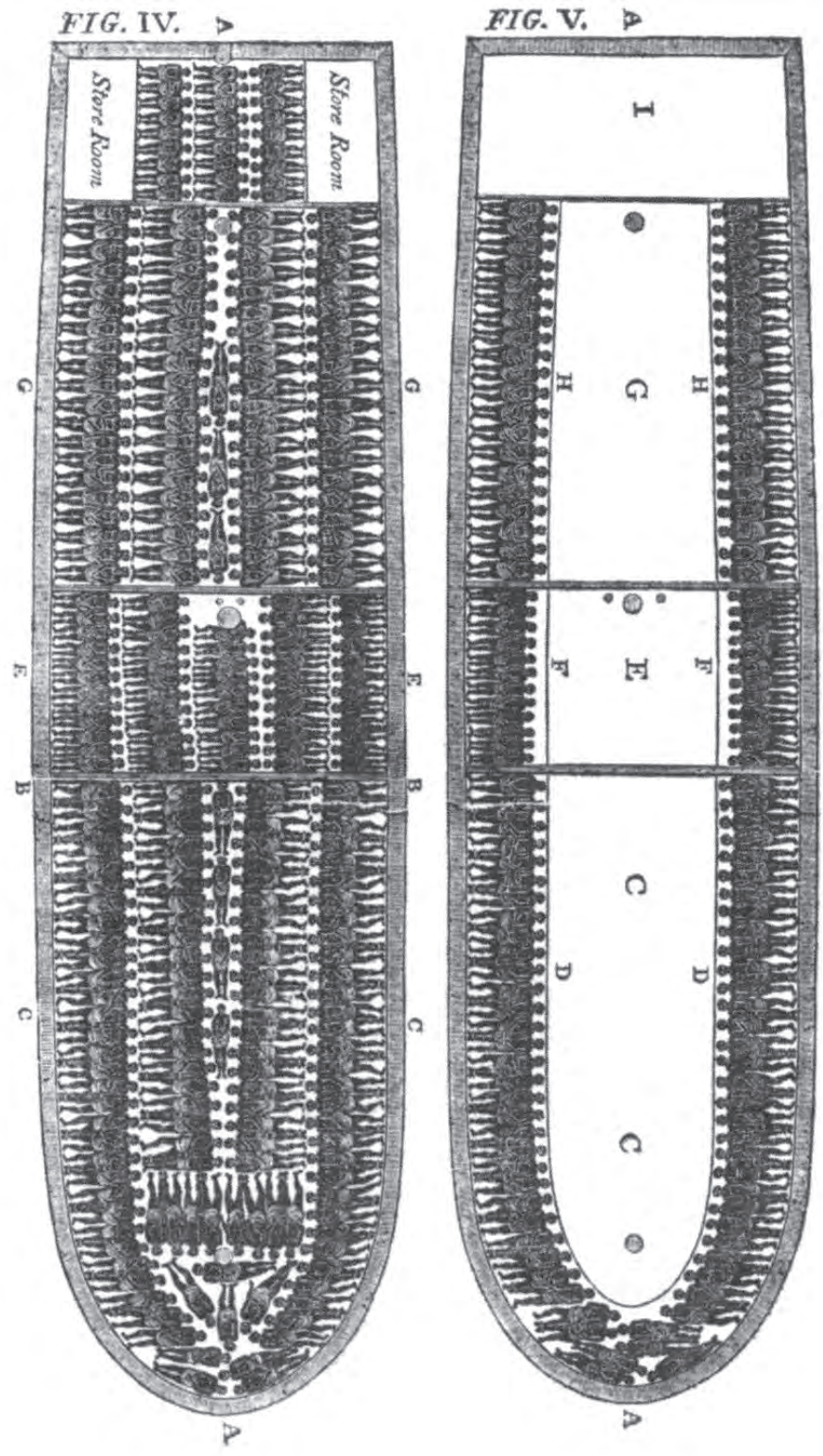
8. What type of family do you think would buy the slaves?

9. Why would people want to buy the slaves in the advertisement?

10. What strategies does the advertisement use to try to 'sell' the slaves?

The Slave Trade

What Was It like on the Middle Passage?



The Middle Passage was the journey slaves took from Africa to the Americas.

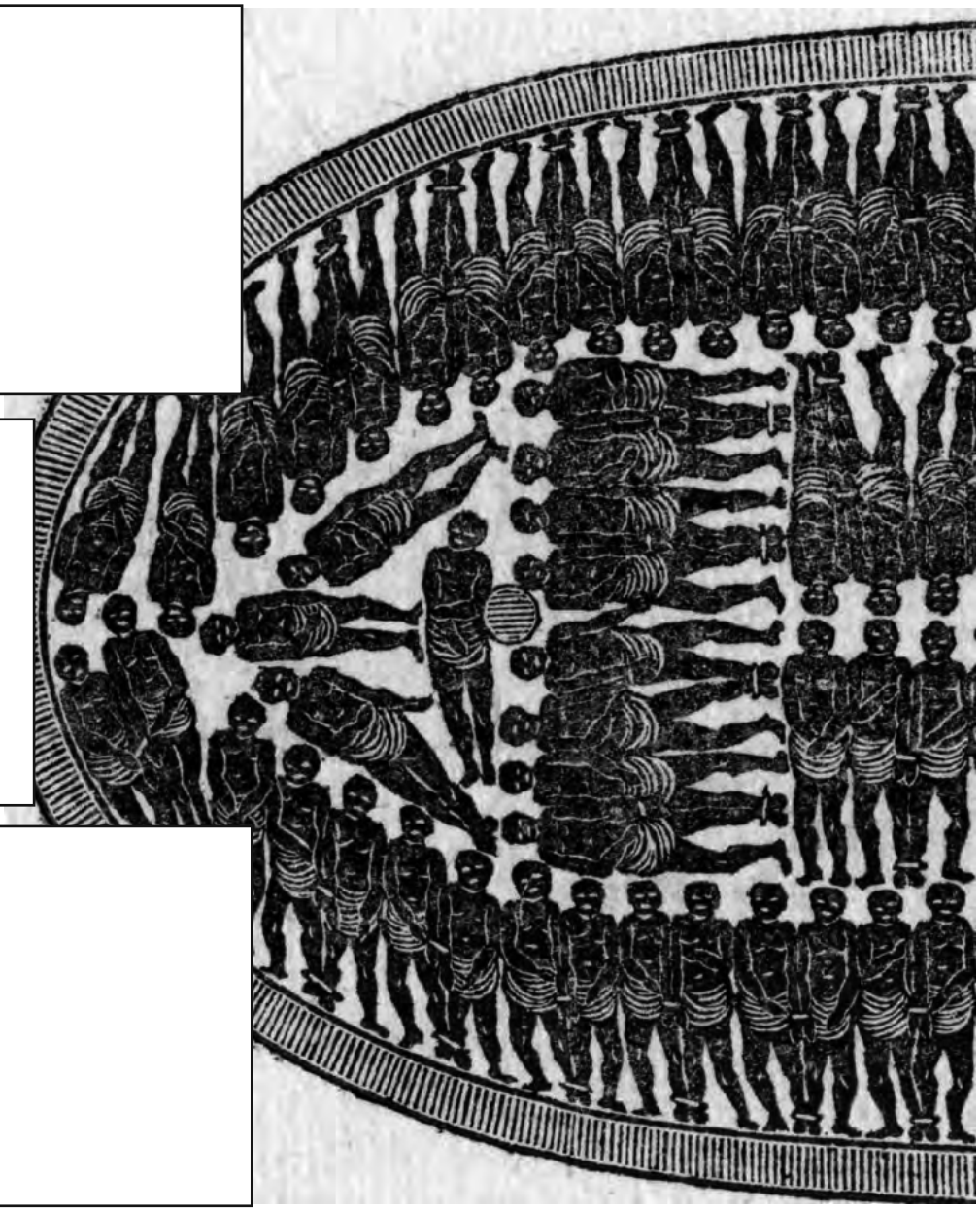
When slaves were taken on the Middle Passage, they were packed tightly into huge ships. Little care was given to the slaves: they were considered as cargo and not humans.

The journey across the ocean would take many weeks. Slave traders knew not all the slaves they had packed would survive the journey. So, if slaves were ill they may be thrown overboard. It was not uncommon for whole rows of slaves to be thrown overboard if some were dead or ill.

Slave owners would still make a huge profit so long as half the slaves on the ship made it to the port.

What Was It like on the Middle Passage?

What would you hear?



What would you smell?

What would you see?

What would you feel?

What emotions might you feel on the Middle Passage?

What Was It like on the Middle Passage? **Answers**

What would you hear?

waves

storms

creaking of the ship

different languages

chains clanking

whips

crying/moaning

What would you smell?

salt

urine/faeces

vomit

human odour

What would you see?

bodies

wood/floorboards

Europeans

What would you feel?

wooden floorboards

cold metal chains

sweaty bodies

humid/hot

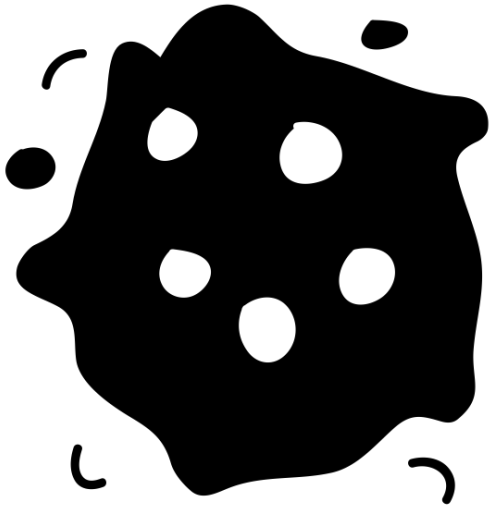
seasick – rocking boat

What emotions might you feel on the Middle Passage?

Frightened, anxious, scared, lonely, shocked, violated

GEOGRAPHY

Use the knowledge organiser on the following page to create a mind map of the key facts you have learned this term. Then, complete as many of the disease research tasks as you can.



GEOGRAPHY

Disease Key words

Communicable- An infectious disease that is contagious and that can be transmitted either directly or indirectly from one source to another

Non-communicable- non infectious health condition that cannot be spread from person to person. It also lasts for a long period of time

Virus- A virus invades living cells and uses their chemical machinery to keep itself alive and to replicate itself

Bacteria- Bacteria are microscopic, single-celled organisms that thrive in diverse environments. These organisms can live in soil, the ocean and inside the human gut.

Disease- a disordered or incorrectly functioning organ, part, structure, or system of the body

Epidemic- a disease that affects a large number of people within a community, population, or region

Pandemic- is an epidemic that's spread over multiple countries or continents

HIV- Human Immunodeficiency Virus

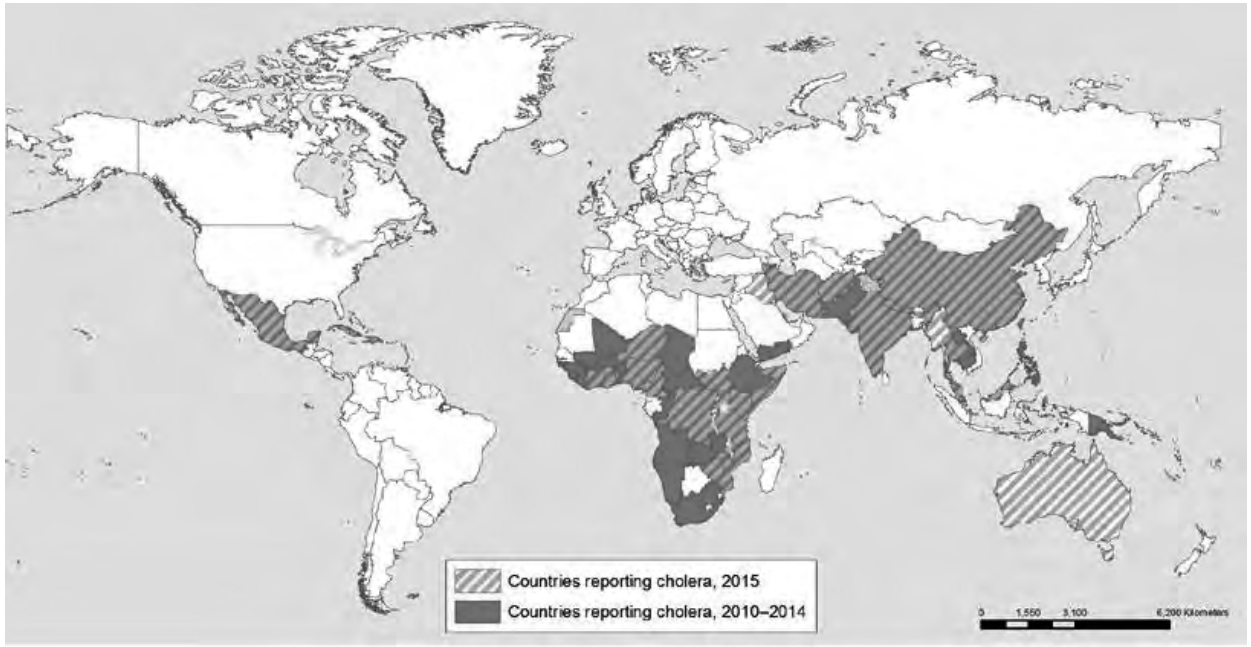
AIDS- Acquired immunodeficiency syndrome

Malaria- A disease transmitted by mosquitoes

Cholera- A highly infectious disease spread by dirty water

Bubonic plague- An infectious disease that is caused by the bacterium Yersinia pestis and is transmitted to humans from infected rat fleas

Cancer- An abnormal growth of cells that spreads in an uncontrolled way.



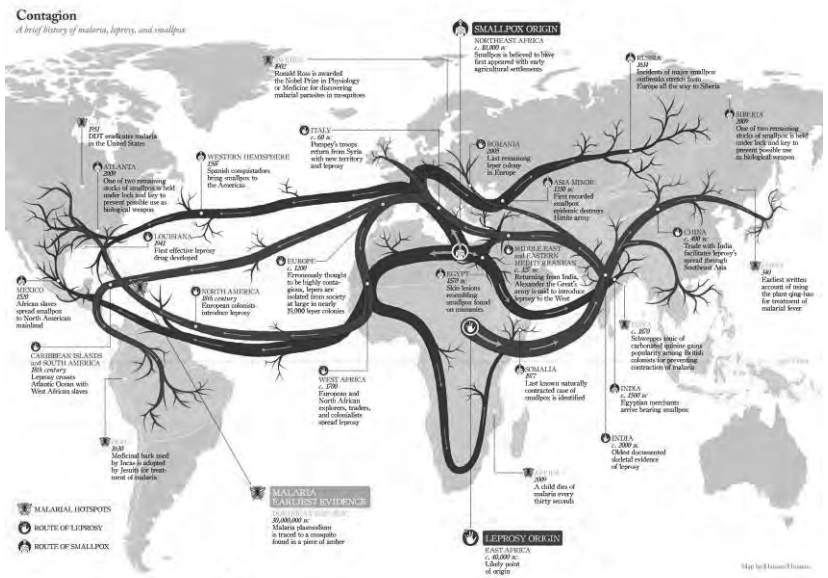
Question- why are some countries still reporting cases of Cholera, when the UK eradicated it in the 1800s?

Vaccines and antibiotics

A vaccine is a substance used to stimulate the production of antibodies and provide immunity against one or several diseases. It is supposed to stop you getting the specific disease.

An antibiotic is a medicine (such as penicillin or its derivatives) that inhibits the growth of or destroys microorganisms. You will take this if you are infected with a BACTERIA.

These will not work with viruses such as a cold.



Question: Describe how diseases move around the world?

Vaccine ages	
1 year	Hib/MenC (1st dose) MMR (1st dose) Pneumococcal (PCV) **vaccine** (2nd dose) MenB (3rd dose)
2 to 10 years	Flu **vaccine** (every year)
3 years and 4 months	MMR (2nd dose) 4-in-1 pre-school booster
12 to 13 years	HPV **vaccine**

The **NHS** stands for the National Health Service. It refers to the Government-funded medical and health care services that everyone living in the UK can use without being asked to pay the full cost of the service. It is paid for through National Insurance payments from working tax payers.

TASK 1

Use a dictionary or the internet to find the definition of the keywords to create a glossary (below)

Keyword	Definition
Aid	
Birth rate	
Climate Change	
Contagious	
Death rate	
Diseases of wealth	
Diseases of poverty	
Endemic	
Epidemic	
Famine	
Food aid	
Foreign aid	
Globalisation	
Health	
Health care	
HIV	
Income	
Infant mortality rate	
Infectious disease	
Life expectancy	
Literacy	
Malaria	
Malnutrition	
Millennium Development Goal	
Morbidity	
Mortality	
Pandemic	
Pollution	
Poverty	
Urbanisation	
Vaccines	
Wealth	
WHO	

Task 2 - Ranking the most threatening diseases

Choose at least 3 infectious diseases which you think pose the greatest threat to people around the world. Research and collect information about them, complete the table below and rank them by how threatening they are (1 = most threatening). Use this website to help

http://www.hpa.org.uk/

Disease	Cause	Symptoms	Treatment	Location (where is the disease found?)	Number of people affected	Number of deaths caused by disease	Rank

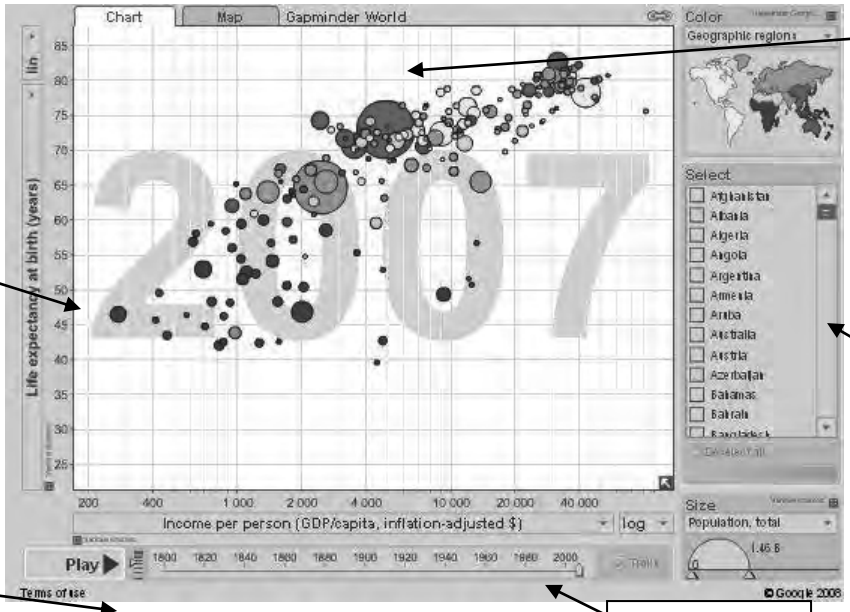
Links between disease and wealth - Extension task

For those that want to stretch themselves and find a few more links between disease and well pretty much anything then this site is amazing. It might take a little while to master but it really is very interesting.
Go to http://www.gapminder.org/ click on Gapminder World. You will open a page, part of which you can see below. Basically have a play and see what happens. You may be able to identify some links that you can use to prove or disprove the hypothesis. You will need to use the print screen button if you want to print anything from this site. You may want to press the full screen option also.

The graph you can see below shows the relationship between GDP (wealth) and life expectancy. As you can see, the less wealthy a country is the lower its life expectancy. The colours relate to different countries and the size of the circle relates to the size of the countries population.

By pressing play you can see what happens to the relationship through time. You can change lots of different things on this graph to help you prove or disprove the hypothesis.

Try clicking on the Y axis where it says Life expectancy - You will see a list of options. One of which is health - Perhaps you could change it to one of those and see what happens. Some things show better patterns and links than others.
Have a play and see what you think.



Click here to see information on a map

Click here to change indicator

Click here to highlight countries

Click here to see changes through

Click here to change indicator

Knowledge organiser| Personal development Term 1 Year 7

Key Words

1	Recovery	A return to a normal state.
2	Study Skills	Organising and taking in new information, retaining information,
3	Resilience	The capacity to recover quickly from difficulties
4	Safety	Something designed to prevent injury or damage
5	Explain	Make (an idea or situation) clear to someone by describing it in more detail
6	Demonstrate	Give a practical exhibition and explanation of something
7	Construct	form (an idea or theory) by bringing together various conceptual elements.
8	Reflect	To think deeply or carefully about.
9	Review	An assessment of something with the intention of instituting change if necessary.

Lessons this Term

Looking after Myself
Managing my feelings
Loss and Grief
Looking forward, beyond Covid-19
Study Skills
Rail water and Road Safety
Relationships
Relationships in school
Online Safety

Mini Quiz

1	What Strategies can I use to manage my feelings ?
2	What is the best way of storing information ?
3	What resources can we use to research?
4	List the signs of negative and positive relationships.
5	List ways you can stay safe online
6	Where could you report a problem about bullying , problems at home or ask about safety ?

Extra Reading Podcast

1. The Most Magnificent Thing, Ashley Spires. (this can be watched on you Tube https://youtu.be/UM8oN4yzHqw
2. The Teenage life podcasts. Available at https://podcasts.apple.com/us/podcast/this-teenage-life/id1456067511
3. Naik, Anita. (2013) 'Self Esteem and being you' (Teen Life confidential) available at https://www.amazon.co.uk/Self-Esteem-Being-Teen-Life-Confidential/dp/0750272163
4. Caren Baruch Feldman. PHD. (2017) 'The Grit Guide for Teens' available at https://www.amazon.co.uk/Grit-Guide-Teens-Perseverance-Self-Control-ebook/dp/B01LWA5CT3

Kahoot!

Try a Relationships Kahoot !
https://create.kahoot.it/details/realtionships/7b75198e-87e6-4c29-a577-8664aba28c9a

MFL

Use the knowledge organisers on the next two pages to test yourself on keywords (using the look/cover/check method). If you can, create flashcards with key French or Spanish words on one side and their translation on the other. Then, either test yourself or ask someone else to test you.

Y7 UNIT 1 KNOWLEDGE ORGANISER SPANISH – MI VIDA

¿Qué tal?

Hello	Hola
great	Fenomenal
very good	Muy bien
bad	Mal
I live in	Vivo en
I am…years old	Tengo…años
How are you?	¿Qué tal?
Where do you live?	¿Dónde vives?
How old are you?	¿Cuántos años tienes?

colores

colores		colours	
white	blanco	blue	azul
grey	Gris	red	rojo
yellow	amarillo	pink	rosa
brown	marrón	green	verde
black	negro	orange	naranja

Mi cumpleaños es el….

cumpleaños		birthday			
1	uno	11	once	21	veintiuno
2	dos	12	doce	22	veintidós
3	tres	13	trece	23	veintitrés
4	cuatro	14	catorce	24	veinticuatro
5	cinco	15	quince	25	veinticinco
6	seis	16	dieciséis	26	veintiseis
7	siete	17	diecisiete	27	veintisiete
8	ocho	18	dieciocho	28	veintiocho
9	nueve	19	diecinueve	29	veintinueve
10	diez	20	veinte	30	treinta

los meses

meses		months	
January	enero	July	julio
February	febrero	August	agosto
March	marzo	September	septiembre
April	abril	October	octubre
May	mayo	November	noviembre
June	junio	December	diciembre

(No) Soy

I am (not)	(No) Soy		
fun	divertido	serious	serio
brilliant	estupendo	nice/kind	simpático
fantastic	estupendo	sincere	sincero
generous	generoso	timid	tímido
great	genial	silly	tonto
cool	guay	quiet/calm	tranquilo
clever	listo		

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(No) Tengo

I (don't) have	(No) Tengo		
brother(s)	un hermano(s)	stepbrother(s)	un hermanastro(s)
sister(s)	una hermana(s)	stepsister(s)	una hermanastra(s)
I am an only child		Soy hijo/a única	
a dog	Un perro	a fish	un pez
a horse	Un caballo	a guinea pig	una cobaya
a snake	Una serpiente	a rabbit	un conejo
a cat	un gato	a mouse	un ratón
he/she is	Es	he/she has	Tiene

Y7 UNIT 1 KNOWLEDGE ORGANISER FRENCH– MA VIE

Comment t'appelles-tu?

My name is	Je m'appelle
I live in…	J'habite à…
I am … years old	J'ai…ans
11	Onze
12	Douze
What's your name?	Comment t'appelles-tu?
Where do you live?	Où habites-tu?
How old are you?	Quel âge as-tu?

colores

colores		colours	
white	blanco	blue	azul
grey	Gris	red	rojo
yellow	amarillo	pink	rosa
brown	marrón	green	verde
black	negro	orange	naranja

J'aime

I like…		J'aime	
I don't like…		Je n'aime pas	
Rugby	Le rugby	Games consoles	les consoles de jeux
Hard rock	Le hard-rock	Pizzas	les pizzas
Racism	Le racisme	Journeys	les voyages
Rap	Le rap	Manga comics	les mangas
Tennis	Le tennis	Dogs	les chiens
Football	Le foot	Cats	les chats
The cinema	Le cinéma	Spaghetti	les spaghettis
Roller-skating	Le roller	Reptiles	les reptiles
Music	La musique	Insects	les insectes
Dance	La danse	Video games	les jeux vidéos
Tecktonik dance	La tecktonik	Maths	les maths
and		et	
but		mais	
also		aussi	

Je suis

I am	Je suis		
trendy	branché(e)	nice	gentil(le)
charming	charmant(e)	impatient	impatient(e)
cool	cool	intelligent	intelligent(e)
curious	curieux/ curieuse	modest	modeste
funny	drôle	polite	poli(e)
generous	généreux/ généreuse		

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(No) Tengo

I (don't) have	(No) Tengo		
brother(s)	un hermano(s)	stepbrother(s)	un hermanastro(s)
sister(s)	una hermana(s)	stepsister(s)	una hermanastra(s)
I am an only child		Soy hijo/a única	
a dog	Un perro	a fish	un pez
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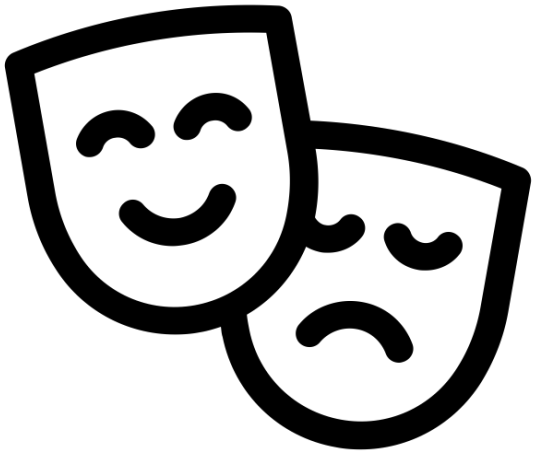
a cat	un gato	a mouse	un ratón
he/she is	Es	he/she has	Tiene

DRAMA

Use the knowledge organisers on the next two pages to create a mind map of key terms and facts that you need to know for drama.



Y7 Drama Knowledge Organiser

Dramatic Word Bank

Word	Definition/Use
Physicality	
Stance/ Body language	The way someone stands ad uses their body
• Tall • Powerful • Open • Closed • Strong • Intimidating • Slumped • Upright • Shaky • Tense • Relaxed	
Facial expressions	Movement of the face into different looks.
• Scrunched • Frown • Squint • Shocked • Open mouthed • Pursed lips • grimace	
Voice	
Tone	How you say something
• Aggressive • Polite • Soft • Harsh • Pleading	
Pitch	The highness of lowness of your tone
Pace	The speed that you speak
Volume	The level that you speak e.g loud or quiet
Pause	The stops in your speech these can be long or short.
Accent	The way that you pronounce language relating normally to the area you are from.

Introduction to Theatre

Expectations

Be on time.
Come in sensibly and ready to work.
No shouting out. Hands up to contribute something to the lesson.
If someone is speaking, make sure you listen to them.
Participate in the lesson. Have a go!
Support others, be respectful and no put downs!
Be prepared to work with anyone.
Enjoy and have fun safely!

Dramatic Techniques

Tableaux	Still Image
Mark the Moment	Highlighting a specific moment.
Narration	Story Telling
Slow Motion	Exaggerating Movement
Conscious Corridor	Exploring emotions
Thought Tracking	Characters thoughts.
Mime	Acting in silence

TOPIC SPECIFIC KNOWLEDGE

What does Genre mean?

A style or category of art, music, or literature.

What Does Theatre Style mean?

Influenced by their time and place, artistic and other social structures.

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WORKING AS PART OF A GROUP

- Be co-operative! (Take part and follow the instructions of your team members)
- Listen respectfully to others' ideas
- Share your own ideas and make contributions
- Stay in your working space
- Plan your time effectively and structure your rehearsal
- Think about where your audience will be and rehearse with this in mind
- Make sure everyone knows what they are doing
- Practice your transitions (the moments between a scene change

Y7 Drama Knowledge Organiser

Introduction to Theatre

PERFORMANCE

A piece that is presented to an audience.

AUDIENCE

The people who watch a performance.

PERFORMANCE SKILLS

Characterisation: Using a range of performance skills to create a character that is different to yourself.

Posture: The way that you sit or stand. The alignment of your spine.

Gesture: A movement (usually of the arm/hand) that communicates a specific meaning.

Facial Expression: Using your face to show how a character is feeling.

Levels: Using different heights to communicate meaning or to add visual interest.

Vocal Clarity: Speaking loudly and clear enough for the audience to understand what you are saying.

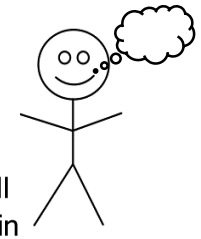
Exaggeration: Making your vocals or physicality more extreme/bigger.

DRAMA TECHNIQUES

Narration: Normally spoken to the audience, performers give information, tell the story or comment on the action.

Still Image/Freeze Frame: A 'living picture' showing a moment in time - as though the pause button has been pressed.

Thought-Tracking: A character reveals their inner thoughts or feelings to the audience. This information should tell the audience somethin new.



Mime: A silent performance, that uses physicality to communicate intentions to the audience.

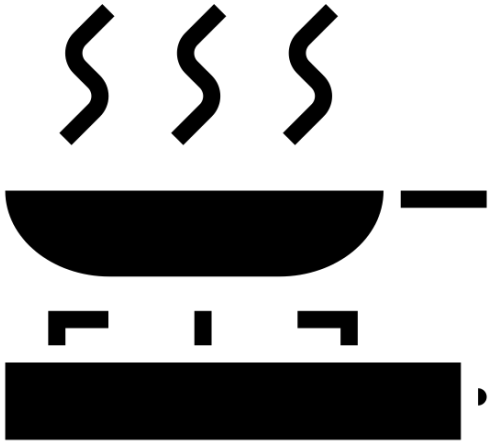
Slow motion: Moving at a least 2 third's slower than normal speed; this allows the audience to see the detail of a movement

Marking the Moment: 'Highlighting'/ drawing the audience's attention to a significant or important moment.

Marking the moment can be done through: slow motion, freeze frame or 'reverse and repeat'.

FOOD TECHNOLOGY

Use the knowledge organisers on the next two pages to create a mind map of key terms and facts that you need to know for food tech.



Year 7 Food and Nutrition Knowledge organiser

Hygiene rules

Wash hands!
Tie hair up
Wear apron
No false nails or nail varnish
Antibacterial spray on surfaces before & after cooking

Bacteria need 4 things to grow:

1. Moisture
2. Food
3. Time (numbers double every 20 mins
4. Warmth

Why food is cooked:

1. To make it safe to eat
2. To improve the shelf life
3. To develop flavour
4. To improve texture
5. To give variety

Methods of heat transfer

Convection - when the environment (air, water or oil) is heated up.
e.g. - baking a cake
- boiling an egg

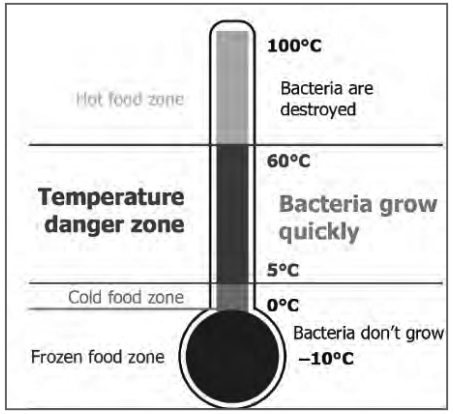
Conduction - when heat is transferred directly.
e.g. - frying an egg

Radiation - when heat radiates
e.g. - toast

Food skills	Techniques
Knife skills - Chopping	Bridge hold, claw grip, slice, dice, julienne, baton's, meat and vegetable preparation
Organisation / tidying skills	Being able to work hygienically and safely to produce recipes and ensure all equipment, utensils and work area is fully clear and tidy. Teamwork and communication. Following personal hygiene rules.
Food safety	Using food probes for meat to check for safe temperatures (75C)
Weighing and measuring	Demonstrating accurate measurement of liquids and solids. Being able to use both manual and digital scales.
Use of equipment	Oven, hob, chopping boards, knives, sieve, mixing bowl, measuring jug/spoons
Making sauces	Reduced sauce, roux sauce
Working with ingredients	Using a range of ingredients from the Eatwell Guide to create recipes.
Test for readiness	Using a knife/skewer, finger or poke test, bite or visual colour check to establish whether a recipe or ingredient is ready.
Adapting recipes	Using a nutritional analysis program to analyse recipes. Making adaptations to make the recipe better suit the Eatwell Guide / healthy eating requirements.
Judge and manipulate sensory properties	Demonstrate how to taste and season during cooking. Self-evaluation of practical dishes made.
Food science	Learning how foods react with heat and acid and adapt accordingly.
Cooking methods	Using a variety of cooking methods including conduction, convection and radiation.
Food styling	Quality and creative presentation techniques. Using garnishes and decorative techniques where possible.

The stages of washing up:

1. Getting ready
2. Rinse
3. Dry and Put away
4. Final clear up

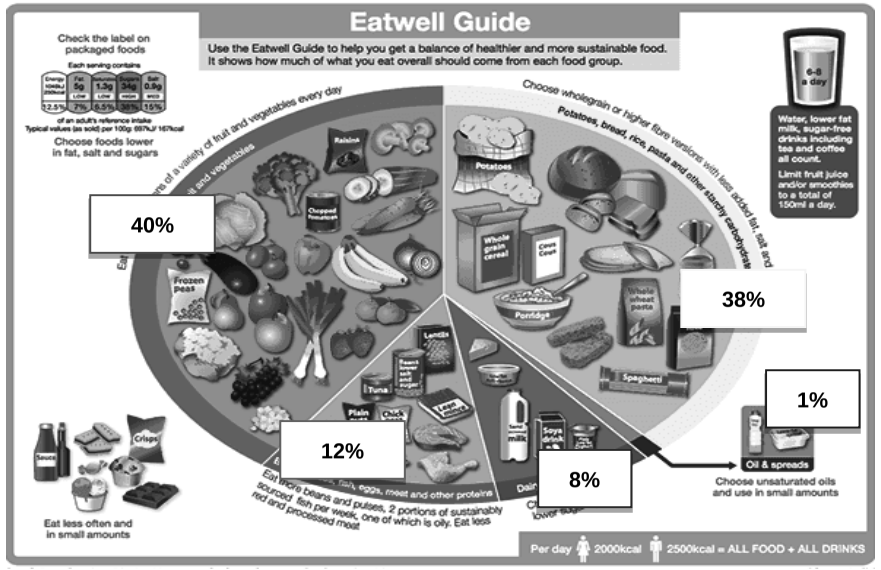


FOOD ALLERGY OR FOOD INTOLERANCE?

INTOLERANCE	ALLERGY
• usually comes on gradually	• usually comes on suddenly
• may only happen when you eat a lot of the food	• small amount of food can trigger
• may only happen if you eat the food often	• happens every time you eat the food
• is not life-threatening	• can be life-threatening

Key abbreviations: Weights and Measurements

L	Litres	
g	Grams	
ml	millilitres	1000ml =1 litre
Kg	kilograms	1000g
Tbsp	tablespoons	15ml
Tsp	teaspoon	5ml
1pt	1 pint	568ml



FOOD LABELLING

A lot of foods have nutritional labelling on them. It often shows the nutritional information per serving. It also shows the contribution it makes to the daily amounts required.

1/3 of a pie (oven cooked)

ENERGY	FAT	SATURATES	SUGARS	SALT
2218kJ 533kcal	34.5g	16.1g	2.3g	1.25g
27%	49%	81%	3%	21%

% of the Reference Intakes

Typical values per 100g: Energy 1210kJ/291kcal

The use of colour helps you to easily see whether they are high in saturated fat, sugar and salt.
Red=high
Amber=medium
Green=low

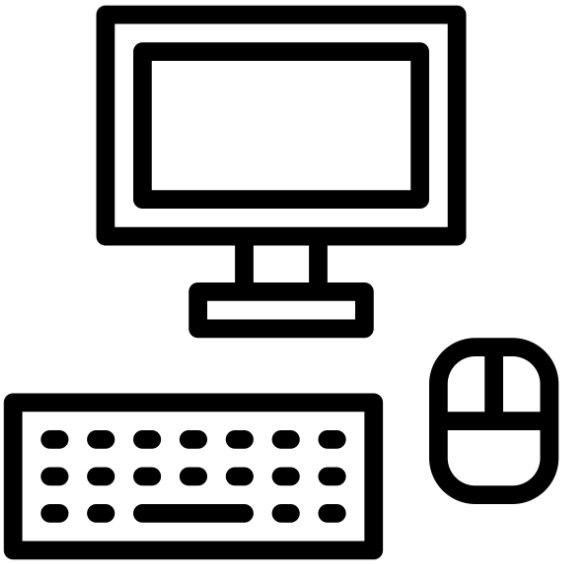
Bridge hold

Claw grip

Name of the Nutrient	Sources	Function	
Carbohydrates (energy giving food)	Rice, potato, wheat, sugar	Provides energy	
Fats (energy giving food)	Butter, ghee, milk, cheese	Gives more energy compared to carbohydrates	
Vitamins and Minerals (protective food)	Fruits and vegetables	Required for normal growth and development	
Proteins (body building food)	Milk, eggs, meat, fish, soybean	Helps in building and repair of body	

IT

Use the knowledge organisers on the next two pages to create a mind map of key terms and facts that you need to know for IT.



Knowledge organiser

IT Term 1 Year 7

Key Words		
1	Keyboard	Computer hardware used to enter characters into computer
2	Monitor	An output device used to display objects.
3	Mouse	An input device used to control an on screen pointer
4	Operating system	Software designed to enable the user to operate the computer
5	Identity	Personal details of an individual such as name and address
6	Phishing	A method used by criminals to acquire personal information
7	Pharming	A website used by criminals to collect personal information
8	Encryption	Method used to protect data
9	Font	Style of text used by computer applications
10	Synoptic	forming a general summary or synopsis

Lessons this year

- Introduction to ICT
- Term 2 staying safe online
- Word processing
- Presentations
- Spreadsheets
- Synoptic project
- Relationships
- Relationships in school
- Online Safety

You will frequently be using these two websites throughout your time here

- **Teams (office 365)**
- **Google**

Mini Quiz

1	Give two important things about passwords.
2	Name some dangers when online.
3	What program would you open for a slide show?
4	What would you use word for ?
5	List ways you can stay safe online.
6	What can we use Excel for ?

Extra Reading Podcast

1	Microsoft word for beginners you Tube https://youtu.be/HC13M8FGINc
2	Microsoft power point for beginners https://youtu.be/XF34-Wu6qWU
3	The beginners guide to Excel https://youtu.be/rwbho0CgEAE
4	Stowell, Louie. 2016 Staying safe online. Available at https://www.amazon.co.uk/Staying-Safe-Online-Louie-Stowell/dp/1409597814/ref=sr_1_1?dchild=1&keywords=Staying+safe+online&qid=1599747455&sr=8-1

Try a Information Technology Kahoot !

https://create.kahoot.it/v2/details/48bf0074-bc94-4d81-9f46-f6e3f2b3bd6d