THE BURGESS HILL ACADEMY

# HOME LEARNING PACK

# YEAR 7

*Believe in your best*

# CONTENTS


| | Page Number |
|---|---|
| How to use this pack | 3 |
| English | 4 |
| Maths Foundation | 32 |
| Maths Higher | 91 |
| Science | 168 |
| History | 176 |
| Geography | 183 |
| Personal development | 190 |
| MFL | 191 |
| Drama | 194 |
| Food Tech | 197 |
| IT | 200 |

## 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.

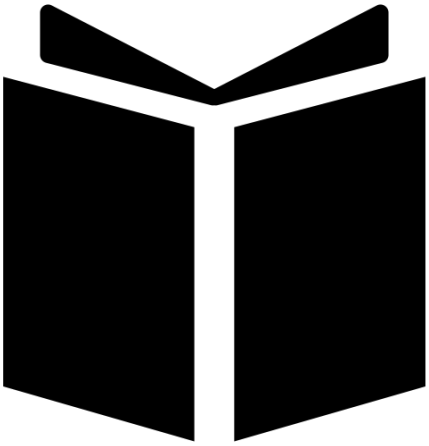
As a minimum you will a pen and some paper to complete these tasks. If you need these, please collect from the reception desk at the academy. For some of the mind-mapping tasks you might wish to use coloured pens or pencils but they are not essential. Some tasks may ask you to create packs of flashcards. 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 pages that follow

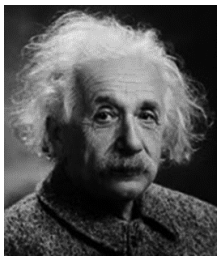


Year 7 – Heroes

Lesson 1: Heroes

Objective: to consider what makes a hero.

1. A. List as many different heroes as you can think of.
   B. Rank the heroes in these images from most heroic to least heroic.



   C. Write your own definition of what a hero is. You could use an example to help explain.

   D. What is the difference between a hero and a superhero?

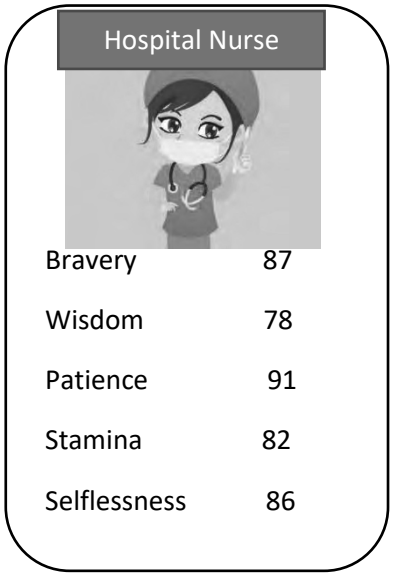
2. Read the opening of this article which introduces the topic of the article: everyday heroes.

## On The Existence of Heroes

It would be difficult to go through this world without believing in heroes. While every person wants to believe they are intelligent, or strong, or special, it is also comforting to know that there are people in our lives who are braver or humbler or kinder than the average person. Everybody has their own heroes, those individuals who encouraged them to try or guided them through failure, whether they are siblings, parents, coaches, or teachers. People can share heroes; a group can admire a particular person like a state can admire a sports team. Some people themselves are heroes, doing their work in anonymity as good Samaritans to make the world a little brighter. In trying times, looking ahead to a suddenly obscured future, America has grown smaller as communities have come together to help, to build, to act in order to rectify old wrongs and create a better tomorrow.

3. Answer these quick questions to secure your understanding.
   i. What three qualities does the writer say everybody wants to have?
   ii. Does the writer think most people believe in heroes?
   iii. List three types of people the writer believes can be a hero to someone.
   iv. What is "anonymity"?
   v. According to the writer, how do heroes improve the world?

4. This article goes on to explain how almost everybody can be considered a hero to someone.
   Your task now is to create 5 'Top Trumps' cards of your everyday heroes. Here is my example based on a friend of mine who is a nurse – she is a hero in my eyes!




Lesson 2: Vocabulary Choices

Objective: to understand the importance of vocabulary in presenting meaning.

1. Warm up by completing the following punctuation tasks revising the use of semi-colons.

Add the missing semi-colon to each of the following sentences:

a. I grabbed the book from the pile it was tattered and falling apart.
b. She stormed down the corridor everyone moved out of her way.
c. The mountain towered above us I could barely see the peak.
d. Andrew skipped happily he couldn't hide his excitement.
e. The rain hit the pavement with force it was a miserable day.

Add a second main clause after the semi-colon to each of the following sentences:

f. I bought a new pair of shoes;
g. Amy sprinted down the road;
h. The water was crystal clear;
i. The yard was covered in litter;
j. Angrily, he threw his bag down;

2. Let's think about the different meanings and effects of synonyms.

All of these words are synonyms for the word 'brave': fearless, heroic, daring, confident, courageous, adventurous and daring.

Each synonym can present a slightly different meaning.

*She was confident in her actions, she moved with precision.*

*She was fearless in her actions, she moved with precision.*

In my first sentence, we get a sense that the girl is very skilled and able. In the second sentence, we understand that the girl is brave in completing something dangerous.

Place the synonyms for 'brave' along a scale from most extreme to least extreme.

Least extreme Most extreme

Now do the same for these words and their synonyms:

Pulling – dragging, helping, moving, hauling and heaving.

Moments – seconds, instant, tick, jiffy, minute.

3. How can we use synonyms for dramatic effect? Let's experiment!

Original sentence: *A taxi driver acted "with courage and heroism" pulling a motorist from his overturned car in Grimsby, moments before the vehicle caught fire.*

Now, using words from your scales in task 2, re-write the sentence 3 times and explain the impact of the new vocabulary.

4. Now read the entire article. As you read, circle or note any words you think are 'weak' and could be more dramatic. I have underlined some to get you started.

**Taxi 'hero' rescues crash driver in Grimsby**

**A taxi driver acted "with courage and heroism" pulling a motorist from his overturned car in Grimsby, moments before the vehicle caught fire.**

The Vauxhall Zafira was on the A180 near the Pyewipe roundabout when it hit a lamppost and caught fire.

Humberside Fire and Rescue said passing cab driver David Gaunt acted selflessly in getting the driver out of the vehicle on Friday evening.

The driver, from Leeds, suffered minor injuries, Humberside Police said.

John Miller from Humberside Fire and Rescue Service said when the fire crews got to the scene it was "a fireball in the first lane of the carriageway".

Mr Miller said the driver of the car, who he identified as Benjamin Clarke, from Leeds, had been rescued in an act of "courage and heroism" by the taxi driver.

Mr Gaunt said the car driver had been lucky to have escaped alive because of the severity of the accident.

He said: "As I got to the car the gentleman had rolled it three or four times and bent it around a lamppost.

"There was smoke coming out of the front end and a little flicker of flames.

"The gentleman was trying to get out and I dragged him out

"I got him into the back of my taxi and wrapped him in a blanket to keep him warm while we waited for the emergency services.

"Then the car went up in flames, the front end was totally flattened, truthfully I don't know how the gentleman got out of there alive, if there had been a passenger in the car there's no way they would have survived."

Mr Gaunt said he did not consider his actions heroic.

He added: "You just don't think about these things, you just go ahead and do it."

5. Select words to replace the vocabulary you identified as 'weak' to make it sound more dramatic or thrilling.

   Challenge: can you replace a phrase with a dramatic simile or metaphor for dramatic effect?

Lesson 3: Language for Effect

**Objective: to analyse the writer's use of language.**

1. To warm up, identify the following in each sentence.

   Is the word underlined a noun or a verb?

   a. She would like to go for a walk.
   b. He likes to walk into town every morning.
   c. She asked me to point to my dog.

**Noun:** a person, place, thing or idea.

*I like going to the **park**.*

**Verb:** an action or state of being.

*I have to **park** my car somewhere.*

d. My pencil has a sharp point.
e. The swing at the park is broken.
f. I was told not to swing my bag anymore.

Is the word underlined an adjective or an adverb?

g. She kindly offered me a drink.
h. He always does his homework.
i. She has lovely hair.
j. His new car is very clean.

**Adjective:** a word that describes a noun.

*Her hair is **oily**.*

**Adverb:** a word that gives more information about a very or adjective.

**Fiercely**, he tossed the baton across. .

2. Imagine this: you are on a walk and your best friend falls down this mine shaft. You hear a huge splash as they fall into water at the bottom.

Write a few sentences (using punctuation accurately) explaining what you do.

3. Now, read this article to find out how a teacher dealt with this situation.

**Hero teacher jumps down 75ft mine to save boy, 3, by keeping his head above water for TWO HOURS (and nearly dies herself)**

A kindergarten teacher has been hailed a hero after jumping into a 75ft-deep mine to save the life of a three-year-old child. Ina Koenig emerged bruised, cold, wet and tearful from the chasm near Hanover, but rescued a little boy called Jannic who would have drowned had she not gone in after him. She neither knew how deep the hole was or if she could rescue him. But she jumped in after him in a split second after he vanished into the earth.

She had to fight for both their lives as they ended up in deep water in the flooded shaft at Osterwald.

For two hours, in the near freezing water, she kept the child's head above the surface while she battled to stay afloat. They clung to tree roots and bulges in the shaft that was just four and-a-half feet wide until firemen could eventually pull them free.

Rescuers said it was only the body heat of Jana that kept Jannic alive in the water. Colleagues of her's on the surface looking after the 39 other children from the St. Nicolai Kindergarten on a day out called the police and fire service.

The shaft was constructed to bring light into a coal mine that closed down years ago. But the wooden planks meant to seal it off from the workings deep underground had rotted. Hidden in a copse of trees, Jannic plunged straight down - followed by his teacher.

Fire chief Dirk Habenicht said: 'We had to bring in a crane and lower men down the shaft. We got the little boy into a belt first. He wasn't crying, just trembling a little. Then we got Ina into the belt and brought her up. Both were only slightly injured. The water was cold but it saved them; no water, and the fall would have killed them.'

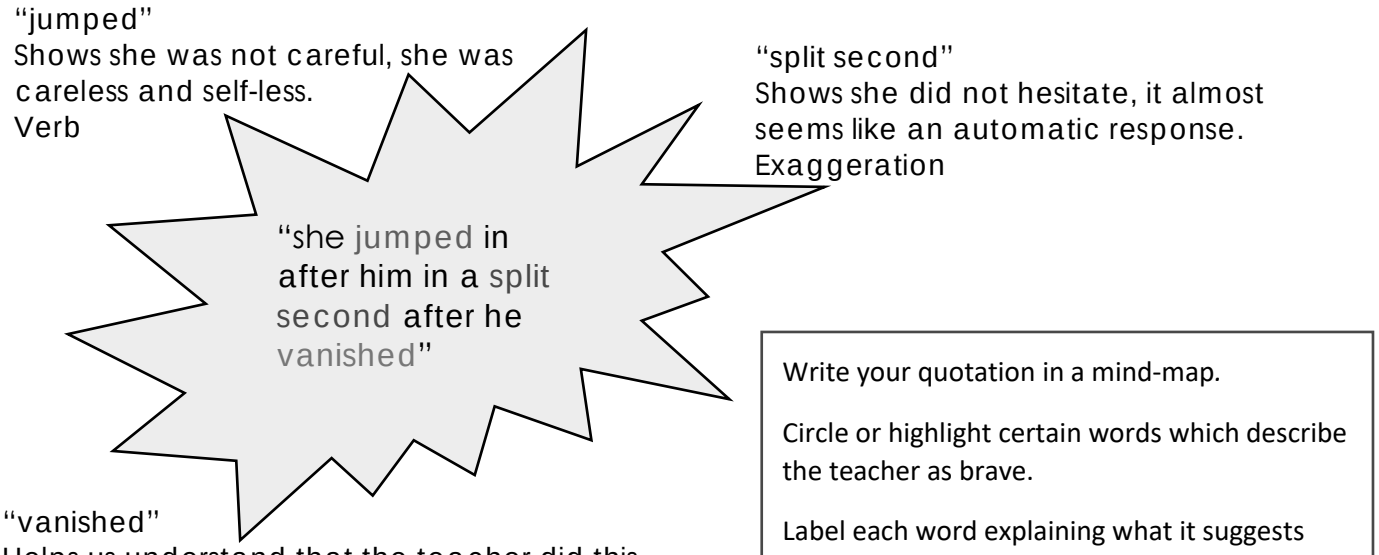
Both were taken to the Hamelin-Pyrmont Sana Clinic where mild hypothermia was diagnosed and Jannic had bruises to his skin. He is being kept in for observation for a week but she left the clinic after a check up. Jannic is also to undergo counselling for the massive emotional trauma he suffered in the fall.

The mine began operating in the middle ages and closed down 100 years ago. The local authority said it tried to fill in the shaft on numerous occasions but it was too deep. An inquiry is now underway as to why the rotting timber that covered its entrance was not replaced.

Her heroism has hit the front pages of newspapers across Germany and Chancellor Angela Merkel has sent her congratulations to the 37-year-old for her 'courage'. Ina is to receive a bravery award from the state of Lower Saxony for her actions and has also been recommended already for the Federal Cross of Merit - Germany's highest civilian award for bravery. Ina refused to give interviews to local media, insisting: 'I am not a hero. I did what any human being would do.'

4. Scan back through the article to find 4 quotations describing the teacher as being brave.

5. Now, 'explode' your quotations to answer this question – how does the writer use language to describe the teacher as brave? Here is my example:




Write your quotation in a mind-map.

Circle or highlight certain words which describe the teacher as brave.

Label each word explaining what it suggests about the teacher

Name the language technique e.g. verb, adjective, simile, adverb etc.

Lesson 4: Manipulating Language

Objective: to select vocabulary to create a particular effect.

1. Copy our key words for this lesson –

Effect: the result or outcome of an action. For example, when I watched a horror film I was troubled for a long time with nightmares. The effect was being troubled.

Semantic field: vocabulary connected by a similarity. For example a paragraph may have a semantic field of suffering if it was about a natural disaster.

2. Sort these words into groups and title them with a specific semantic field.

| | | | |
|---|---|---|---|
| Silky | Field | Dabbed | Enchanting |
| Tractor | Sheen | Drizzled | Heaved |
| Flipped | Radiant | Dazzling | Compacted |
| Matte | Sizzled | Ploughed | Succulent |

3. The purpose of this lesson is to use vocabulary to achieve a specific effect.

Can you identify the intended effects of these sentences?

| Sentence | Intended effect |
|---|---|
| Victor should not be here, not now! | *Curious and concerned.* |
| Can you really afford to ignore the facts? | |
| But of course, she just had to take the lowest Jenga piece: that's the thing about my sister, she doesn't see the point in delaying the inevitable. | |
| When there's no more room in hell, the dead will walk the earth. | |

4. Now you have 2 options for your own writing. In whichever task you pick, you must aim to use a specific semantic field. You should plan first.

Option 1

Task: write 2 paragraphs describing a visit to a hairdressers.

Your aim is to make the reader feel your worry and stress because you think the hairdresser is dying your hair the wrong colour.

Challenge: use the following words – frog, tape, flutter and mashed.

Option 2

Task: write 2 paragraphs describing a visit to a skate park.

Your aim is to make the reader feel your thrill and excitement as you try a new trick.

Challenge: use the following words – thrashed, ivory, linear and tangy.

Lesson 5: Using Imagery

Objective: to be confident in using imagery in a description.

1. What is being used in each sentence: simile, metaphor, personification or sensory language?
    a. Glaring down at us, the windows of the house warned us of the dangers inside.
    b. The chicken was delicious: smoky and sweet at the same time!
    c. As gentle as a dove's feather landing on a calm lake, she her hand away.
    d. Tom's eyes were ice as he stared at her.
    e. Writing on his clipboard with his fingers quivering in the icy wind, he noted the texture of the rock for his Geography report: chalky.
    f. Kissing my cheek, the balmy wind told us summer had arrived.

Challenge: can you identify the intended effect of each sentence. For example, the first one is supposed to make readers feel scared and afraid for the characters.

2. Re-write these sentences to use imagery (simile, metaphor, personification or sensory language).
    i. She pulled at her new, sore ear piercing.
    ii. I cautiously opened the door to the next room.
    iii. Pulling the curtain closed, I noticed the same figure standing on the corner of the road.
    iv. "Right, tonight folks we have a great dish on the menu: mushroom risotto!"
3. Your main task in this lesson is to use imagery with confidence and to try and make it read natural and not forced.
   Using the topic of the week (everyday heroes) you are going to write a description of one of these heroes.
   Pick one image and write at least 2 paragraphs describing them.

Captain Tom Moore

A firefighter

4. Pick out three sentences that use imagery in your writing. 'Explode' these quotations for this question: how have you used imagery to describe an everyday hero?
   Support: look back to page 6 on how to do this.

Lesson 1: Summarising

Objective: to understand what it means to summarise.

1. Copy the definition of our key word.

Summary: a brief outline of the main points or details.

Inference: an idea based on evidence.

Top tip: in English lessons, whenever we ask you to 'summarise' something, as well as noting the main ideas and events of the text you need to add a personal judgment or inference.

2. Making inferences.

What could this film be about based only on the movie poster?

Answer in full sentences.

Consider:

- What is happing in the image
- Position of particular characters
- Setting
- Colours
- Font of lettering


3. Based on what you have looked at (the film poster), using full sentences, review whether you believe this is a successful or poor film. You need to justify your opinions by referring to details from the poster or trailer.

4. Read the opening of this film review. If you want to read all of it you can find it here: https://www.cinemablend.com/reviews/2475677/spider-man-far-from-home-review

# Spider-Man: Far From Home Review

## It does leave much to be desired in the surprise department, but what it lacks in effective twists it mostly makes up for with impressive character drama, and enthralling, exciting, energetic entertainment.

Hollywood studios are now spending millions upon millions of dollars supporting visions that previously only existed in our collective imaginations – inspired by the images and words on the page. What we used to wish for is now not just anticipated, but expected; and what used to be niche is now popular and ubiquitous.

Jon Watts' Spider-Man: Far From Home is a perfect example of this phenomenon. Twenty-five years ago nobody would have spent $160 million on a movie about Spider-Man seeing his summer vacation interrupted by adventures featuring a mystery man wearing green and purple costume and a crystal ball for a head, but now it's a relatively standard July blockbuster – and a pretty damn good one at that.

It's not the zenith of web-slinger movies, as particular story elements and plot developments hold it back from real greatness, but its positive qualities certainly outweigh its faults. Picking up from where Spider-Man: Homecoming left off, once again we are presented with a cast of characters charged with tremendous charm and charisma playing out a narrative that is effortlessly entertaining and filled with wonderful, memorable set pieces.

The first feature to show audiences the Marvel Cinematic Universe in the aftermath of Avengers: Endgame, Spider-Man: Far From Home finds Peter Parker very much struggling without his mentor, Tony Stark a.k.a. Iron Man. As burdened as he is naturally because of his "with great power comes great responsibility" philosophy, societal pressure is also mounting to see him step up and become the world's new #1 superhero – and even with the love and support, respectively, of Aunt May and his primary Avengers contact, Happy Hogan, it's a bit more than the teenage hero can handle. Add in the craziness of having missed the last five years on Earth because of what's referred to as The Blip, and what he craves more than anything is a vacation.

5. List 5 details you learn about the film based on this review.

Challenge: can you find short, concise evidence to match your findings?

6. We are going to summarise the information we learn about this new Spider-Man film.

When we summarise in English lessons we use the acronym SET. Copy down what it means:

Statement about the text

Evidence

Thought of your own

This is my example response. Notice the different parts of the SET paragraph.

In this film there seems to be an unusual, mysterious character. We know this because the writer describes a "man wearing green and purple costume and a crystal ball for a head". I think this character will probably be some sort of superhero because he's described to have a costume and superheroes often wear costumes for a disguise.

Now it's your turn. Write two paragraphs summarising what you learn about the film from the review. Use the SET structure.

Lesson 2: Ex-Heroes

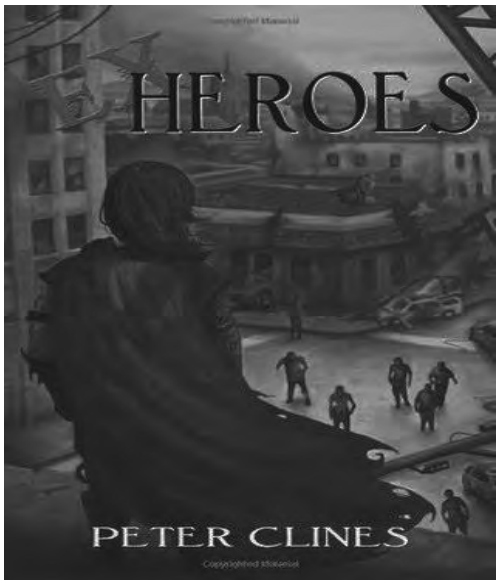
Objective: to explore implied meanings.

1. George Bailey is a fictional character in a 1946 film called 'It's a Wonderful Life'. The character is a building and loan banker who sacrifices his dreams in order to help his community, to the point where he feels life has passed him by.

   a. How could George Bailey be considered as a hero in his fictional world?
   b. How does the text make readers empathise with George Bailey?

Challenge: how can you interpret the name of the film as being ironic? Explain referring to key details from the text.

2. The story we are going to examine today is called 'Ex-Heroes'. Using the title of the novel and this book cover, make 3 predictions or ideas you have about the story.
   - 
   - 
   - 




3. Now you are going to read an extract from the beginning of the novel. At each break, answer the questions to help you understand what is happening.

Extract from Ex-Heroes by Peter Clines

THEY SAY YOU never forget your first time.

It'd been about three months since the Incident at the lab. "Incident" was how they kept referring to it in the news and in the therapy sessions, and the word had been beaten into

my head by constant use. There'd been a lot of publicity around me at first as the sole survivor of the explosion, but the news quickly shifted to focus on the twelve people who had died and the scandal of poor chemical storage. Of course, who could blame the University for not designing their building to resist a meteor strike?

Of the twelve victims, seven took a few hours to die. One took a whole day. There was a lot in the papers regarding the wave of chemicals we'd been exposed to. Things that could poison you, twist your body chemistry, or taint your blood. Even corrupt your DNA, according to some people. I also read lots of articles about that meteorite and the odd wave-lengths of electromagnetic energy it threw off. Lots of stuff on Wired news about it for a few weeks. I think NASA ended up with it, farmed a ton of work out to MIT, and then it just sort of dropped off the radar.

Questions

a) Who kept referring to the event as an 'incident'?
b) What did the meteor strike crash into?
c) What could the chemicals do to someone?

I was in quarantine for a month. Three more weeks passed and I faded back into obscurity, too. Well, George Bailey did, anyway.

Yes, George Bailey. My name's been my curse my entire life. To this day I've got no idea why my parents were so cruel. And, yes, I own the deluxe DVD edition and I prefer to watch it in the original black and white.

Anyway, it'd been three months when I noticed the strength. That was first. Physical therapy after the explosion had felt kind of easy and weights seemed a little lighter at the gym, but nothing amazing. One day I was running to beat the street- sweepers (if you live in the Korea-town area like me, street- sweeping rules your life) and somehow managed a fumble- drop- kick that left my keys under the car. I was stretching for them when my shoulder pushed against the frame and shoved my Hyundai a foot up onto the sidewalk.

Questions

d) How long was George isolated for?
e) What side-effect did the incident have on George?
f) Which body part did George push the car up with?

Odd, yes, but it's amazing what you can justify when parking enforcement is closing in on you. It wasn't until a few days later, back at work, that something happened I couldn't ignore. I got angry, lost my temper at a dumpster with a stuck lid, and kicked it through the side of the applied physics building. By the time a crowd gathered and security showed up, people already assumed some drunk had slammed it with his car.

Even that I probably could've rationalised somehow, but a week later I was taking a shower and had a rasp in my throat. One of those little tickles that're a bit too coarse, like you'd hiccupped a bit of stomach acid but it didn't quite make it to your mouth. I hacked to shake it loose and belched a cloud of fire a little bigger than a basketball. It melted part of the shower curtain.

4. Sort these statements into 'explicit' and 'implicit' along the scale.

Questions

g) Which building did George kick a 'dumpster' (bin) through?
h) What was George doing when he had a rasp in his throat?
i) When George breathed fire, what did he melt?

Explicit – obviously clear findings.
Implicit – a suggested idea but not exactly said.

Implicit

12 people died in the incident.

George is troubled by the 'incident'.

George is sceptical of DNA corruption.

George feels he has lost his former self.

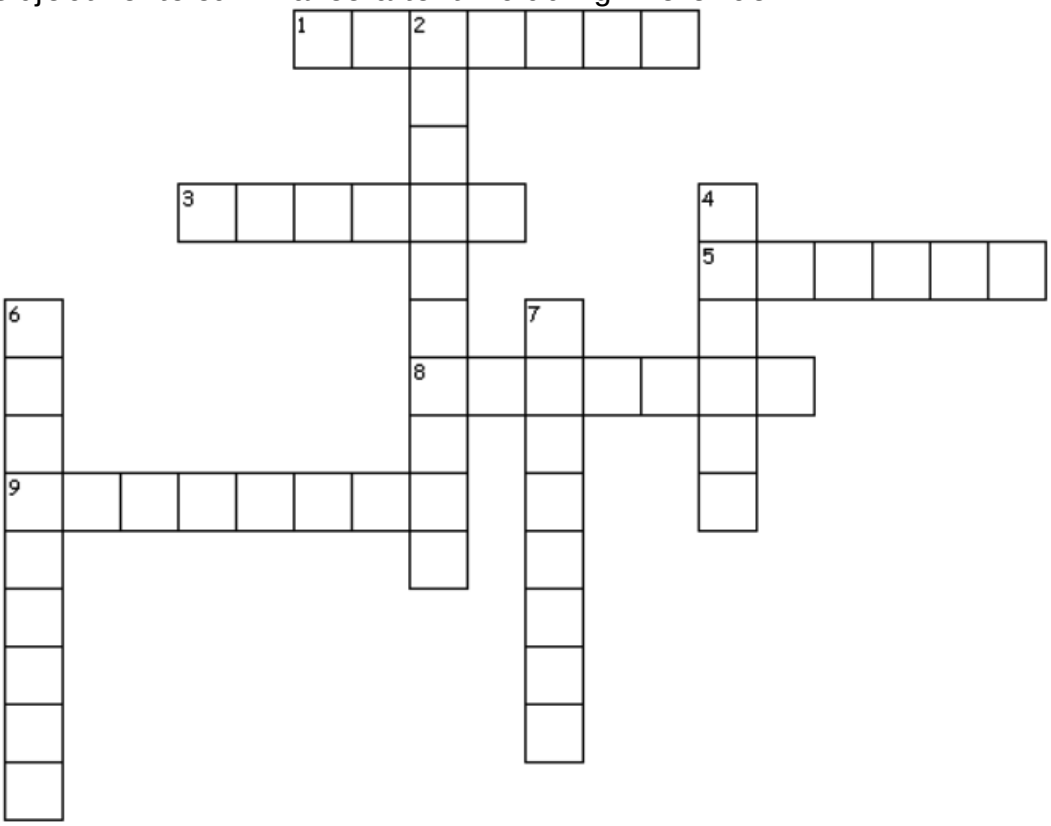
Chemicals were stored poorly at the university.

Challenge: add 3 more of your own.

Explicit

Lesson 3: Ex-Heroes

Objective: to summarise a text including inference.



1. Revise our key terms and the story by completing this crossword.

Across
1. The type of car the main character owns.
3. The number of victims of the meteor strike.
5. The outcome of an action.
8. A brief outline of the main points or details.
9. Obviously clear findings.

Down
2. The place where the meteor strike crashed.
4. The name of the boy in Ex-Heroes.
6. An idea based on evidence.
7. A suggested idea but not exactly said.

2. Making inferences

Inference: an idea based on evidence.

Using these quotations I have picked out from the extract, explain the inferences you can make. I have given you an example in blue.

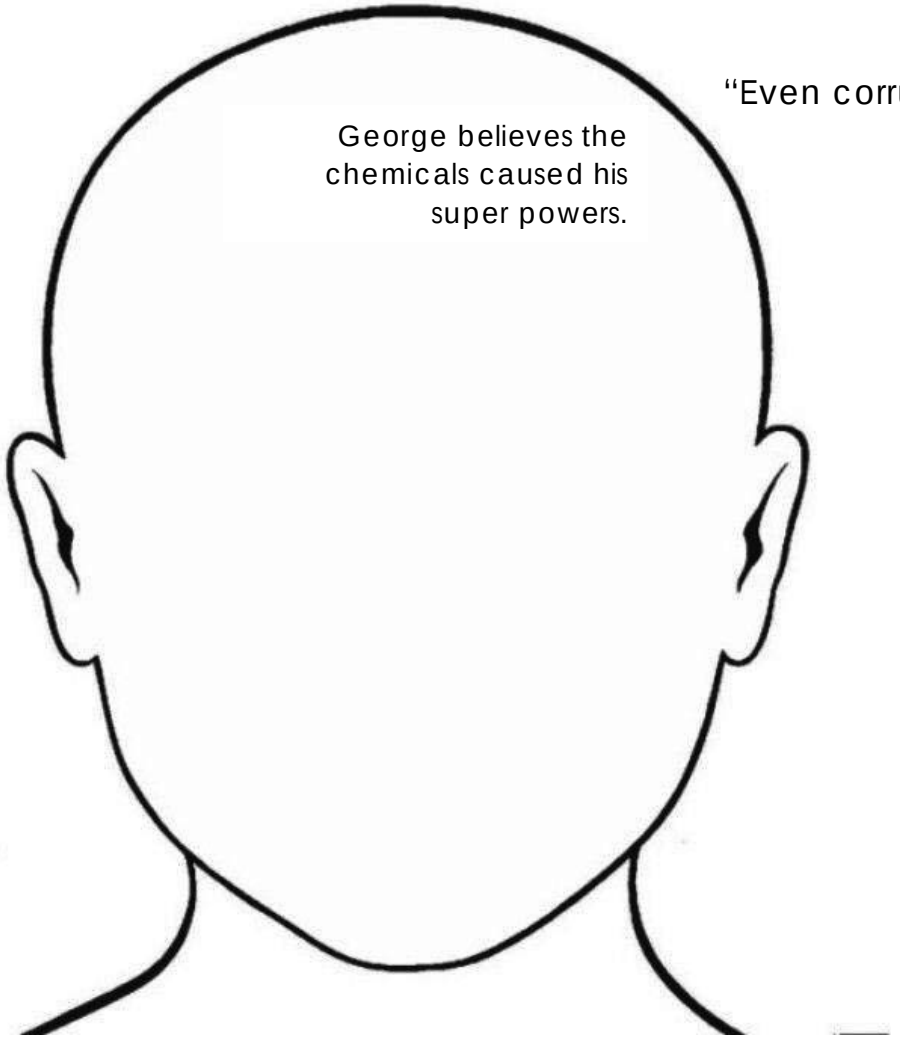
a) ""Incident" was how they kept referring to it in the news and in the therapy sessions" *George does not believe this was an incident because he places the word in quotation marks suggesting he doesn't want us the reader to think that's how he would describe it. Perhaps he believes the event was deliberate.*
b) "the scandal of poor chemical storage"

c) "Even corrupt your DNA, according to some people."

d) "Even that I probably could've rationalised somehow"

3. Identify key ideas which relate to the narrator's superpowers.

On the inside of the face write your inferences about his character,
Around the outside match quotations to the inferences as evidence.




4. Using the SET structure (look at page 2 for a reminder), summarise what we learn about George Bailey in three paragraphs.

Lesson 4: Maximum Ride

Objective: to understand the **narrator's perspective.**

1. Read the blurb of this book, then list 10 details you learn about the narrator and story.

WELCOME TO MY NIGHTMARE Do not put this book down. I'm dead serious - your life could depend on it. I'm risking everything by telling you - but you need to know.

STRAP YOURSELF IN for the thrill ride you'll want to take again and again! From Death Valley, California, to the bowels of the New York City subway system, you're about to take off on a heart-stopping adventure that will blow you away...

YOUR FAITHFUL COMPANIONS: Max, Fang, Iggy, Nudge, the Gasman and Angel. Six kids who are pretty normal in most ways - except that they're 98% human, 2% bird. They grew up in a lab, living like rats in cages, but now they're free. Aside, of course, from the fact that they're prime prey for Erasers - wicked wolf-like creatures with a taste for flying humans.

THE MISSIONS: Rescue Angel from malicious mutants. Infiltrate a secret facility to track down the flock's missing parents. Scavenge for sustenance. Get revenge on an evil traitor. And save the world. If there's time.


2. Using the extracts, answer the questions which focus on the narrator's perspective.

Okay. I'm Max. I'm fourteen. I live with my family, who are five kids not related to me by blood, but still totally my family.

We're—well, we're kind of amazing. Not to sound too full of myself, but we're like nothing you've ever seen before.

Basically, we're pretty cool, nice, smart—but not "average" in any way. The six of us—me, Fang, Iggy, Nudge, the Gasman, and Angel—were made on purpose, by the sickest, most horrible "scientists" you could possibly imagine. They created us as an experiment. An experiment where we ended up only 98 percent human. That other 2 percent has had a big impact, let me tell you.

We grew up in a science lab /prison called the School, in cages, like lab rats. It's pretty amazing we can think or speak at all. But we can—and so much more.

There was one other School experiment that made it past infancy. Part human, part wolf—all predator: They're called Erasers. They're tough, smart, and hard to control. They look human, but when they want to, they are capable of morphing into wolf men, complete with fur, fangs, and claws. The School uses them as guards, police—and executioners.

To them, we're six moving targets—prey smart enough to be a fun challenge. Basically, they want to rip our throats out. And make sure the world never finds out about us.

But I'm not lying down just yet. I'm telling *you,* right?

This story could be about you—or your children. If not today, then soon. So please, please take this seriously. I'm risking everything that matters by telling you—*but you need to know.*

Keep reading—don't let anyone stop you.

—Max. And my family: Fang, Iggy, Nudge, the Gasman, and Angel.

Welcome to our nightmare.

Questions:

a) How can we tell that Max thinks they are impressive?
b) Who are the enemies of the family?

The funny thing about facing imminent death is that it really snaps everything else into perspective. Take right now, for instance.

*Run! Come on, run! You know you can do it.*

I gulped deep lungfuls of air. My brain was on hyper-drive; I was racing for my life. My one goal was to escape. Nothing else mattered.

My arms being scratched to ribbons by a briar I'd run through? No biggie.

My bare feet hitting every sharp rock, rough root, pointed stick? Not a problem.

My lungs aching for air? I could deal.

As long as I could put as much distance as possible between me and the Erasers.

Yeah, Erasers. Mutants: half-men, half-wolves, usually armed, always bloodthirsty. Right now they were after me.

See? That snaps everything into perspective.

*Run. You're faster than they are. You can outrun anyone.*

I'd never been this far from the School before. I was totally lost. Still, my arms pumped by my sides, my feet crashed through the underbrush, my eyes scanned ahead anxiously through the half-light. I could outrun them. I could find a clearing with enough space for me to—

*Oh, no. Oh, no.* The unearthly baying of bloodhounds on the scent wailed through the trees, and I felt sick. I could outrun men—all of us could, even Angel, and she's only six. But none of us could outrun a big dog.

*Dogs, dogs, go away, let me live another day.*

They were getting closer. Dim light filtered in through the woods in front of me—a clearing? *Please, please* . . . a clearing could save me.

I burst through the trees, chest heaving, a thin sheen of cold sweat on my skin.

*Yes!*

Questions:

c) What impression do you get of Max when they list the problems they are not bothered by?

d) What is Max afraid of?

*No—oh, no!*

I skidded to a halt, my arms waving, my feet backpedaling in the rocky dirt.

It wasn't a clearing. In front of me was a *cliff,* a sheer face of rock that dropped to an unseeable floor hundreds of feet below.

In back of me were woods filled with drooling bloodhounds and psycho Erasers with guns.

Both options stank.

The dogs were yelping excitedly—they'd found their prey: *moi.*

I looked over the deadly drop.

There was no choice, really. If you were me, you'd have done the same thing.

I closed my eyes, held out my arms . . . and let myself fall over the edge of the cliff.

The Erasers screamed angrily, the dogs barked hysterically, and then all I could hear was the sound of air rushing past me.

It was so dang peaceful, for a second. I smiled.

Then, taking a deep breath, I unfurled my wings as hard and fast as I could.

Thirteen feet across, pale tan with white streaks and some freckly looking brown spots, they caught the air, and I was suddenly yanked upward, hard, as if a parachute had just opened. *Yow!*

*Note to self: No sudden unfurling.*

Wincing, I pushed downward with all my strength, then pulled my wings up, then pushed downward again.

Oh, my god, I *was flying*—just like I'd always dreamed.

The cliff floor, draped in shadow, receded beneath me. I laughed and surged upward, feeling the pull of my muscles, the air whistling through my secondary feathers, the breeze drying the sweat on my face.

I soared up past the cliff edge, past the startled hounds and the furious Erasers.

One of them, hairy-faced, fangs dripping, raised his gun. A red dot of light appeared on my torn nightgown. *Not today, you jerk,* I thought, veering sharply west so the sun would be in his hate-crazed eyes.

*I'm not going to die today.*

Questions:

e) What does Max do to escape from the Erasers?
f) When Max suddenly unfurls their wings, how does it affect Max?
g) Is this the first time Max has flown?

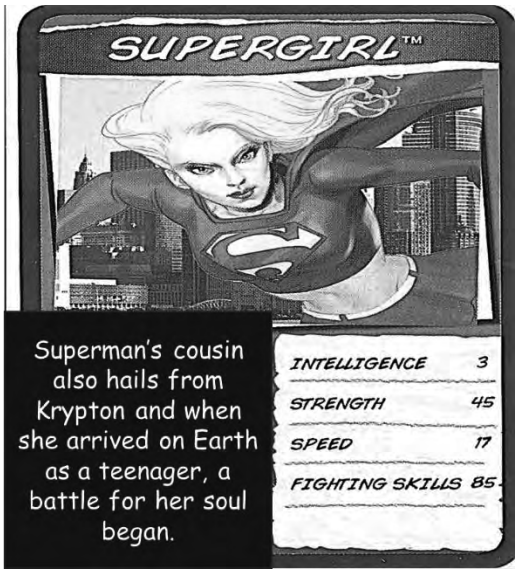
3. Which of these words would you use to describe Max?
   Challenge: identify a short, concise quotation as evidence.

   Arrogant
   Disheartened
   Courageous
   Stressed
   Skilled
   Intelligent
   Confident

Lesson 5: Summarising Assessment

Objective: to summarise similarities and differences.

1. In two short paragraphs summarise the differences between Super girl and Wonder Woman using these Top Trump cards.





2. The narrators' experiences with their powers are similar.
   Using details from both sources complete this table to prepare your ideas.

| George Bailey's experience with powers | Evidence | Inference |
|---|---|---|
| Unexpected | "my shoulder pushed against the frame and shoved by Hyundai a foot up into the sidewalk" | |
| Powers are unnatural | | |
| Max's experience with powers | Evidence | Inference |
| Unexpected | "Oh my god, I was flying" | |
| Powers are unnatural | | |

3. Assessment task

**The narrators' experiences with their powers are similar.**

Using details from both sources, summarise the similarities.

You will need to structure your paragraphs using SET, however because you are looking at similarities, you will structure in this way:

Statement about the first text

Evidence

Thought of your own

Comparative connective [Likewise, Also, Similarly]

Statement about the second text

Evidence

Thought of your own

**Year 8 – Week 3 – Heroes**

**Lesson 1: Designing a Hero**

**Objective: to construct a hero with a backstory.**

1. In the two weeks of this term you have explored two different types of hero: every day and super.
   Explain the differences between everyday heroes and superheroes using full sentences.

2. This week you are going to craft and describe a hero of your own. Today, you will design your hero and make them believable.

A heroes' experience often inspires and motivates them to do good in society. Read the following two examples and note down what inspires them.

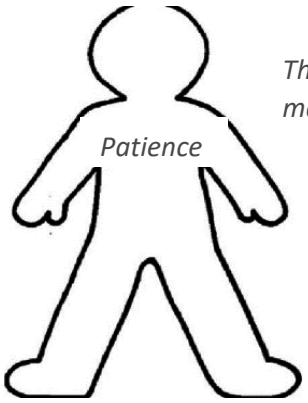
b. Batman originated from an incident in Bruce's childhood; after witnessing the murder of his parents Dr. Thomas Wayne and Martha Wayne, he swore vengeance against criminals, an oath tempered by a sense of justice. Bruce trains himself physically and intellectually and crafts a bat-inspired persona to fight crime.

a. Dr Collins grew up caring for her father as he battled a multitude of illnesses. At the time, his father's doctors failed to identify and treat a deadly infection attacking his immune system. After seeing her father suffer for so long, she pledged to work hard to ensure patients are cared for properly and given the attention they deserve.

3. First, you need to decide what type of hero you are designing: every day or super? Make a note of this first.
   Now, write a sentence to explain how they are a hero (what do they do to help others and society?).
   Finally, like my examples above, summarise their backstory explaining what motivates them (try to make this believable and not complex).

4. Draw a simple outline of your superhero on a sheet of paper (or on a program like 'paint' if you are using a computer).
   On the inside of the outline, list the qualities they have.
   On the outside, briefly describe how they have demonstrated each quality in the past.

My example




*They spent 20 minutes resuscitating a drowned man while waiting for an ambulance.*

**Lesson 2: Planning a Description**
**Objective: to plan a well structured description.**

1. It is important to plan a descriptive piece before writing. Explain why in full sentences.

2. When writing to describe, we should try to include the following:

a) An engaging hook to pull the reader in.
b) Varied sentence openers.
c) Sensory imagery.
Continue the list
d)
e)
f)
g)
h)

3. In the fourth lesson of this week you will be writing your description. Today you will plan the event your hero finds themselves in.

Make a list or mind-map of the ideas you have: what situation does your hero find themselves in?

Circle or highlight the best idea you have – perhaps ask someone at home for their opinion!

This will be the 'event' in your description.

4. Using the SCENE structure (you have used this twice now at home!), plan your description.
Challenge: try to include a reference to your backstory.
Here is my example:

S- Setting It's a blissful day on Tankerton beachfront. It's spring and the sea birds are joyfully chirping. Thin clouds protect us from the glaring sun. The gentle waves lull us to a sleepy state.

C- Characters (narrator is Dr Collins) I am here with my two year old son. I remember my dad in the colour of my son's eyes and the frizzy texture of his hair.

E- Event A teenager, running, trips over the nearest groyne smashing her face into a littered old barbeque. I run over to help her and the metal structures of the grille are embedded into her cheek.

N- Narrow focus Look back to son and describe the worry on his face. Crinkled forehead and wide, glossed eyes. Lips pursed into an O shape, ready to cry.

E- Exciting Ending The injured girl collapses in shock and pain just as my son squeals out for attention.

Lesson 3: Technical Variety

Objective: to revise and prepare varied sentences and punctuation.

1. One way to remember to use varied sentence openers is the acronym ISPACE

I-ing words (usually verbs to show action happening)
S- similes (like or as)
P- prepositions / pronouns
A- adverbs / adjectives
C- connectives (especially of time)
E- ed words (usually actions in the past tense)

Using ISPACE to vary your sentence openers, warm up by describing this scene (the birds are starlings).


2. Punctuation – colons, semi-colons and brackets.

Complete the tasks to revise the use of these three pieces of punctuation.

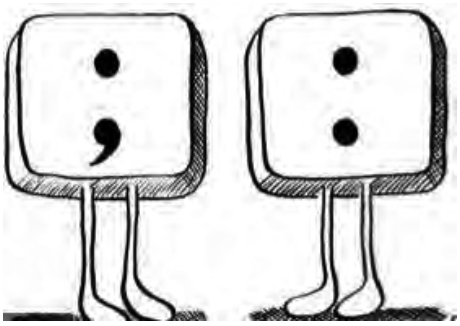
Each of these sentences is missing a pair of brackets. Add brackets around the correct words in each sentence.

For example: Mr Smith (my neighbour) was mowing his lawn.

a. I despise vegetables don't tell my mum.
b. It costs £185 per child 7-11 years.
c. Sprint a verb means to run quickly.
d. I saw Mr Richardson my mentor shopping today.

Add a colon or semicolon to complete each sentence.

Semi-colon Colon



For example: They were missing the most important thing: a bucket.

e. Here's what you need to bring a towel, sunglasses and some goggles.
f. The shop sold mints as big as fists sweets that fizzed; and dark liquorice balls.
g. Roberto knew what was about to happen he was going to be sick.
h. The referee sent the footballer off Marcus visibly winced as he passed.

3. Sentence lengths.

There are three commonly used sentences: simple, compound and complex.

Simple sentence: a complete main clause with a subject and a verb.

Compound: two complete main clauses combined with a connective or semi-colon.

Complex: at least one main clause and one subordinate clause (does not make full sense on its own, it needs the main clause to make sense).

These different sentences can be used for different effects. Complete this table which uses sentences from the extracts you explored last week.

| Sentence | Sentence type | Effect |
|---|---|---|
| "There'd been a lot of publicity around me at first as the sole survivor of the explosion, but the news quickly shifted to focus on the twelve people who had died." | *Compound* | |
| "Nothing else mattered." | *Simple* | |
| "Even corrupt your DNA, according to some people." | *Complex* | *Adds additional information to reveal the narrator's opinion of the topic.* |
| "They were getting closer." | | |
| "In back of me the woods were filled with drooling bloodhounds and psycho Erasers with guns." | | |

4. Return to your plan from last lesson.
   Identify 4 moments where you plan to use a sentence length for an effect.
   My example: *I will use complex sentences when I narrow the focus and describe the narrator's son's face to include lots of detail and show the focus of the mother on her son.*

## Lesson 4: Writing to Describe

Objective: to produce an engaging description.

For this lesson you have one task: Describe your hero in a situation that demonstrates one of their heroic qualities.

Using your plan, write 5 paragraphs for your description. This should be at least one page of writing.

Lesson 5: Editing for Success

Objective: to edit my writing for clarity and effect.

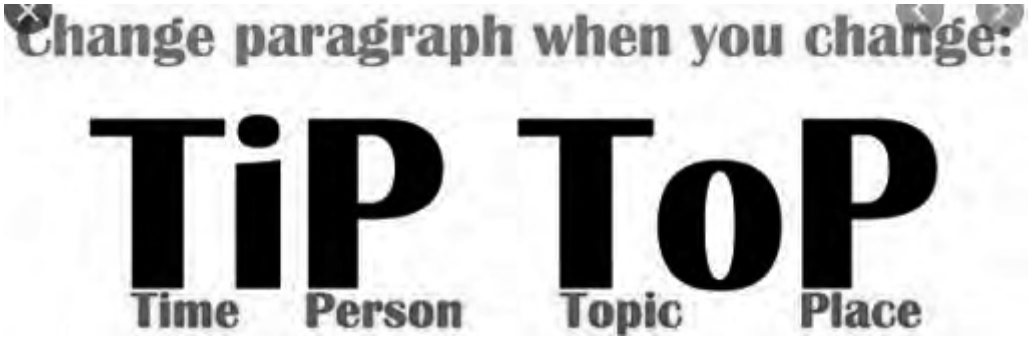
1. Warm up

This passage has no punctuation. Rewrite with the correct punctuation. It has 10 missing punctuation marks.

buster was beaming at him and although he was angry the boy found himself reluctant to shout at the puppy with his glossy fur wet little nose and floppy ears you are so troublesome he muttered

2. Today you will review and edit your writing. I will direct you to do this step-by-step focusing on three skills: language, structure and punctuation. Show your changes in another colour.

   First, have you paragraphed?
   You should have started a new paragraph for each part of the SCENE structure. Check you did this. Then, using our handy reminder, check that you do not require any further paragraph breaks.




3. Vocabulary choices
4. In each paragraph, identify 3 words that you feel are 'weak'. Replace those words with a more effective choice. Show your changes in another colour.

You could use this online thesaurus to help: https://www.thesaurus.com/

5. Punctuation

Hopefully you remembered to use basic punctuation (capital letters, commas, apostrophes and full stops). Let's see if you can change your sentences to include another 3 different pieces of punctuation. Show your additions in another colour.

Here is a reminder of the punctuation you may include:

; ( ) … ? ! "" :

6. Sentence openers.

Did you remember to vary your sentence openers?

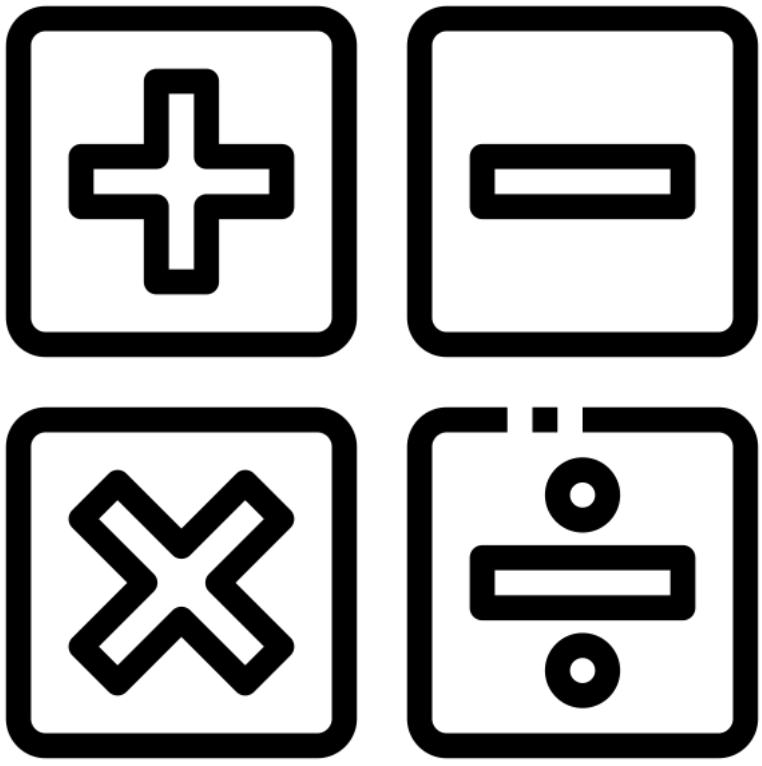
Use this handy acronym to change 3 sentences (you will need to re-write the entire sentence so it makes sense). Show your changes in another colour.

I-ing words (usually verbs to show action happening)
S- similes (like or as)
P- prepositions / pronouns
A- adverbs / adjectives
C- connectives (especially of time)
E- ed words (usually actions in the past tense)

**Amazing! You've** crafted an impressive, varied piece of writing. Why not share this with someone at home or call a relative or friend and read it to them?!

**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

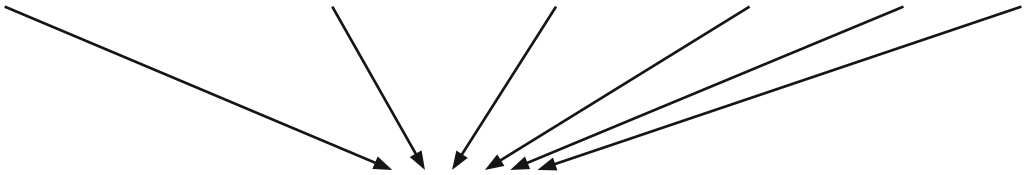
   Continue the sequence:

   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 < _____

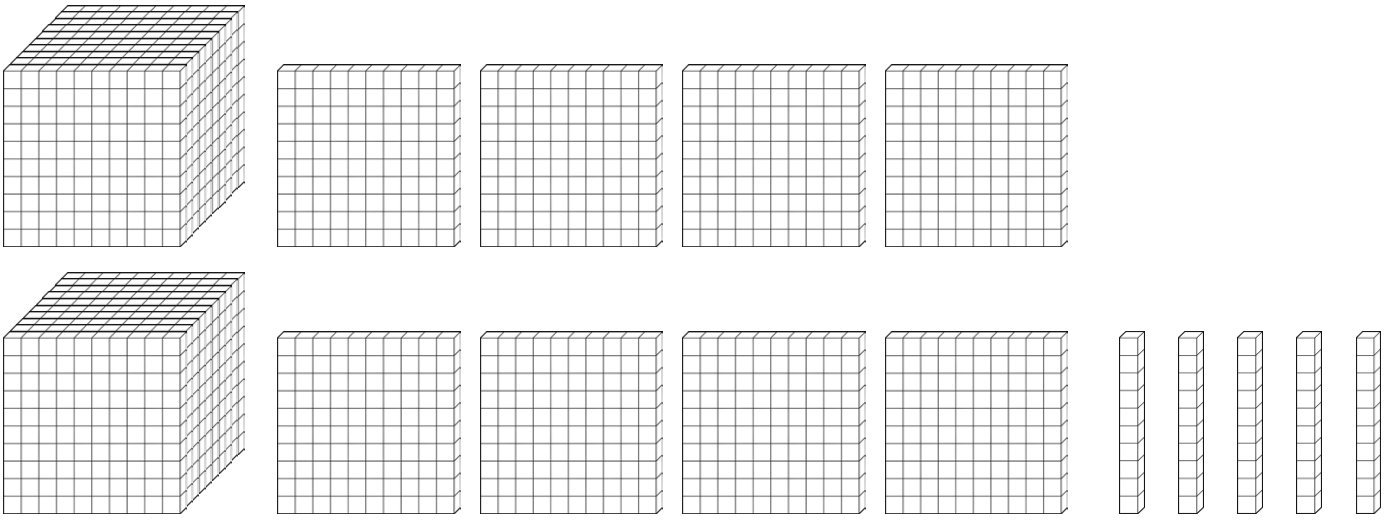
6. Order the following numbers from largest to smallest:

   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

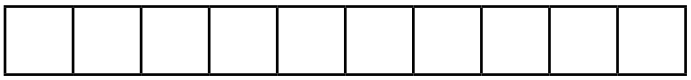
28. Jenna has 2 t-shirts and 4 pairs of shorts. How many different combinations of the t-shirts and shorts does Jenna have? _____

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

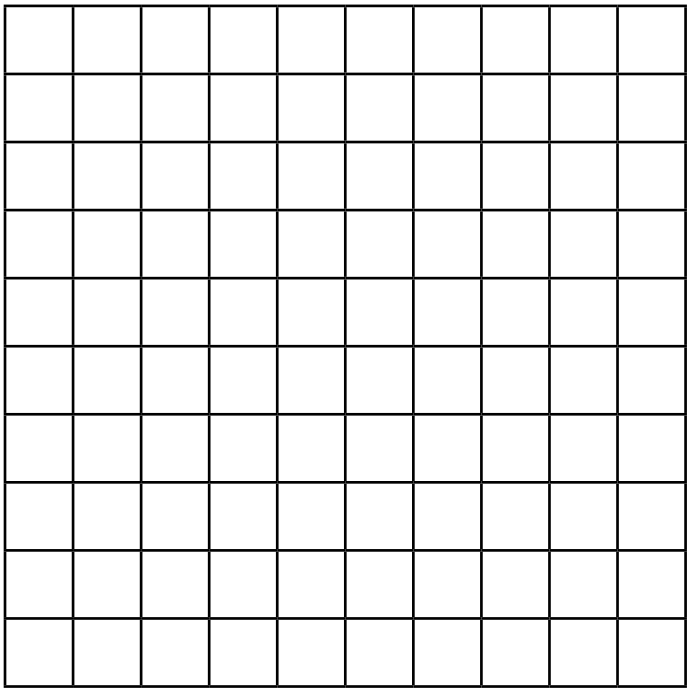
_____

# Fractions

30. Shade to show 7/10:

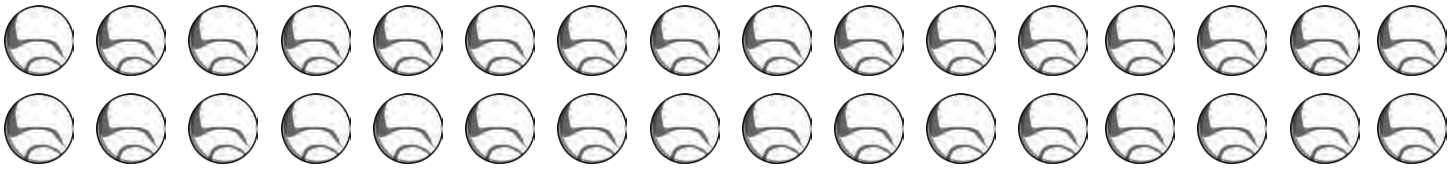


Shade to show 46/100:



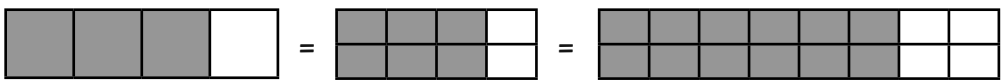
## Fraction of a Set of Marbles

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

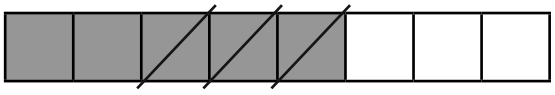
33. Write 3 fractions that are equivalent to $\frac{1}{3}$ _____,_____,_____

## 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

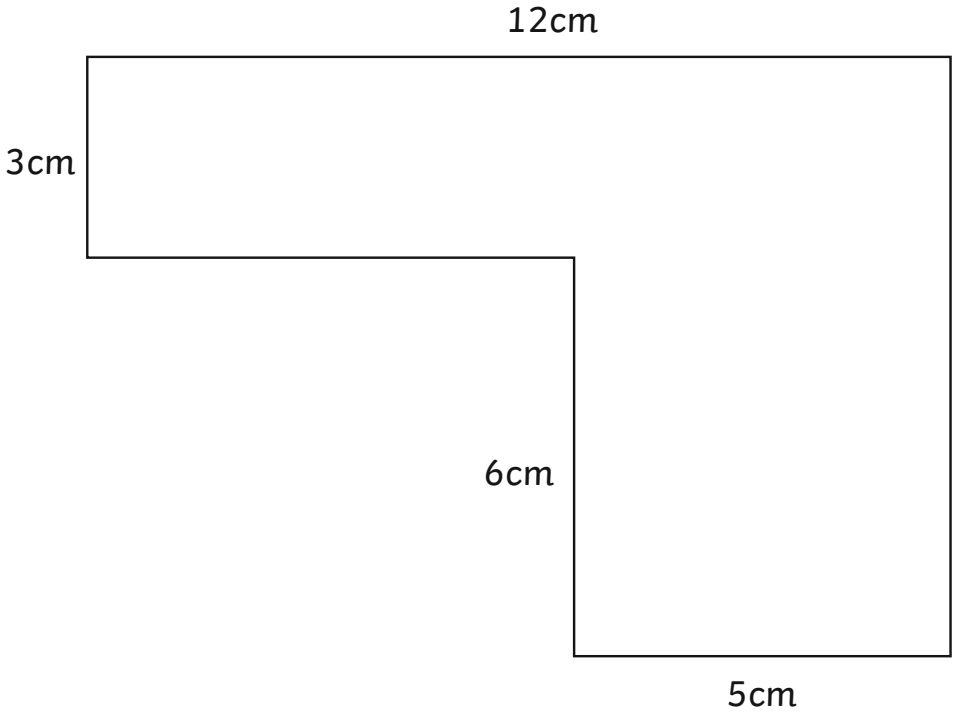
1 minute = _____seconds

## Perimeter

51. Calculate the perimeter:


**Perimeter = _____cm.**

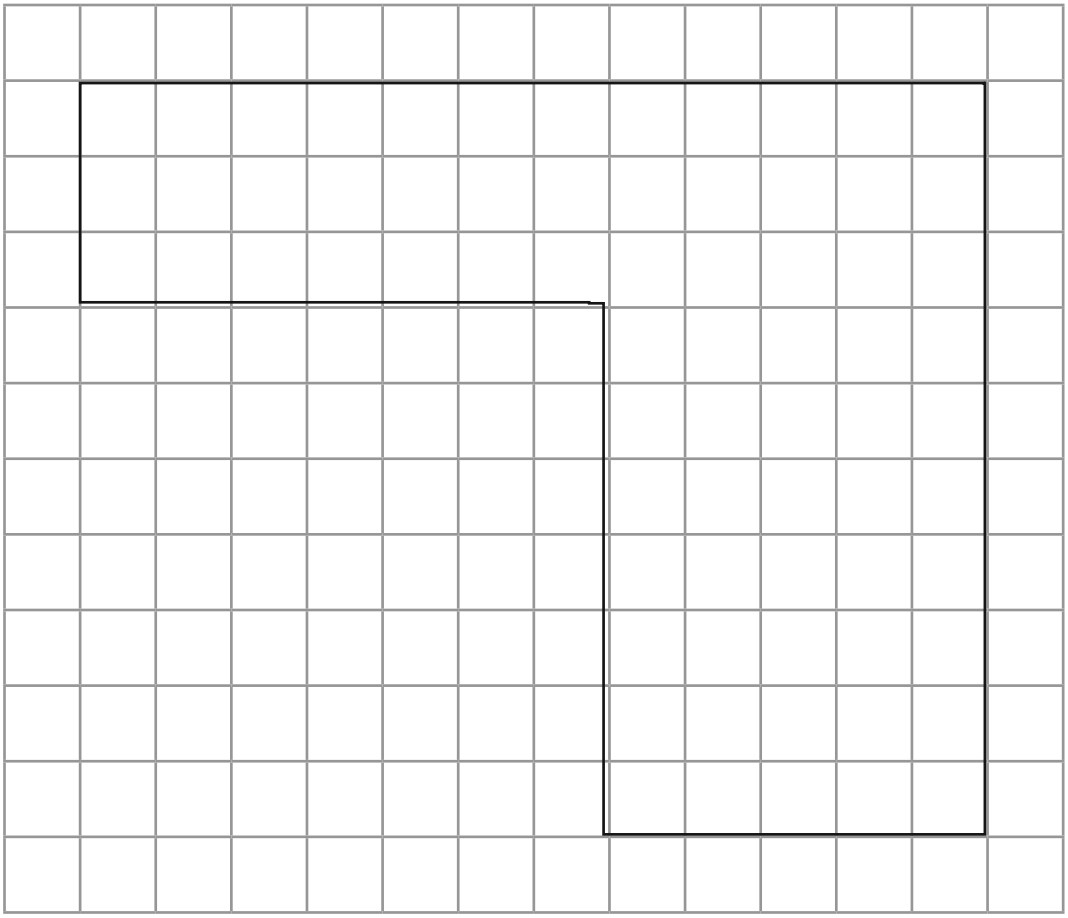
Measure and calculate the perimeter of rectilinear shapes (including squares)




**Perimeter = _____cm.**

## Area

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

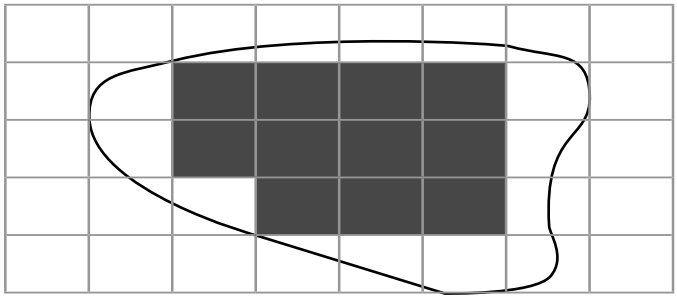


**Area = _____cm²**

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

Area = _____cm × _____cm = _____cm²

c) Estimate the area of this irregular shape:



_____

## Money

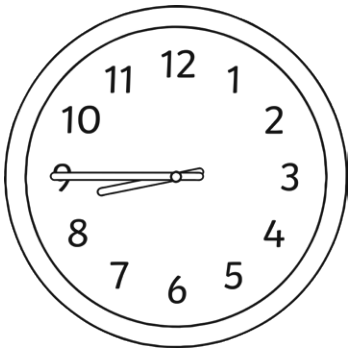
53. Add and subtract giving change

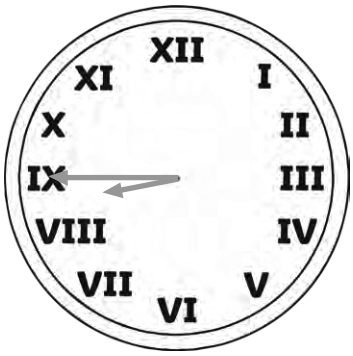
Jude buys a bag of apples for £2.25 and some avocados for £3.15.How much change will he get from £20?

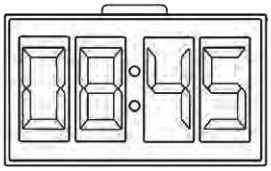
## Time

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**

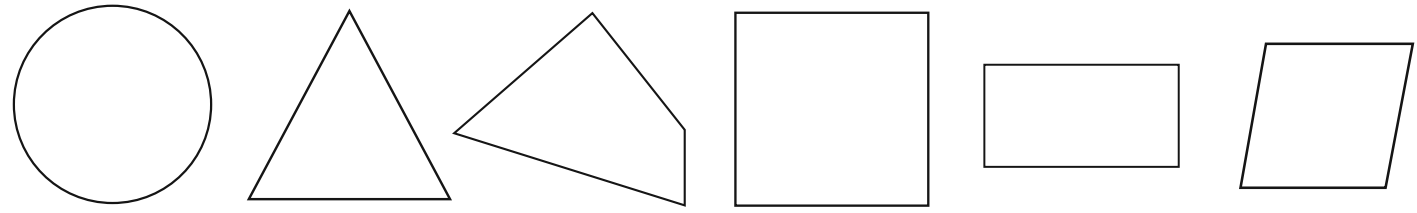
## Solve Problems

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?

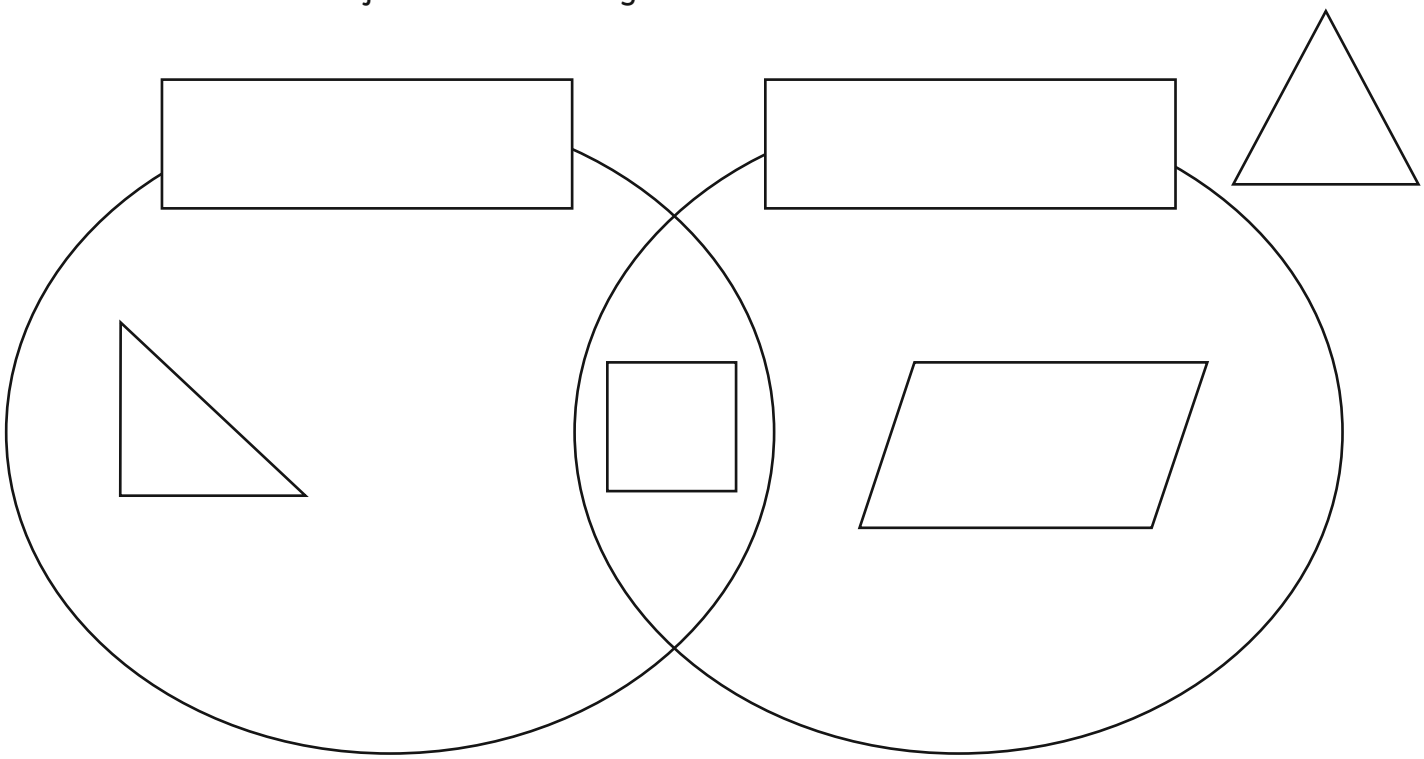
# 2D Shapes

56. Label the shapes.



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

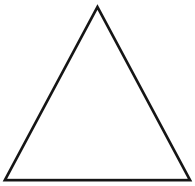
58. Write suitable titles for this Venn diagram:



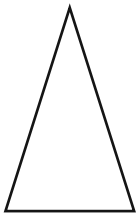
## Triangles

59. Label the triangles.

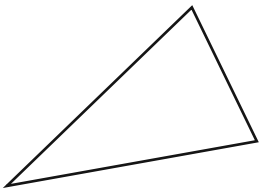
_____ (all sides and angles equal)



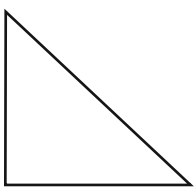
_____ (2 sides and angles equal)



_____ (no sides and angles equal)

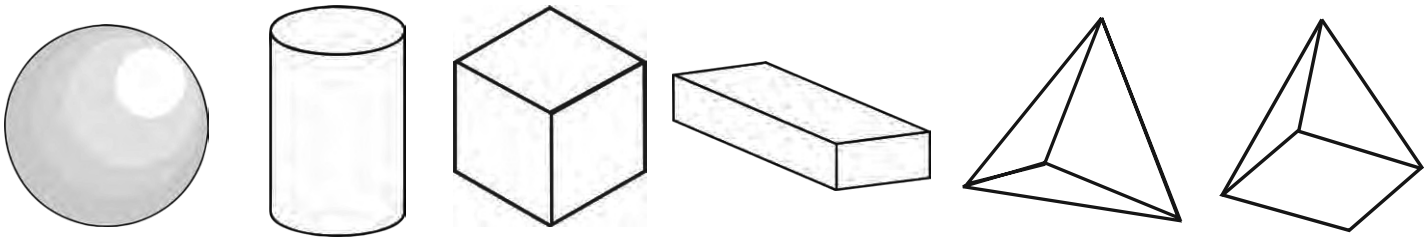


_____ (one angle a right angle)

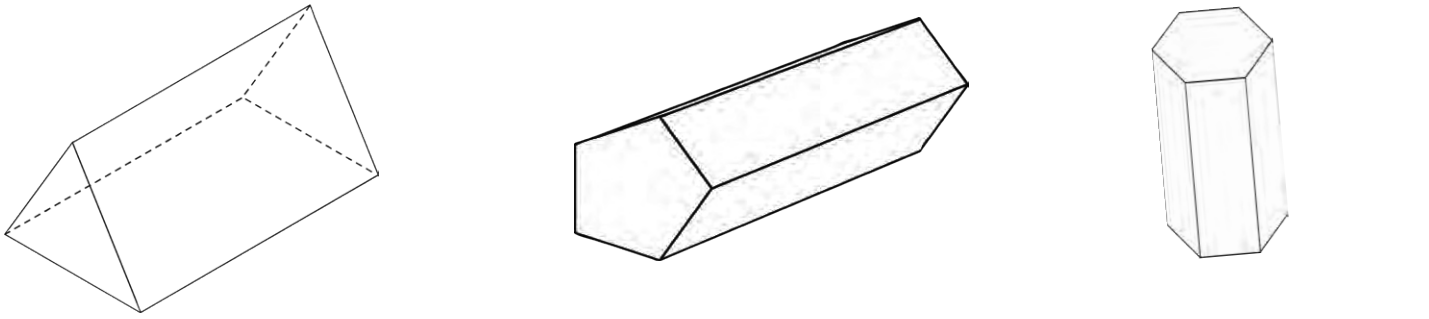


# 3D Shapes

60. Label the shapes:



_____ _____ _____ _____ _____ _____



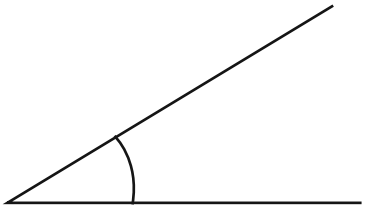
_____ _____ _____

Recognise 2D representations and make models from modelling materials

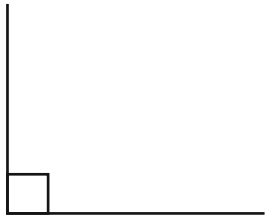
## Angles

61. Complete the statements:

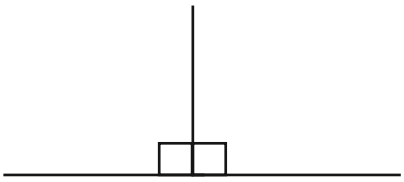
An _____ measures a turn.



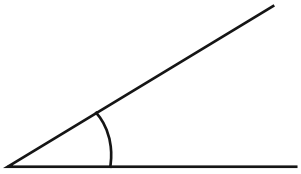
A _____ _____ is the corner of a square.



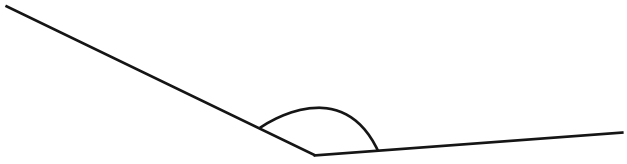
_____ right angles make a straight line.



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

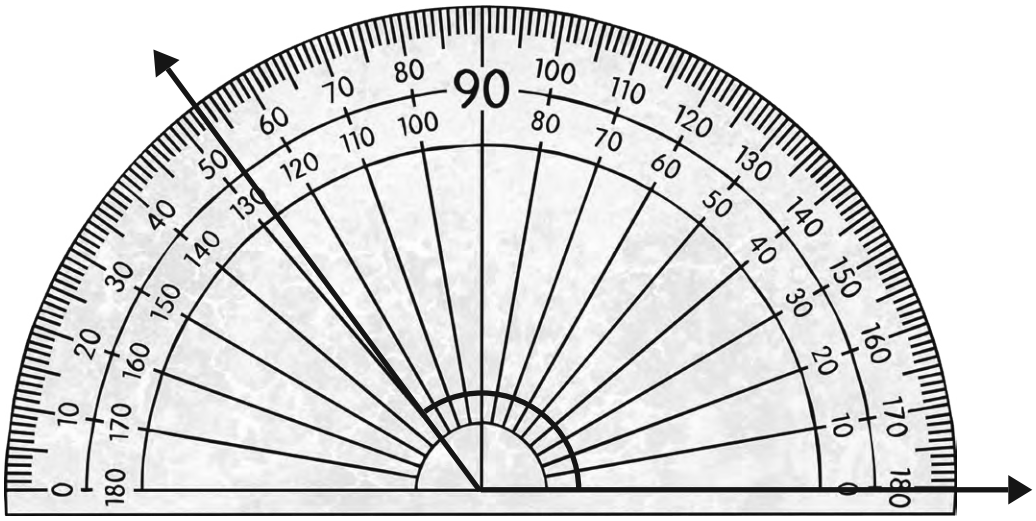


An _____ angle is between a right angle and a straight line.

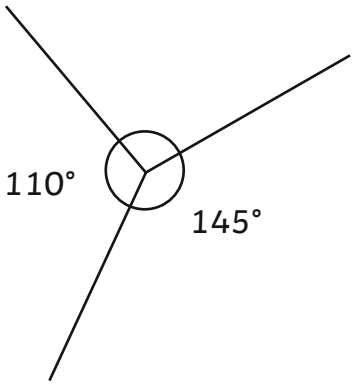


# Draw and Measure Angles

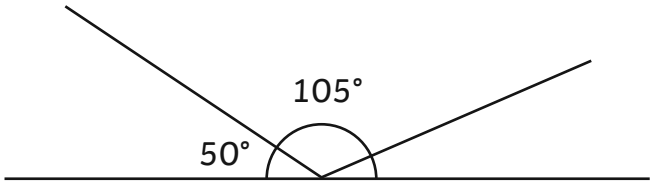
62. a) Measure the angle: _____



b) Calculate the missing angles:




c)




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

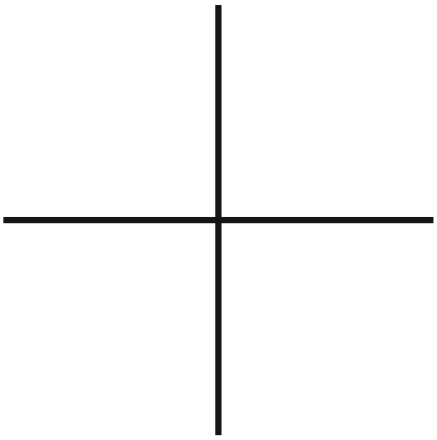
## Lines

63. Label the lines using the word bank:

**vertical**
**parallel**
**horizontal**
**perpendicular**

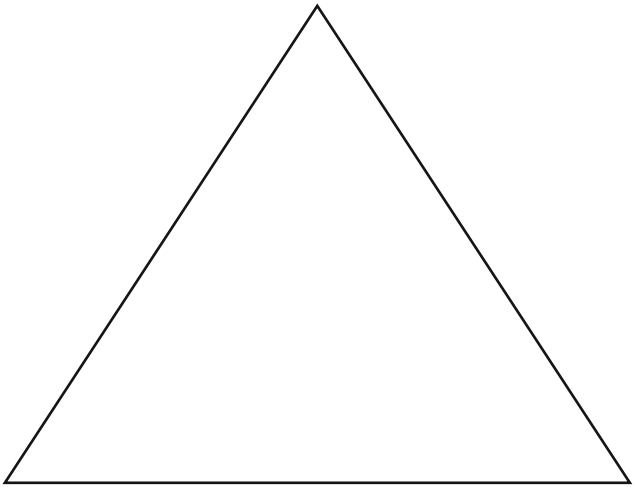


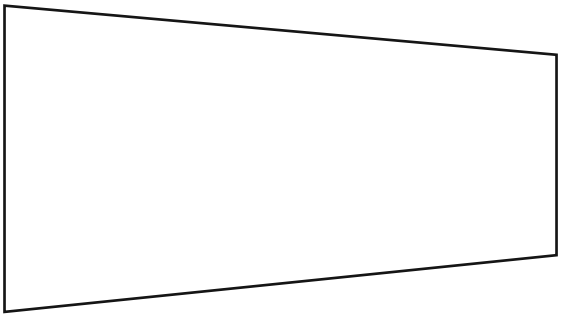




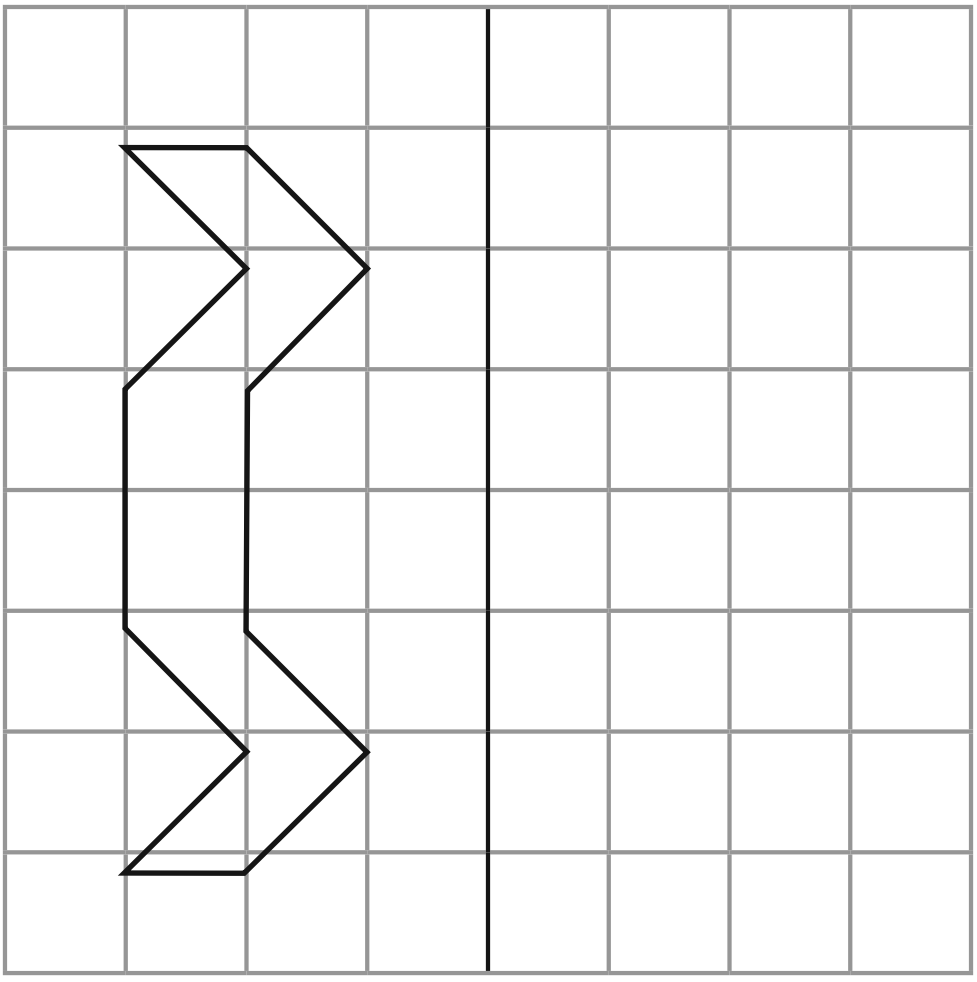
# Symmetry

64. Mark the lines of symmetry in these shapes:



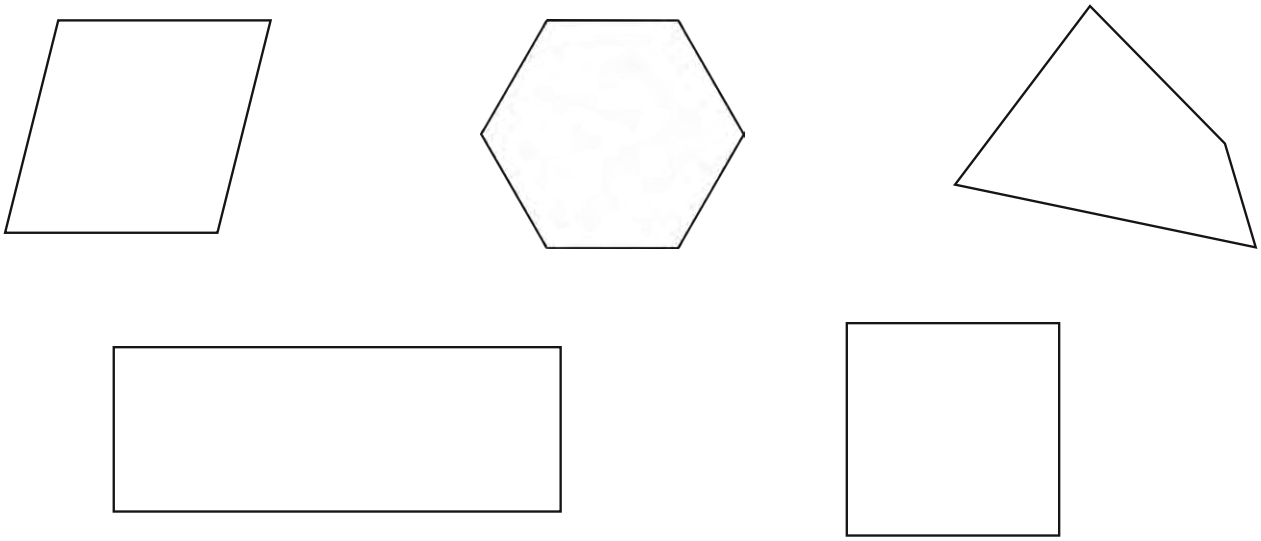


Complete the symmetrical figure:



## Regular and Irregular Polygons

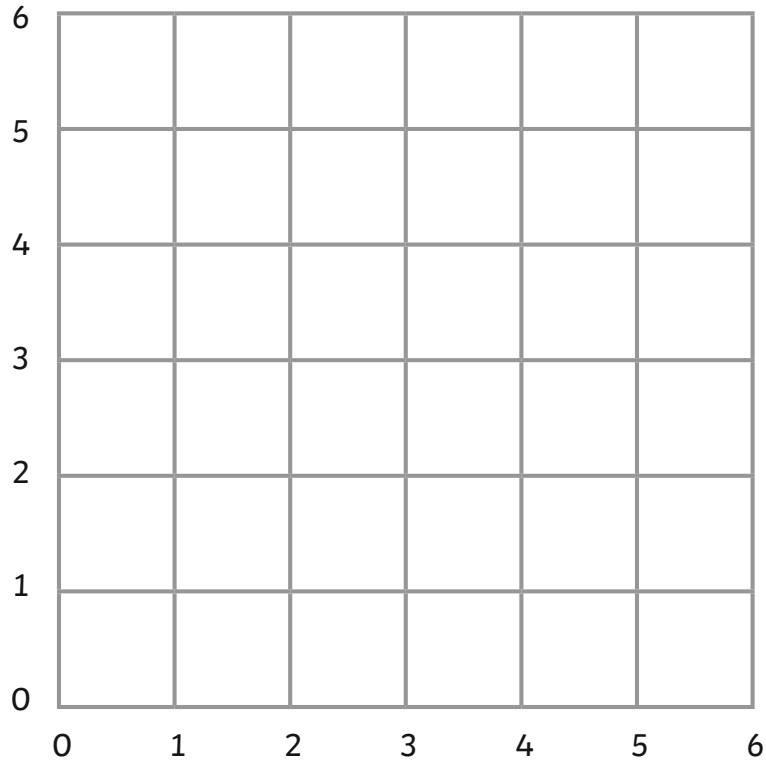
65. Circle the regular polygons:



# Geometry – Position and Direction

## Coordinates

66.




Label A, B and C The coordinates are

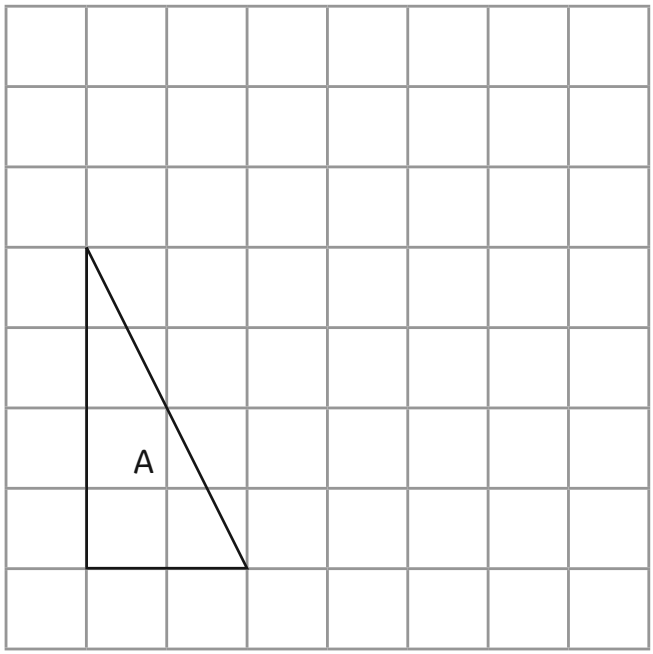
A (1,3)

B (2,4)

C (4,2)

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

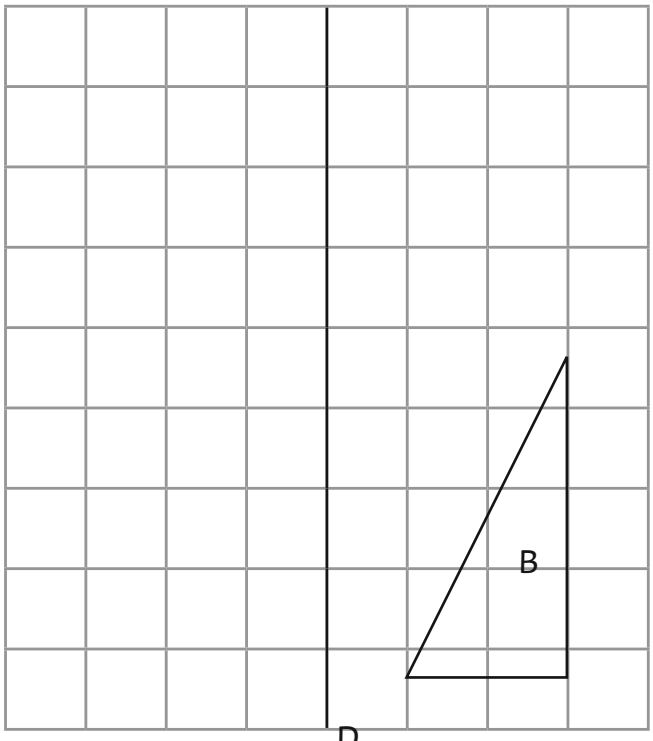
## Translation




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

Mark triangle B

## Reflection



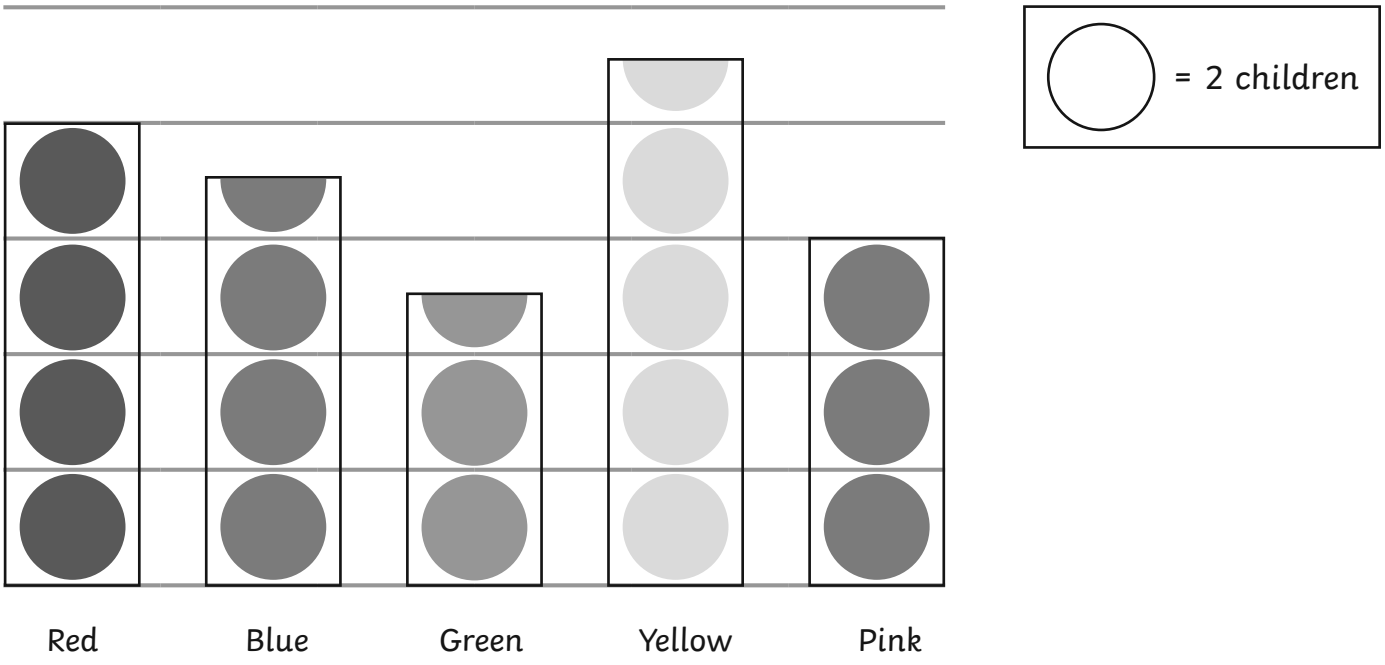

The triangle A is reflected about the line CD to triangle B.

# Statistics

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

## Pictograms

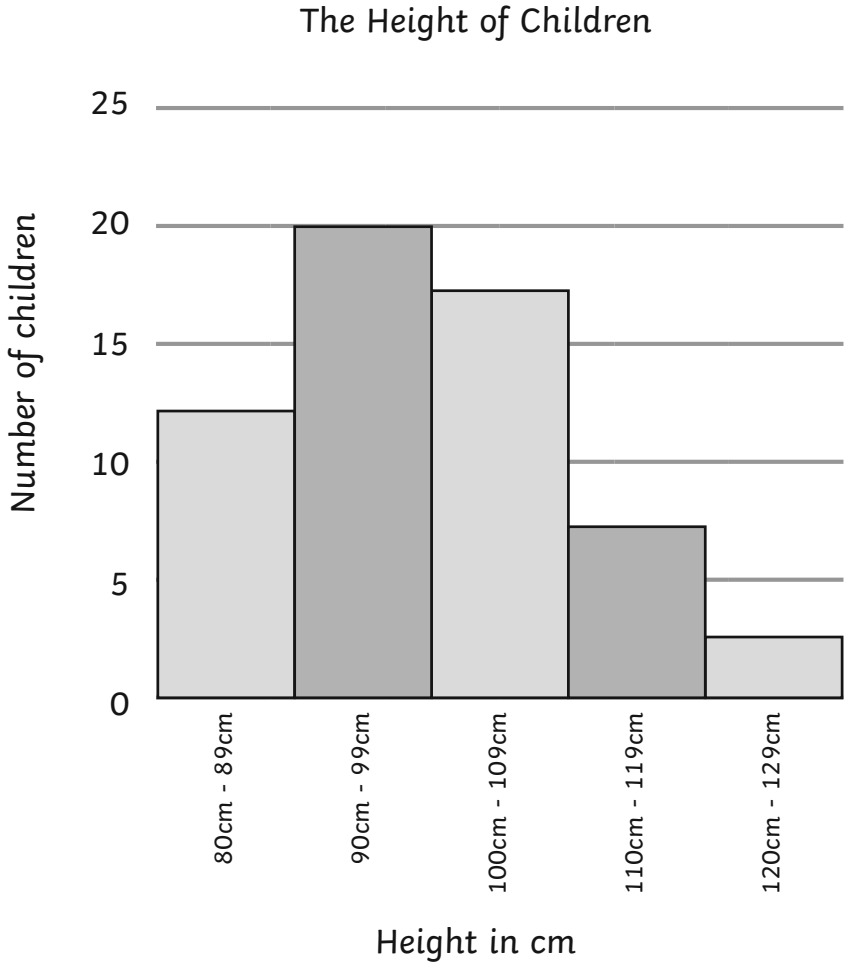
Favourite Colour




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?



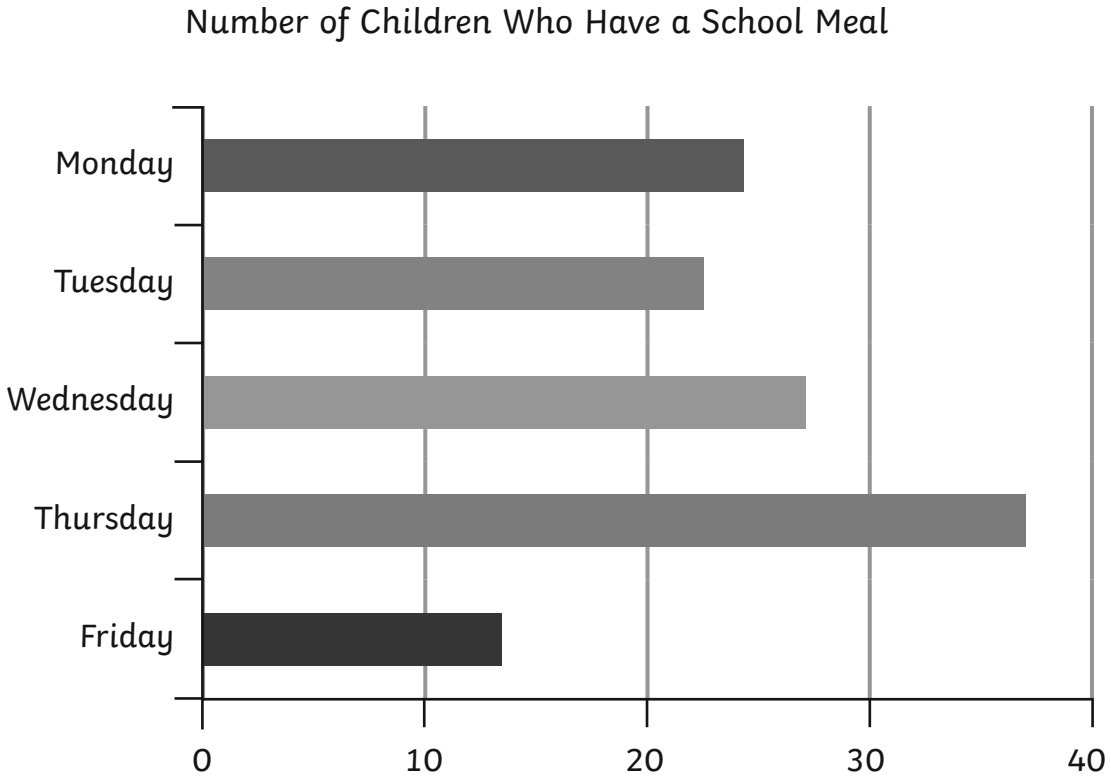

c) How many children are shorter than 1m? _____

## 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 |

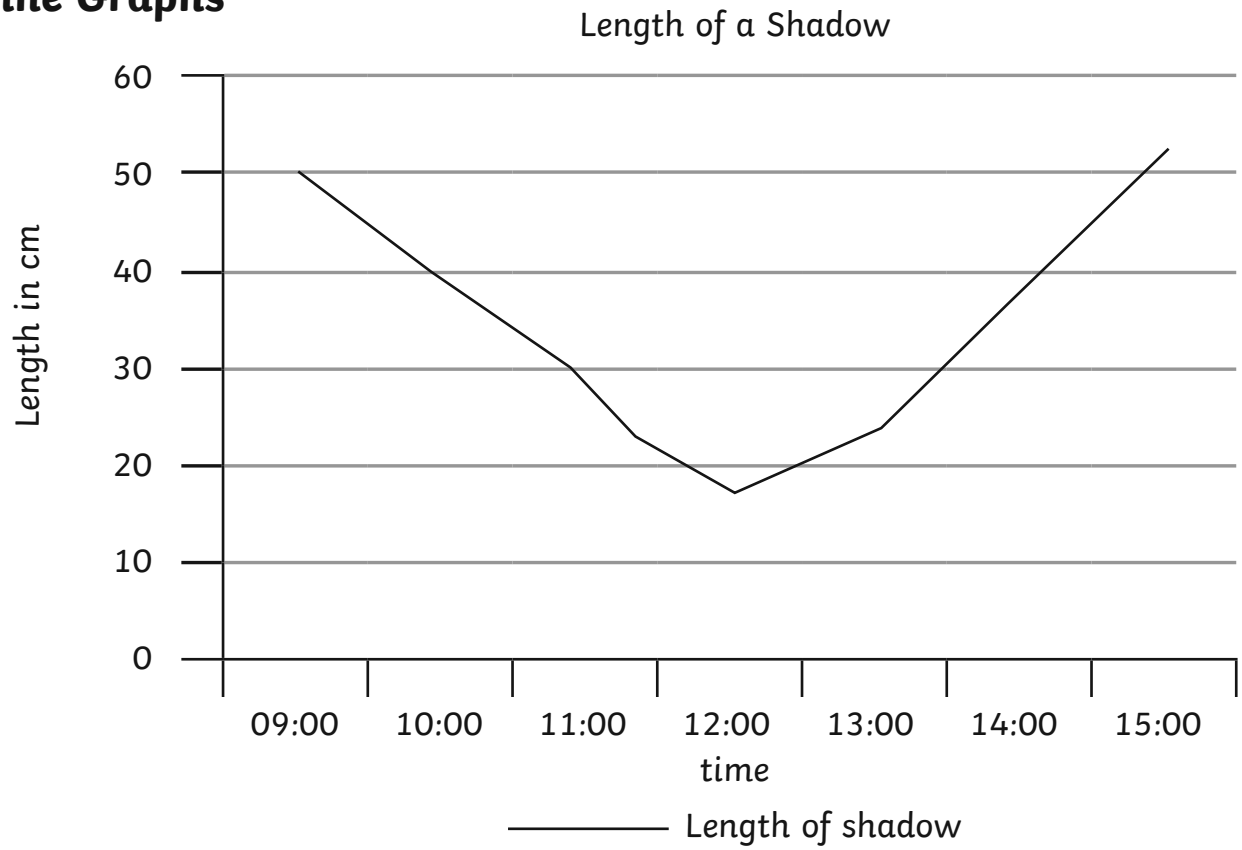
d) Which chocolate bar is the most popular? _____

## 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

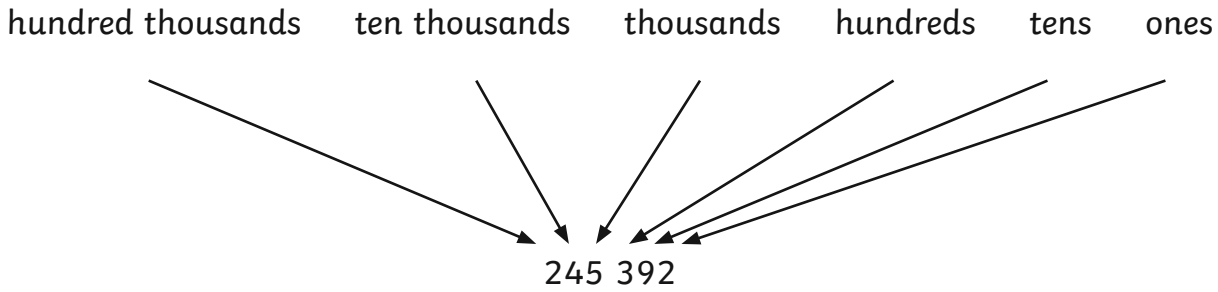
3. Count forwards and backwards through zero

   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**

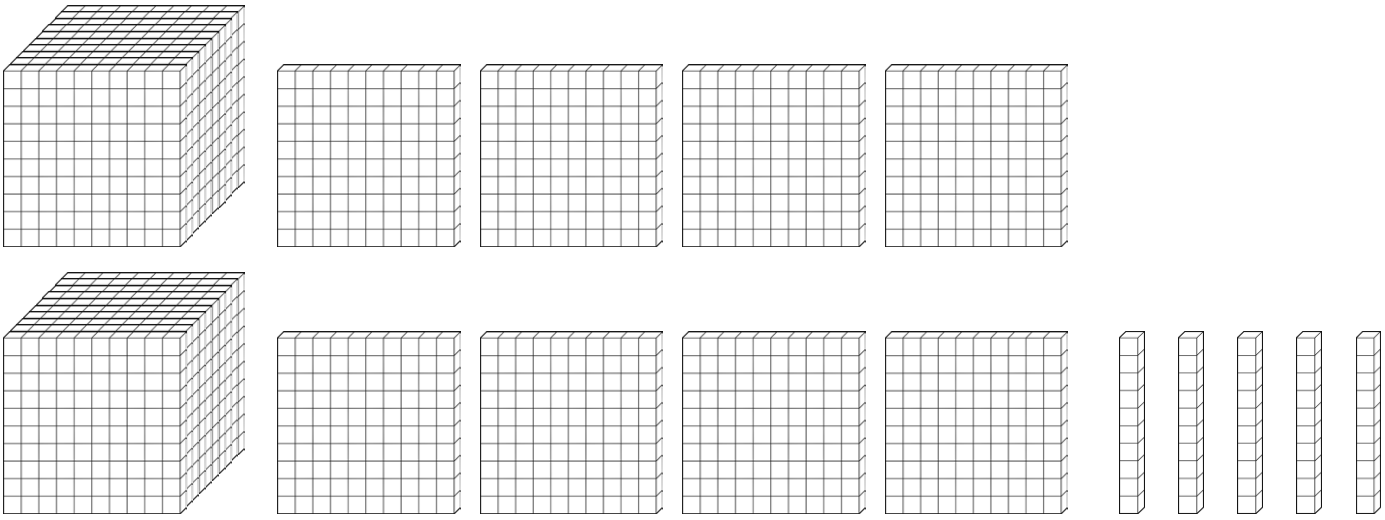
6. Order the following numbers from largest to smallest:

   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.**

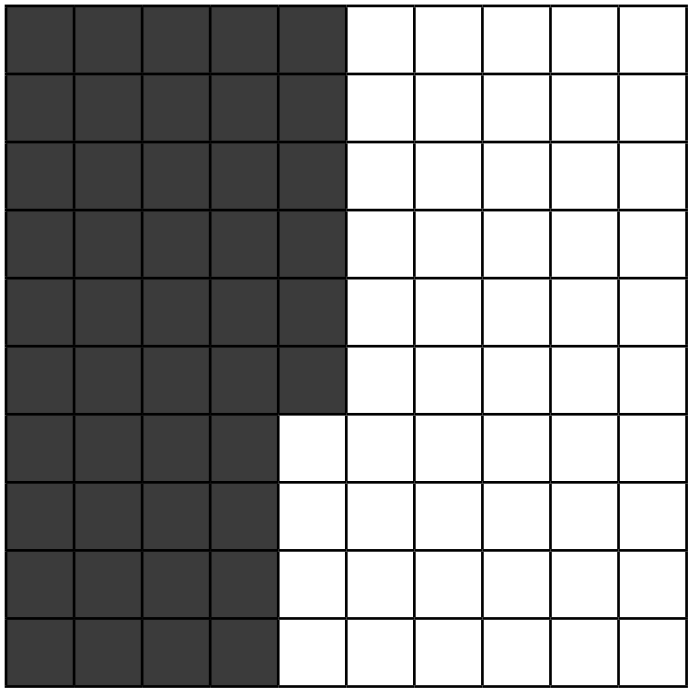
29. 120 pencils are shared equally between 3 classes. How many pencils will they each receive?

**120 ÷ 3 = 40 pencils each.**

# Fractions

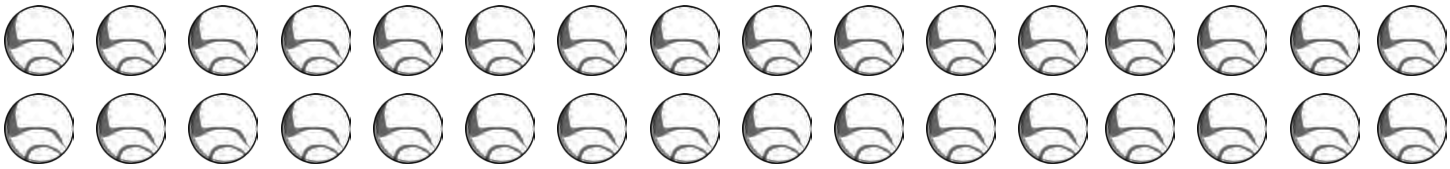
30. Shade to show 7/10:

Shade to show 46/100:



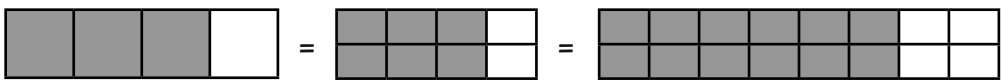
## Equivalent Fractions

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

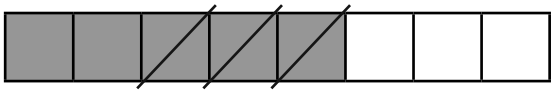
33. Write 3 fractions that are equivalent to $\frac{1}{3}$ $\frac{2}{6}$ $\frac{4}{12}$ $\frac{8}{24}$

## 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

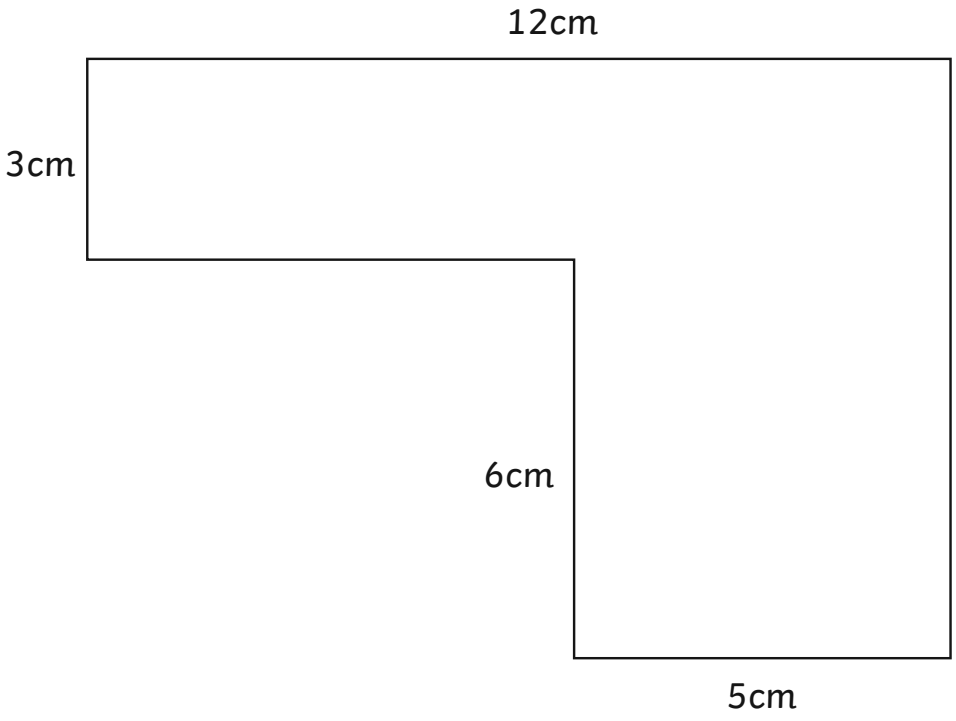
1 minute = **60** seconds

## Perimeter

51. Calculate the perimeter:


**Perimeter = 22cm.**

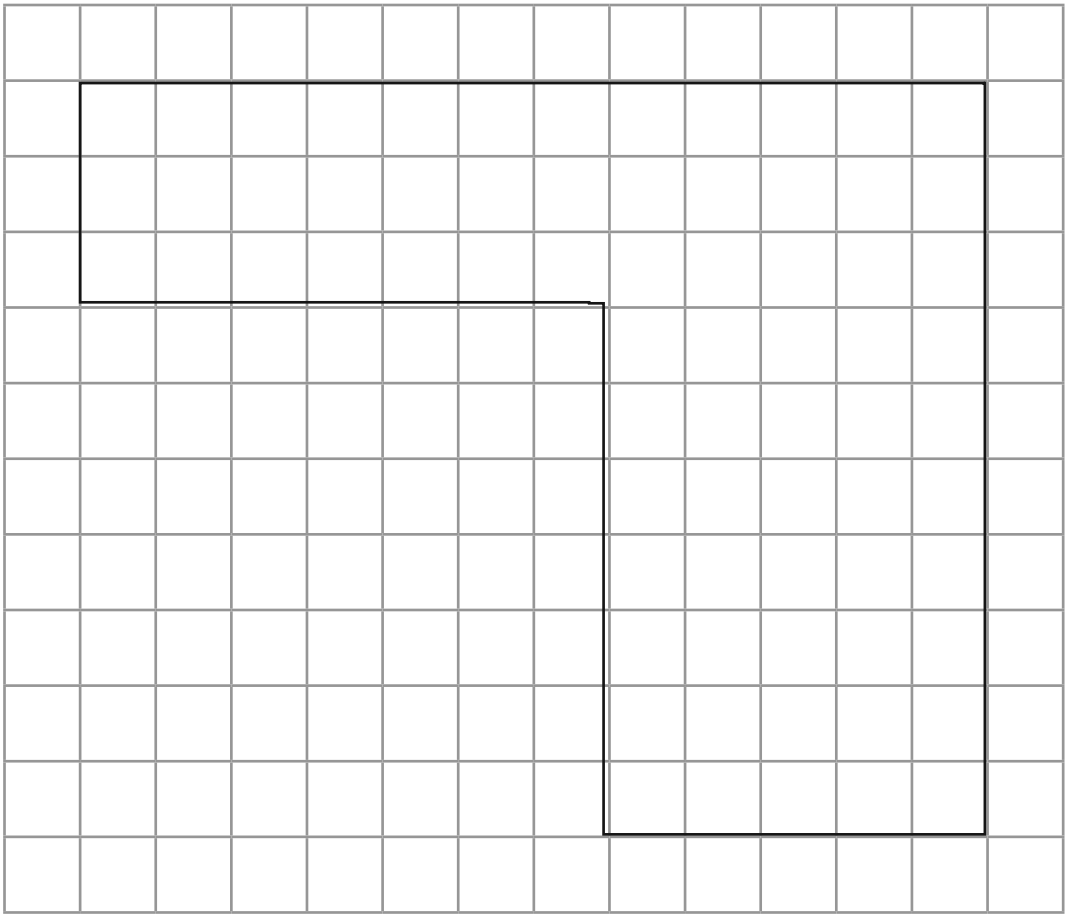
Measure and calculate the perimeter of rectilinear shapes (including squares)




**Perimeter = 42cm.**

## Area

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

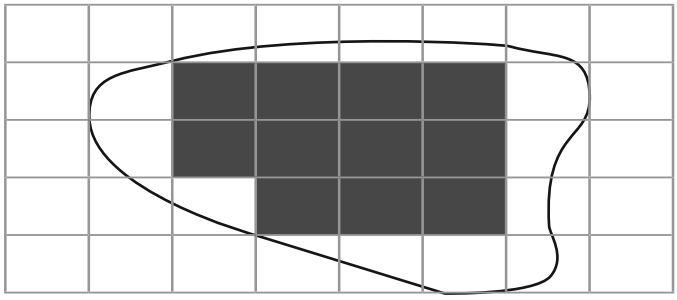


**Area** = 66cm²

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?

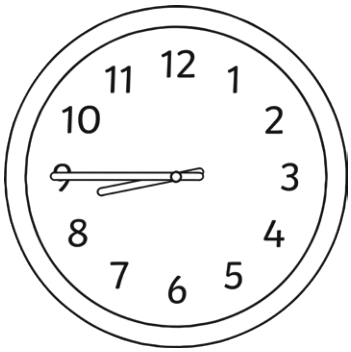
£2.25 + £3.15 = £5.40

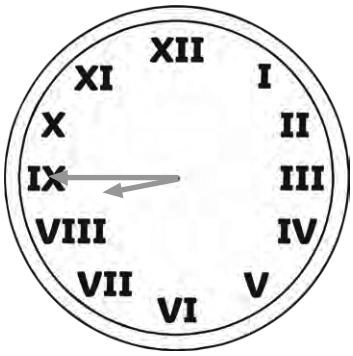
£20 - £5.40 = **£14.60**

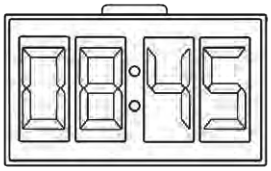
## Time

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?

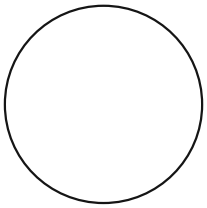
**1.75** litres of water.

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?

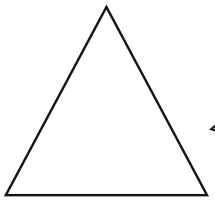
**175g** more soil is needed in each pot.

# 2D Shapes

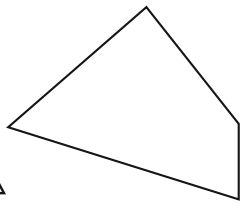
56. Label the shapes.



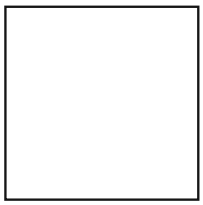
circle



triangle

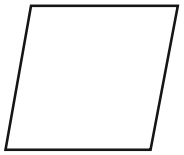


quadrilateral



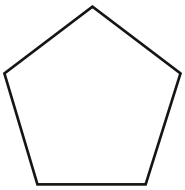
square

rectangle

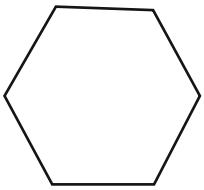


rhombus

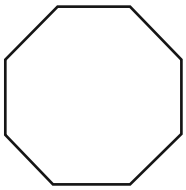
parallelogram



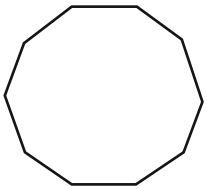
pentagon



hexagon

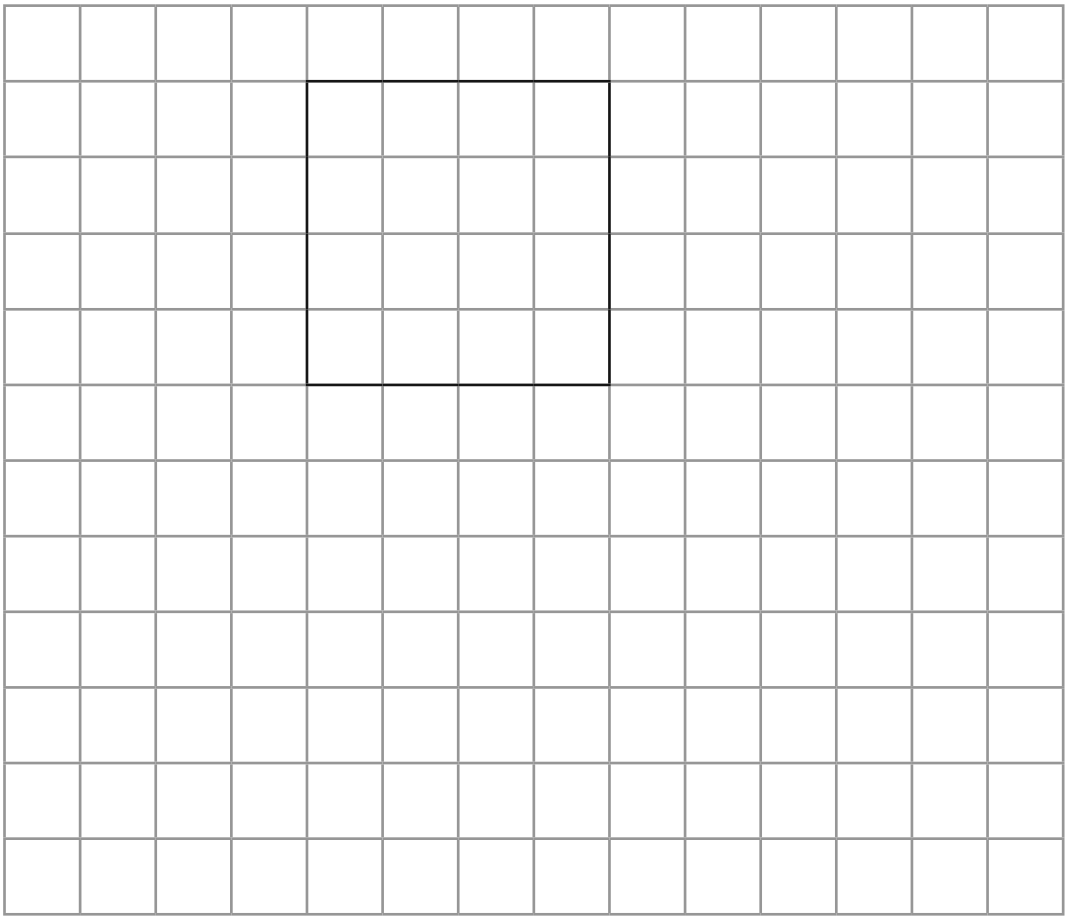


octagon

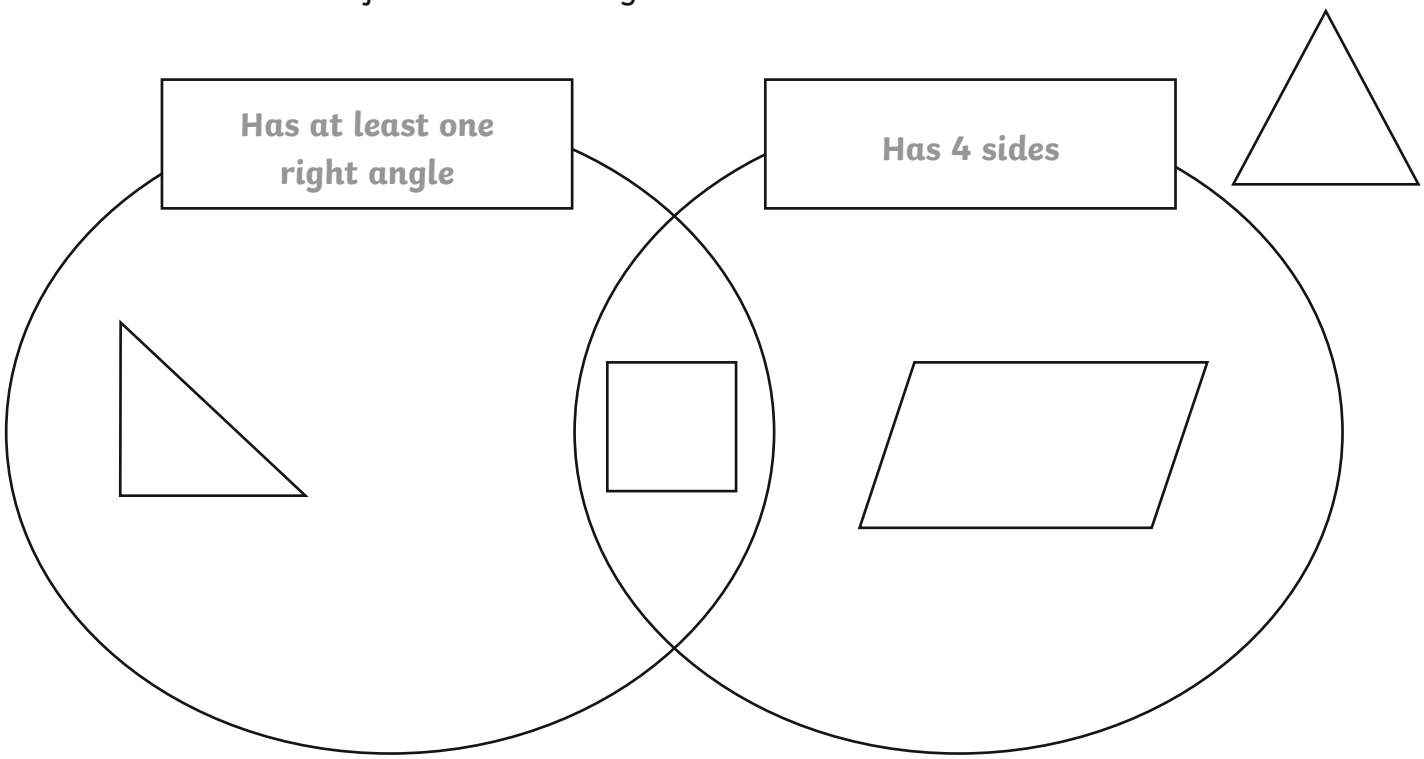


decagon

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



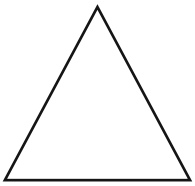
58. Write suitable titles for this Venn diagram:



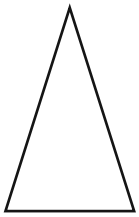

## Triangles

59. Label the triangles.

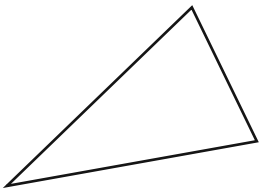
**Equilateral** (all sides and angles equal)



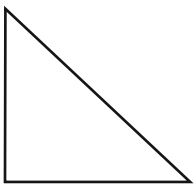
**Isosceles** (2 sides and angles equal)



**Scalene** (no sides and angles equal)

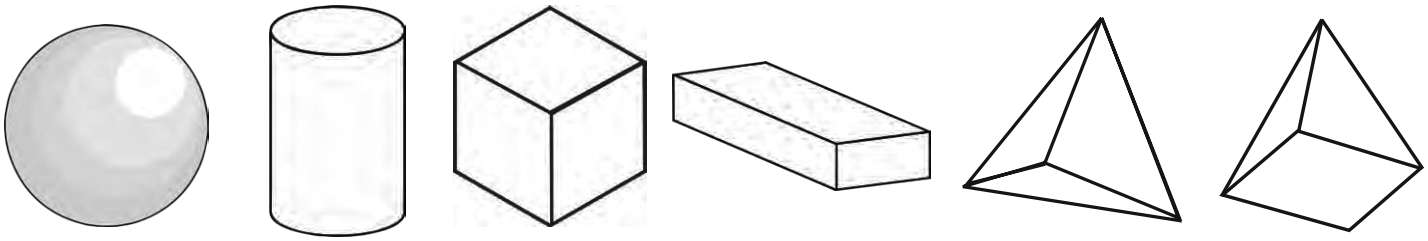


**Right-angled triangle** (no sides and angles equal)

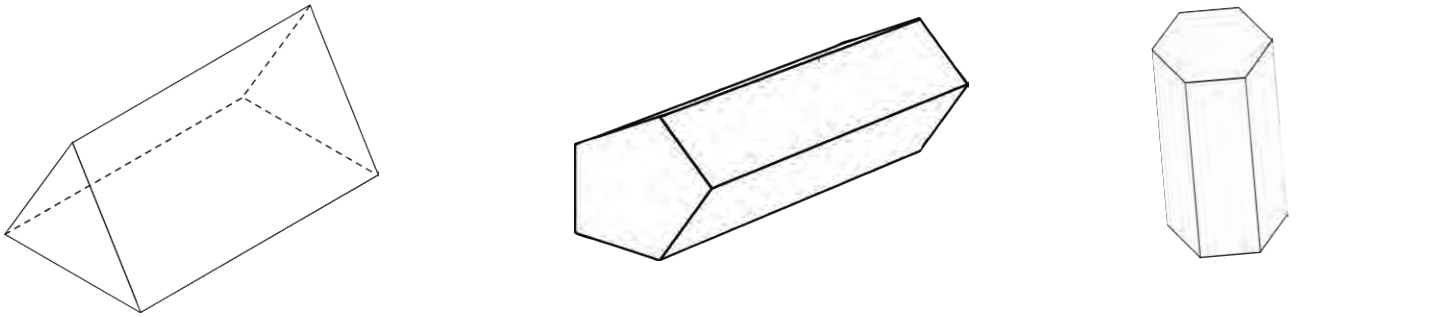


# 3D Shapes

60. Label the shapes:



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



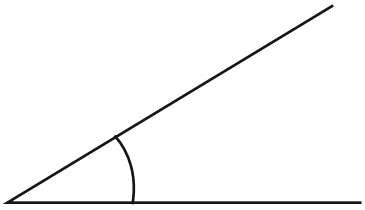
triangular prism | pentagonal prism | hexagonal prism

Recognise 2D representations and make models from modelling materials

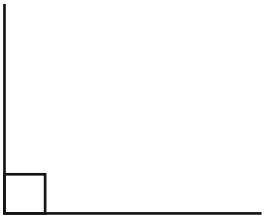
## Angles

61. Complete the statements:

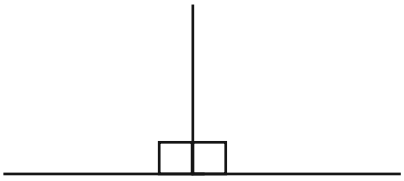
An **angle** measures a turn.



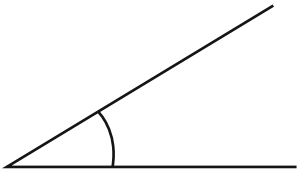
A **right angle** is the corner of a square.



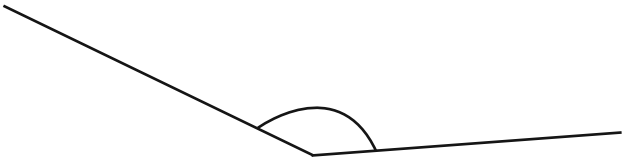
**2** right angles make a straight line.



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

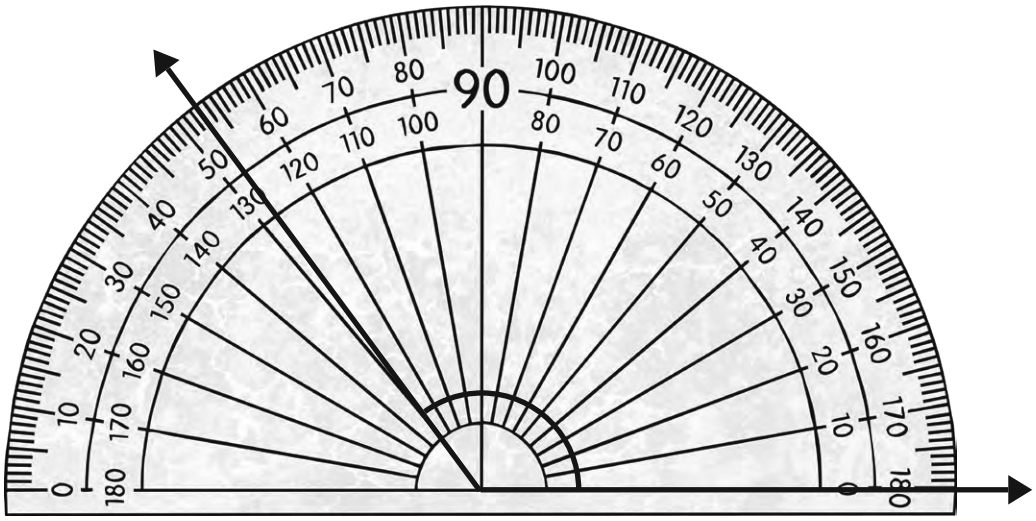


An **obtuse** angle is between a right angle and a straight line.



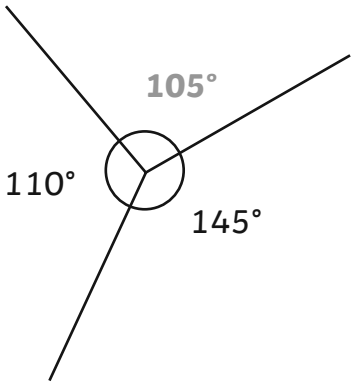
# Draw and Measure Angles

62. a) Measure the angle:

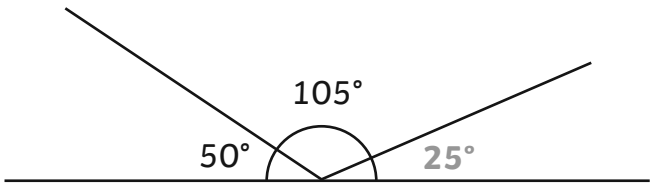



The angle measures **127°**

b) Calculate the missing angles:



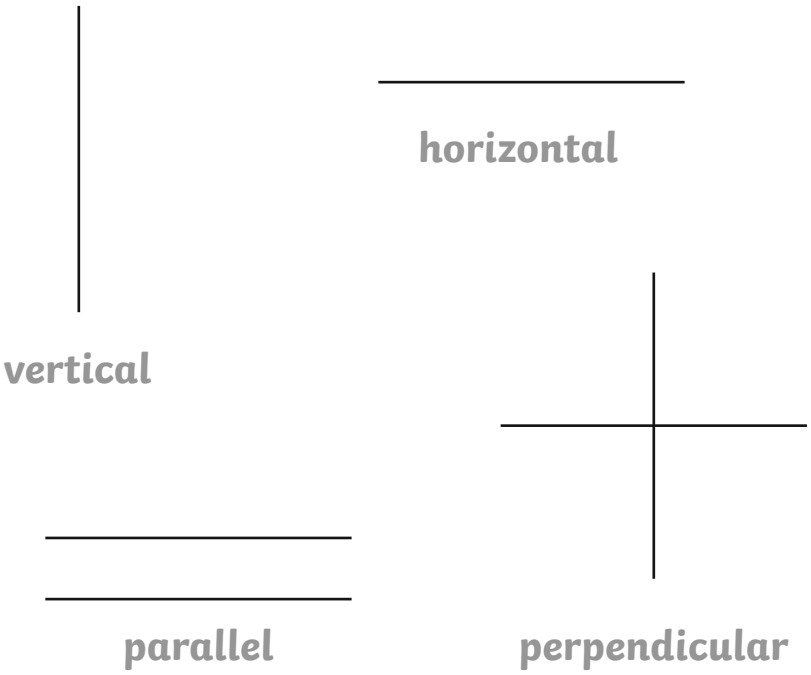

c)




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

## Lines

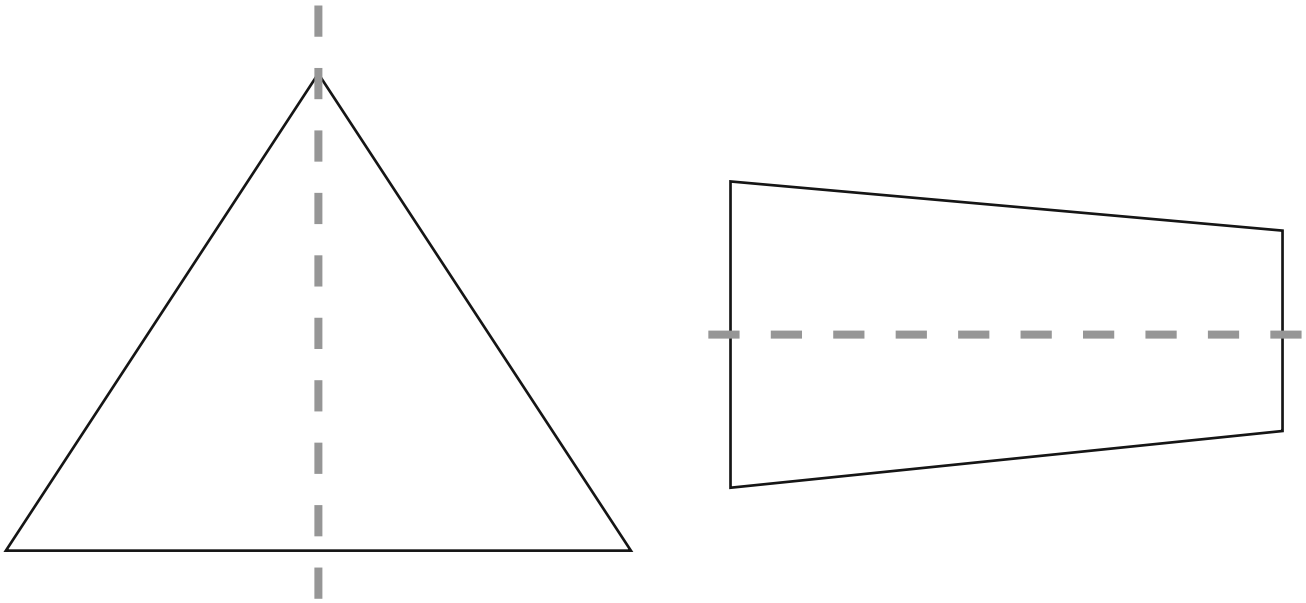
63. Label the lines using the word bank:



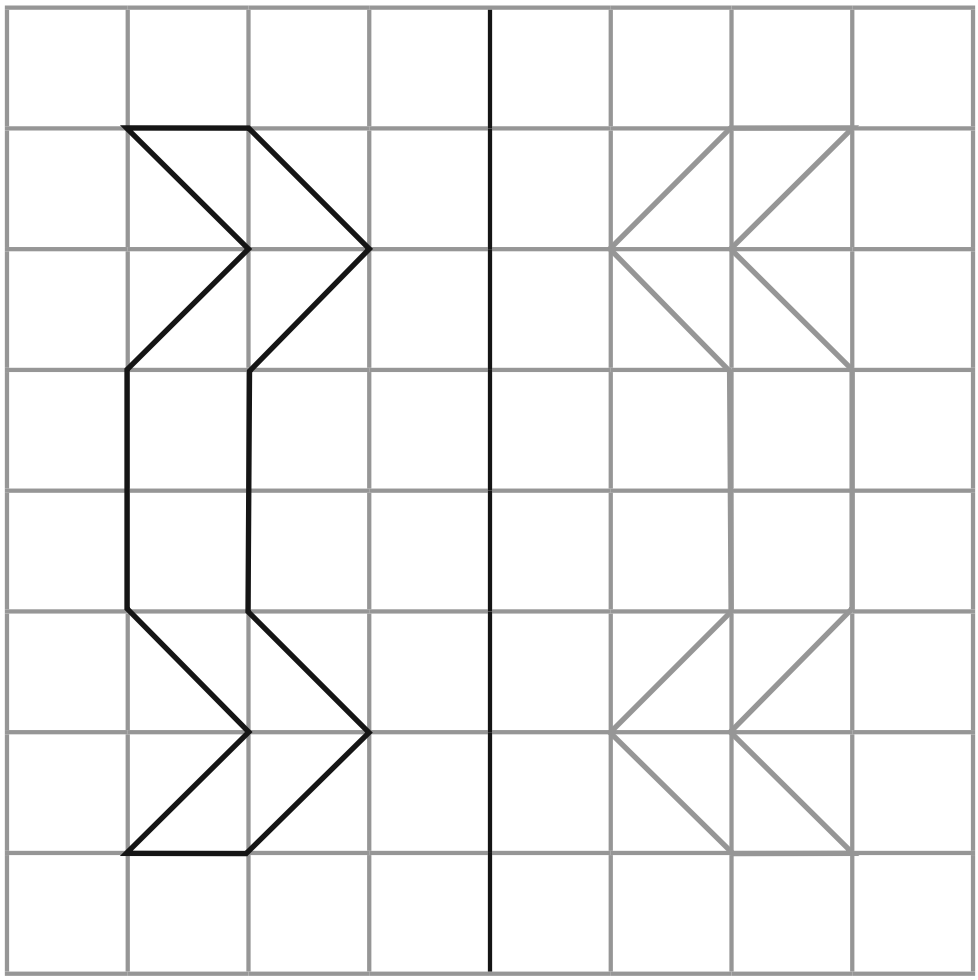

**vertical**
**parallel**
**horizontal**
**perpendicular**

## Symmetry

64. Mark the lines of symmetry in these shapes:

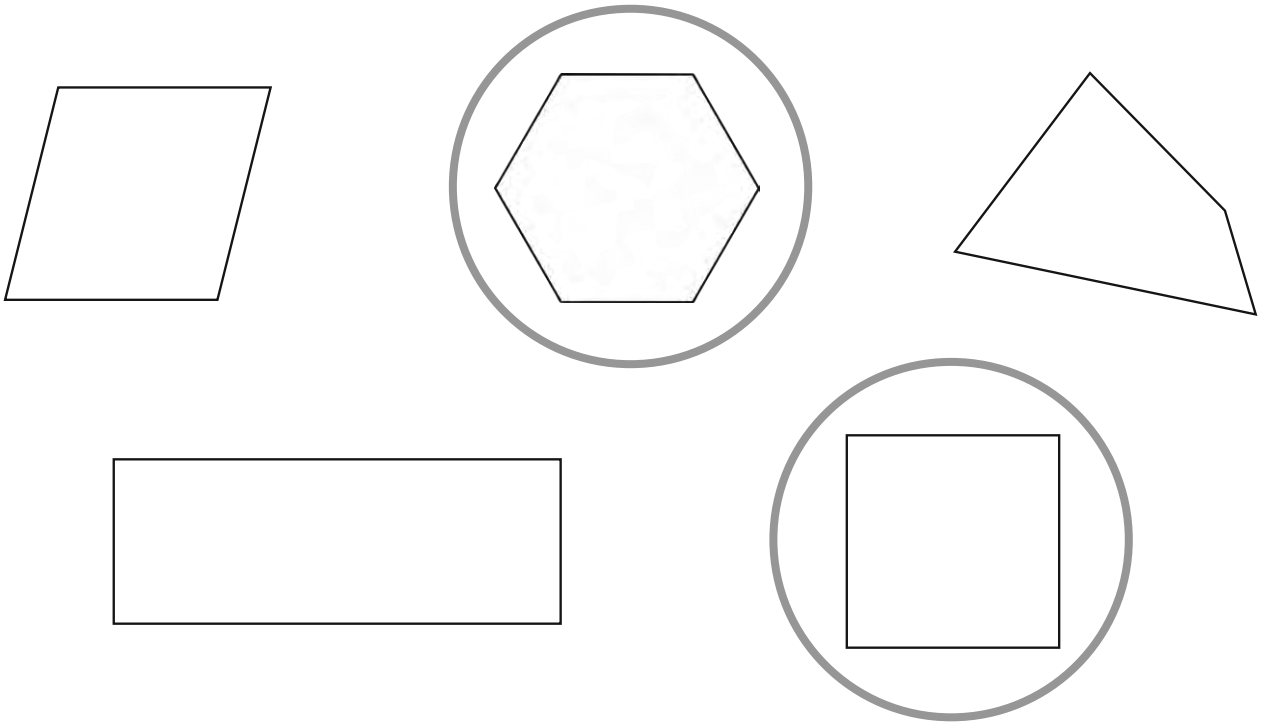


Complete the symmetrical figure:



## Regular and Irregular Polygons

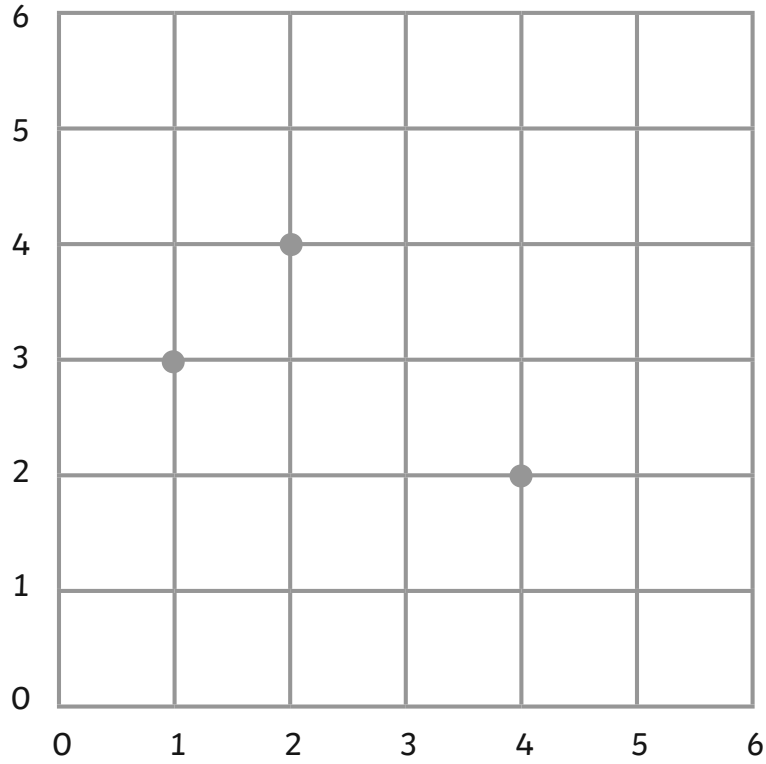
65. Circle the regular polygons:



# Geometry – Position and Direction

## Coordinates

66.



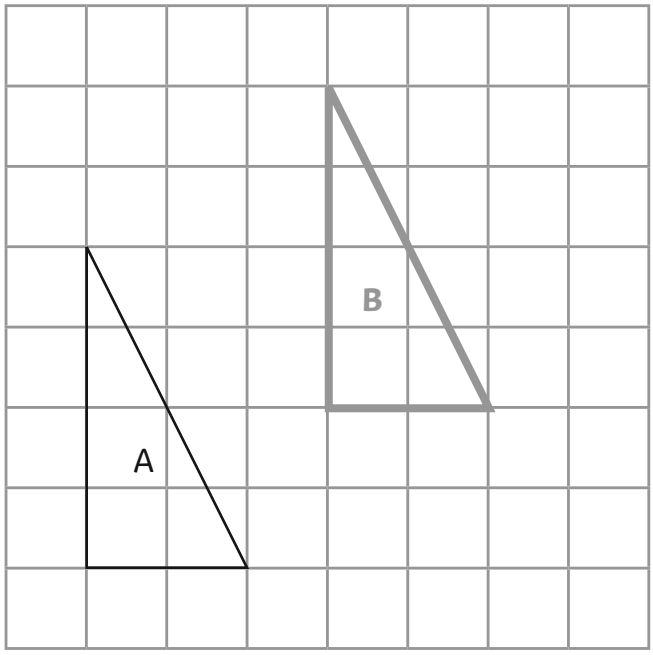

Label A, B and C The coordinates are

A (1,3)

B (2,4)

C (4,2)

## Translation

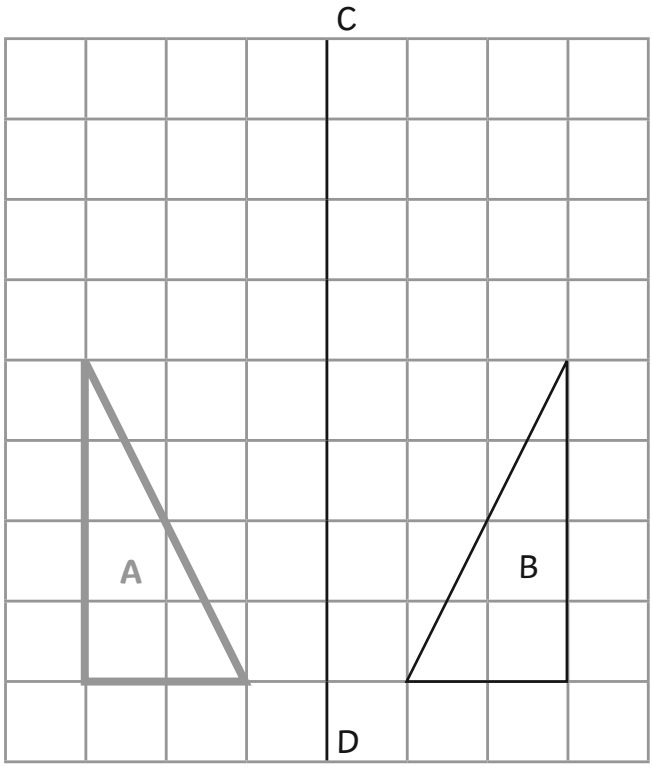



The triangle A is translated three squares to the right and two squares up to triangle B.

Mark triangle B

## Reflection

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

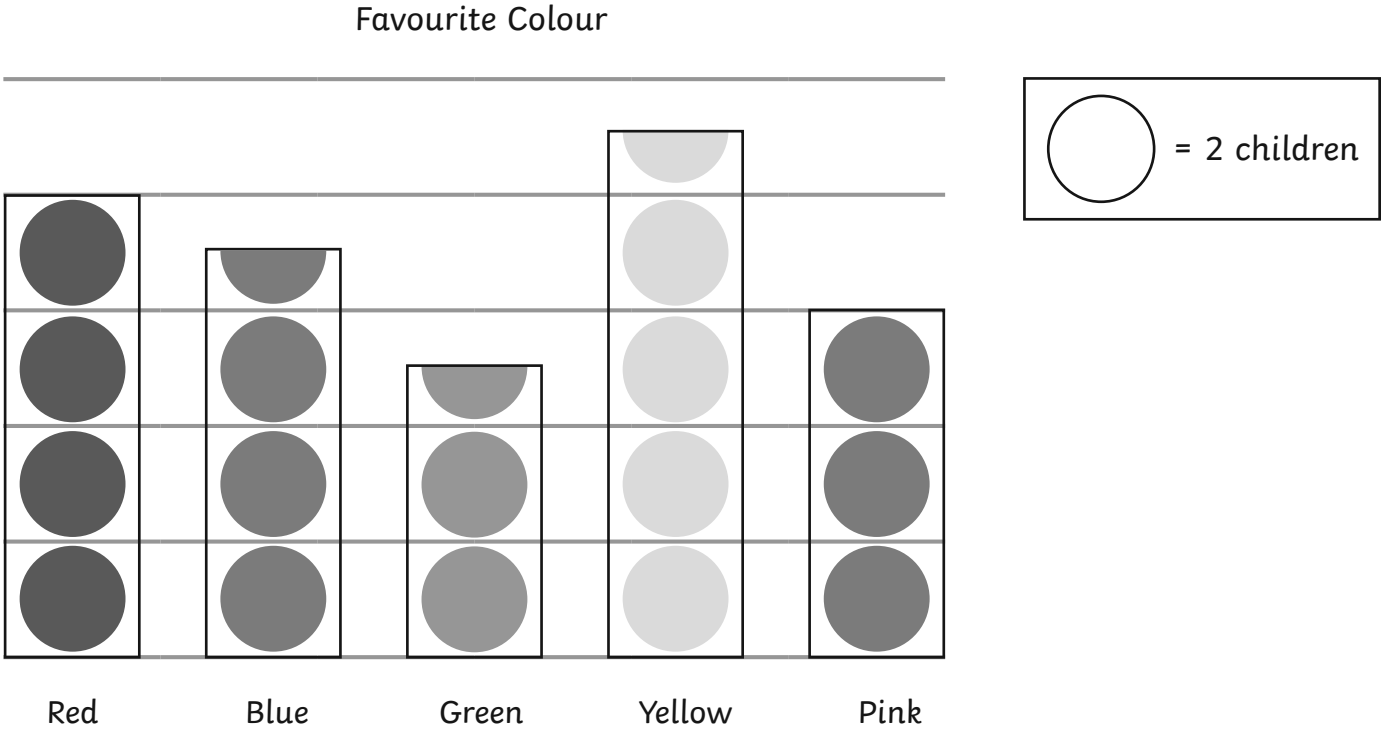



The triangle A is reflected about the line CD to triangle B.

# Statistics

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

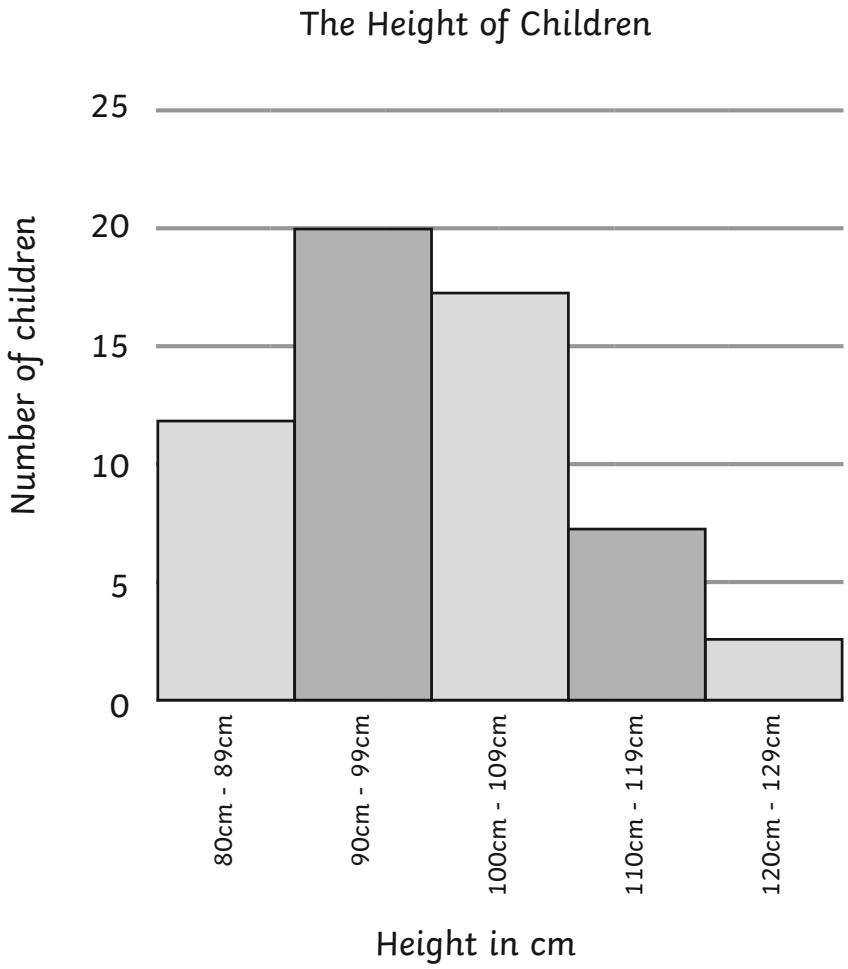
## Pictograms




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



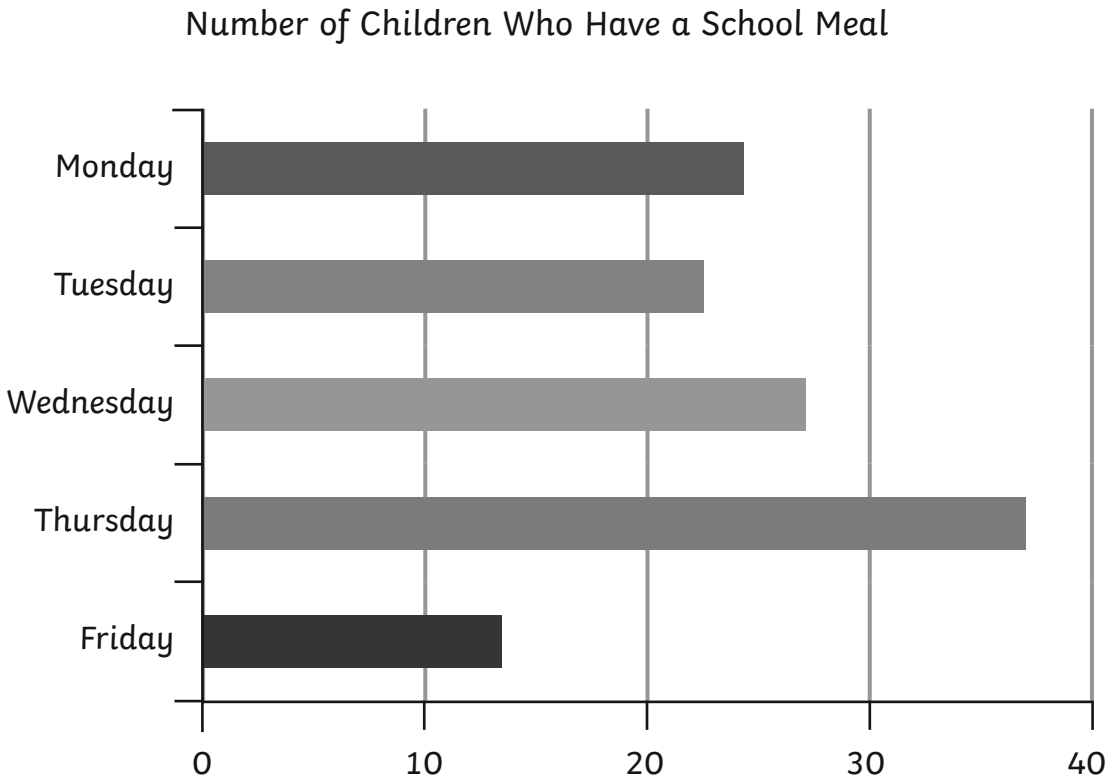

c) How many children are shorter than 1m? **32** or **33** children

## 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 |

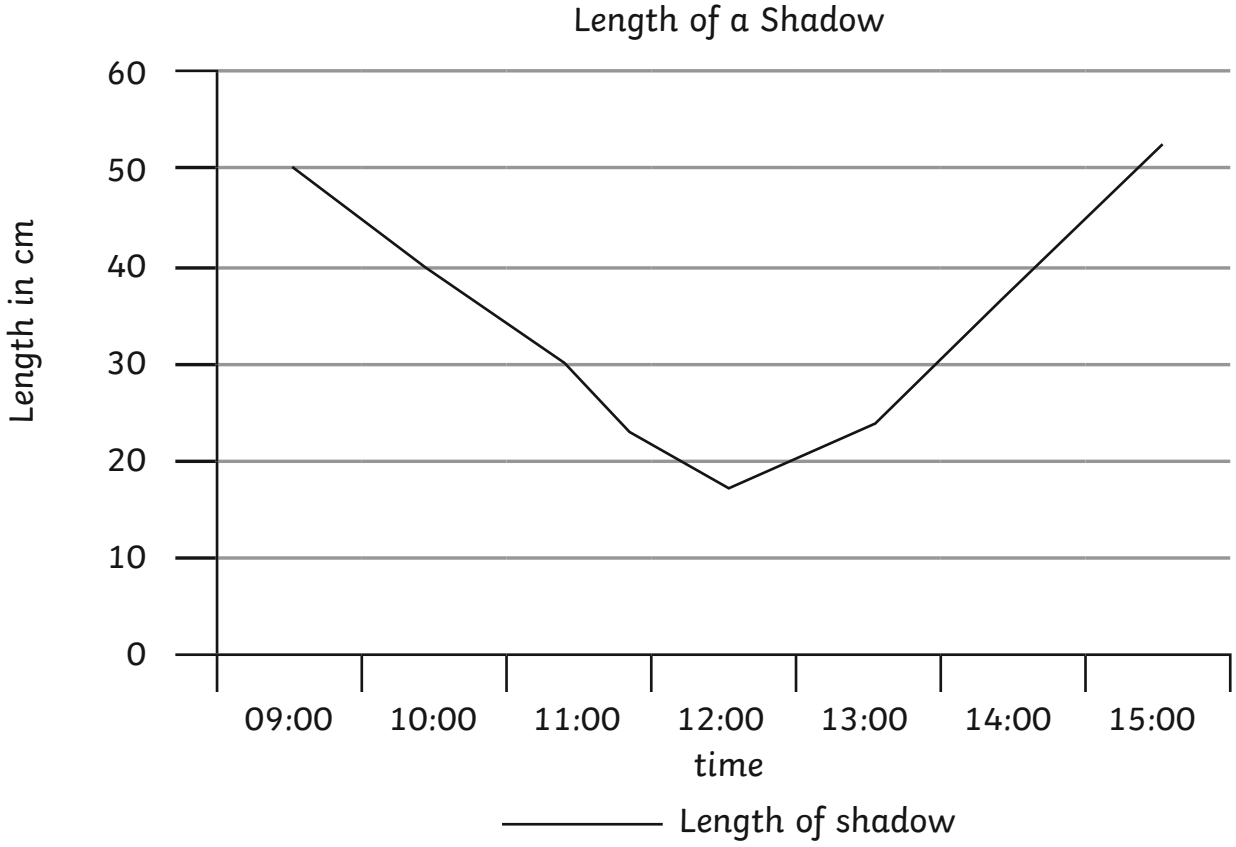
d) Which chocolate bar is the most popular? **Tiger**

## 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

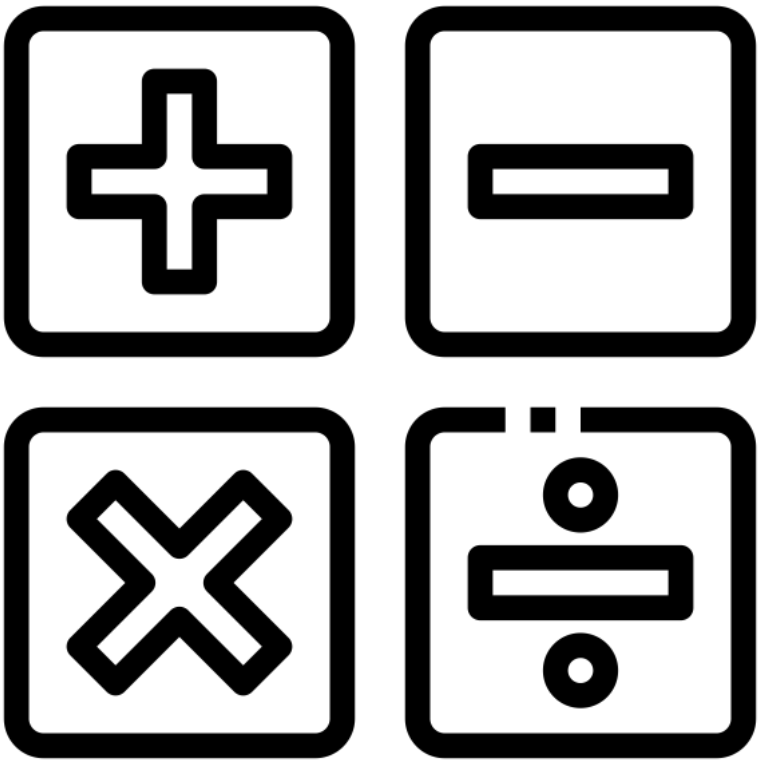
Train timetable from London to Newcastle

| 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

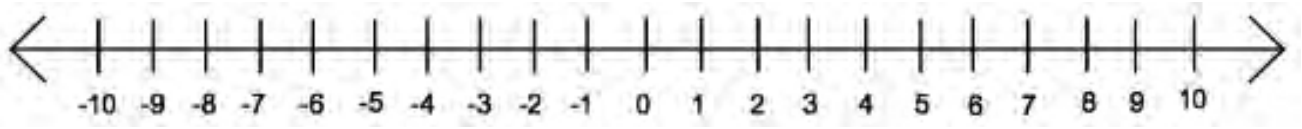
……..

**(Total for question = 1 mark)**

## Directed Numbers

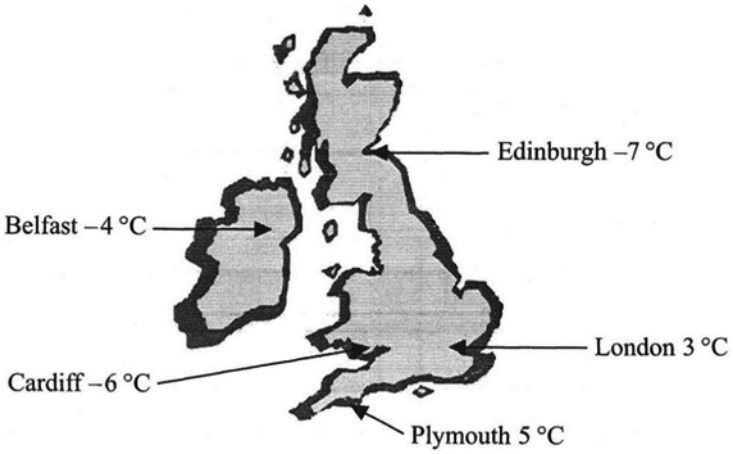
**Things to remember:**

- 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.

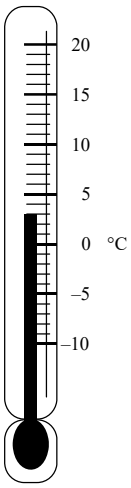
(d) Work out the temperature on Pluto.

…….°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*.

(…….. , ……..)

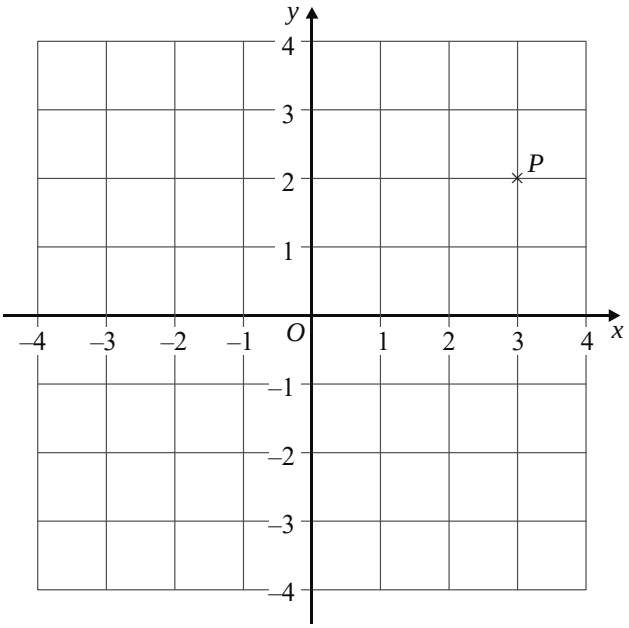
**(1)**

(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*.

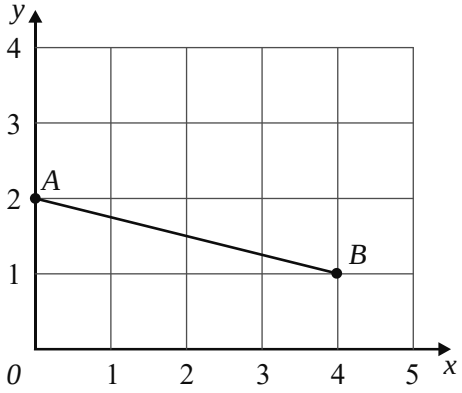
( …… , …….. )

**(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.*

(……,……)

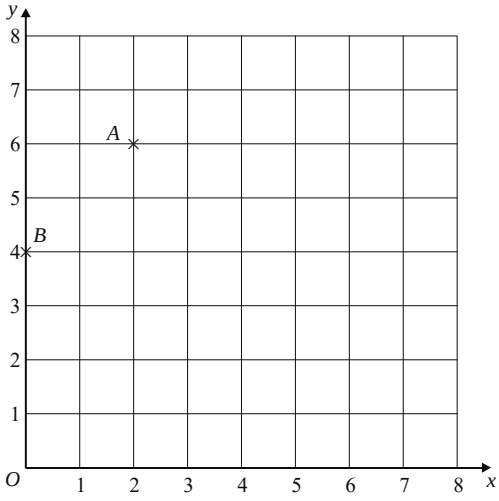
**(2)**

(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)**

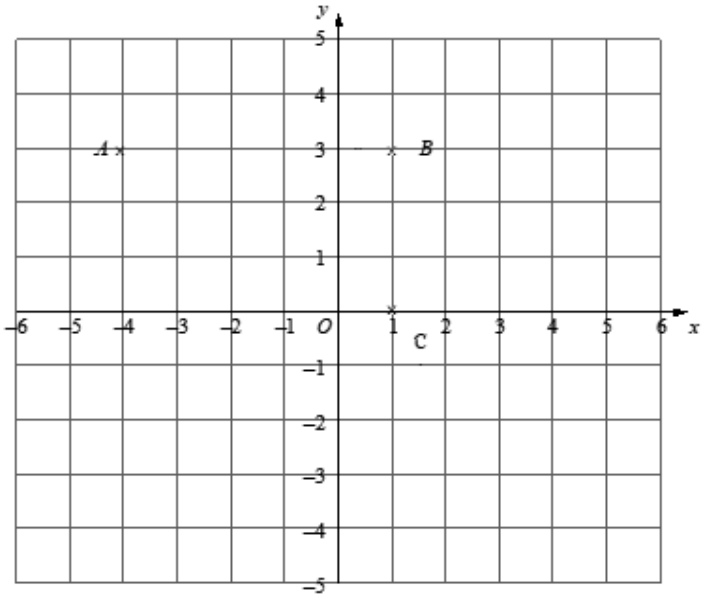
(b) (i) On the grid, mark the point *D* so that *ABCD* is a rectangle.

(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*.

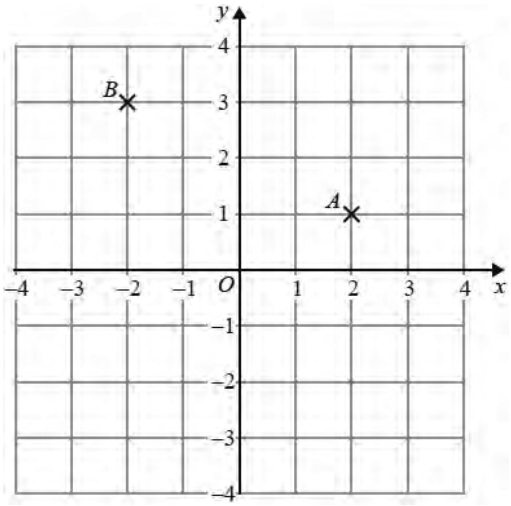
(..... , .....)

**(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*.

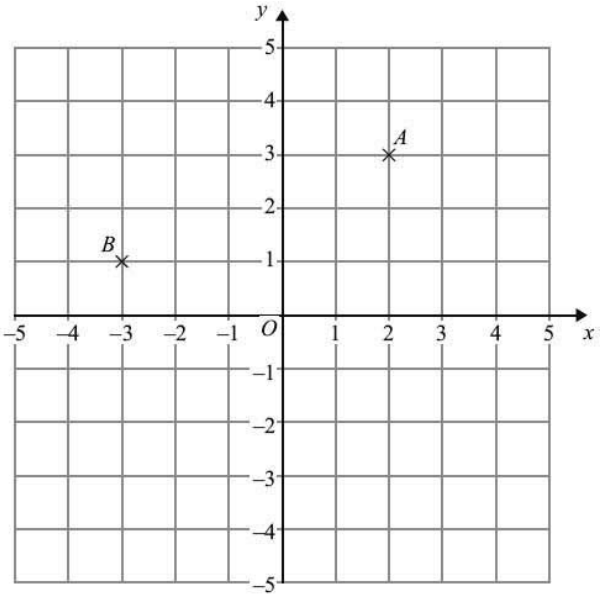
(..... , .....)

**(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)**

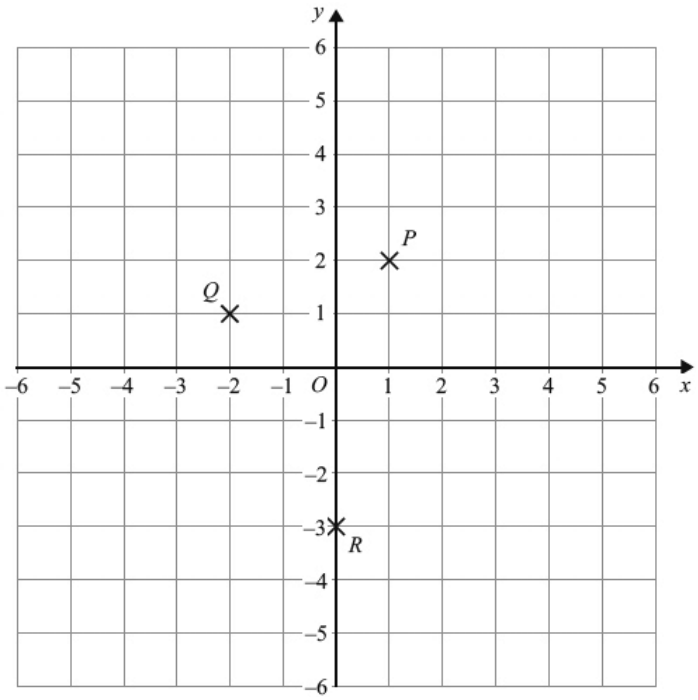
$P$, $Q$ and $R$ are three vertices of a parallelogram.

(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 $B$.

(…….. , ……..)

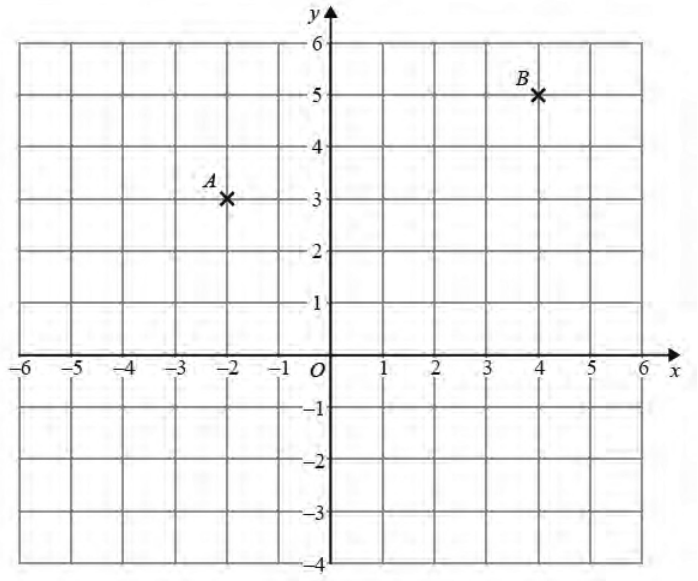
**(1)**

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

(…….. , ……..)

**(1)**

**(Total for question = 2 marks)**



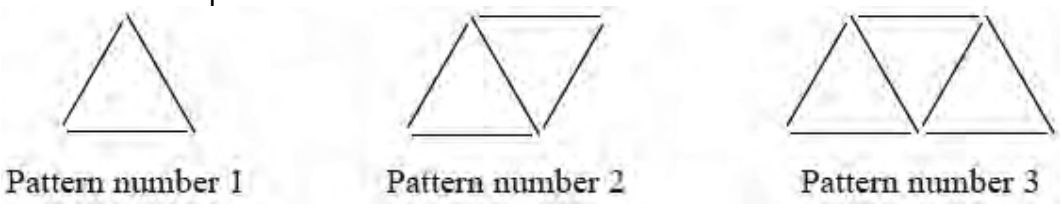
## Patterns and Sequences

**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.

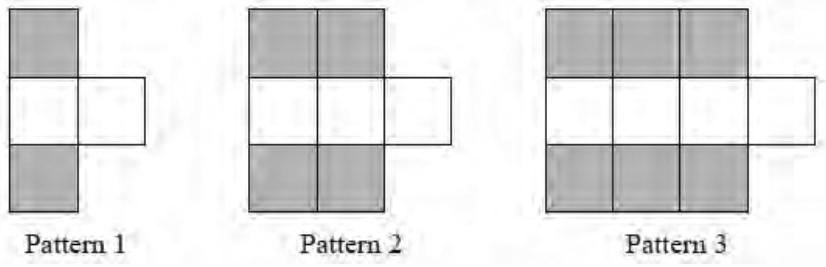
…….....

…….....

**(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.

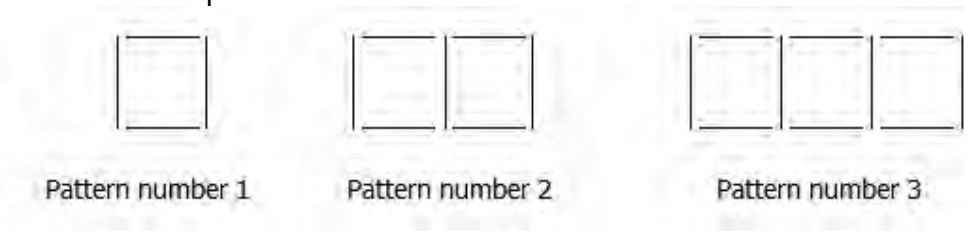
(c) Work out how many white squares there are in this Pattern.

…….....

**(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.

….....

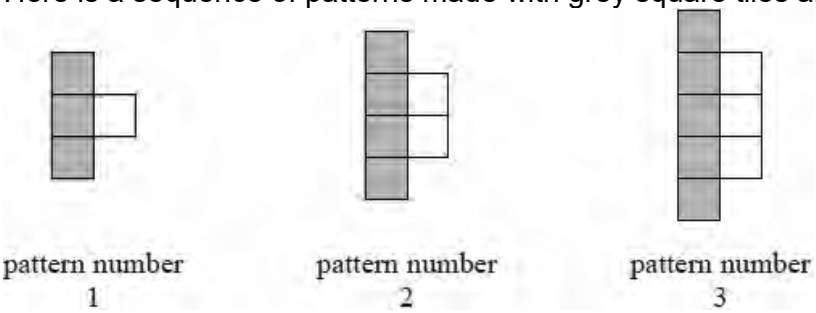
….....

….....

**(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)**

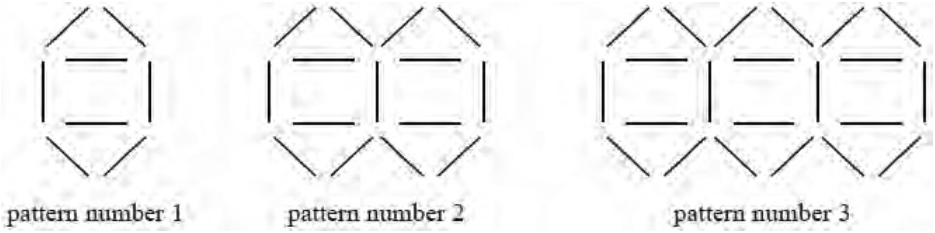
(b) Find the total number of tiles in pattern number 20

…….

**(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)**

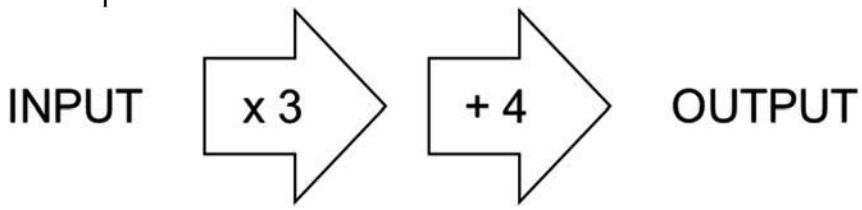
## Solving Linear Equations

**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.

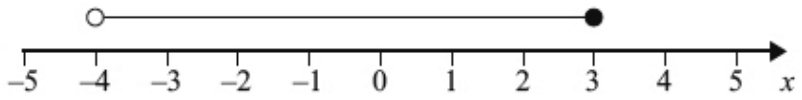
$-1 \leq n < 4$

List the possible values of $n$.

.....

**(2)**

(b)



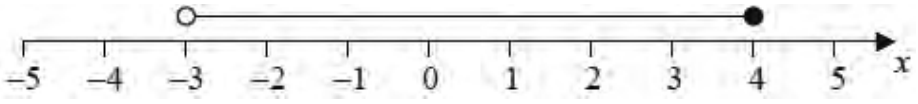

Write down the inequality shown in the diagram.

.....

**(2)**

**(Total for Question is 4 marks)**

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

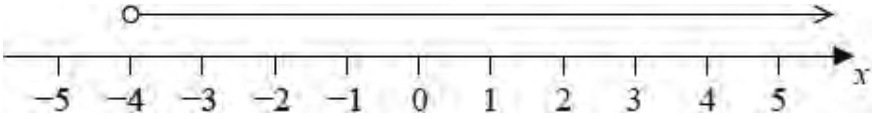



Write down the inequality.

.....

**(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 $y$.

…….....

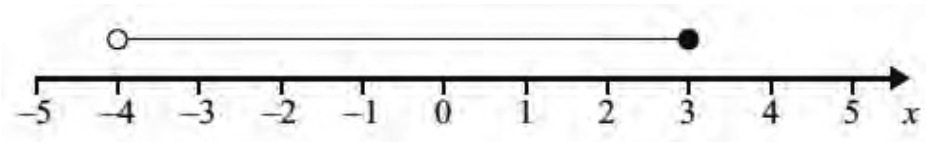
**(Total for Question is 2 marks)**

**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.** $-4 < n \leq 1$

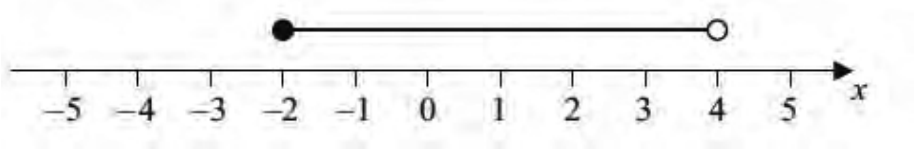
$n$ is an integer.

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

…….....

**(2)**

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



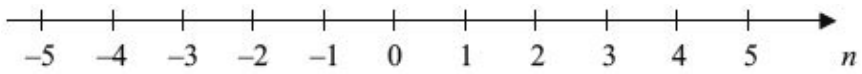

…….....

**(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)**

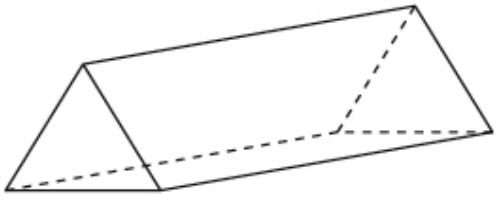
## Types of Shapes and their Properties

**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

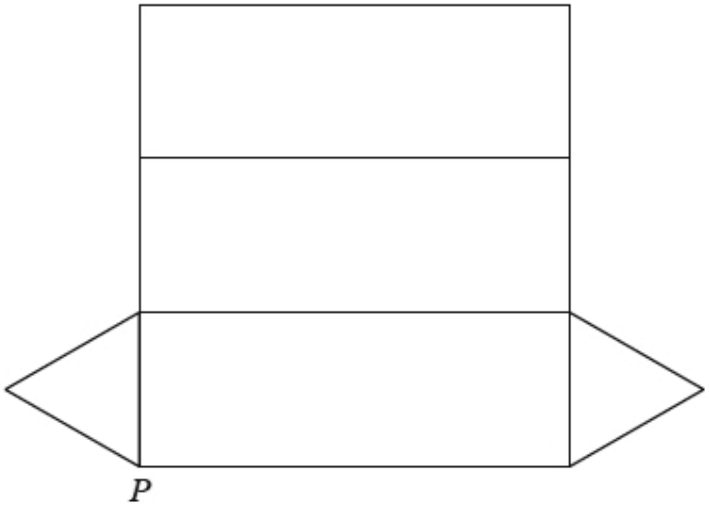
.....

(ii) the number of faces

.....

**(2)**

Here is a net of the triangular prism.



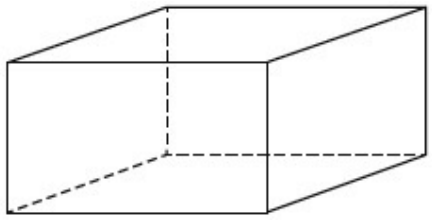

The net is folded to make the prism.
One other point meets at *P*.

(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.

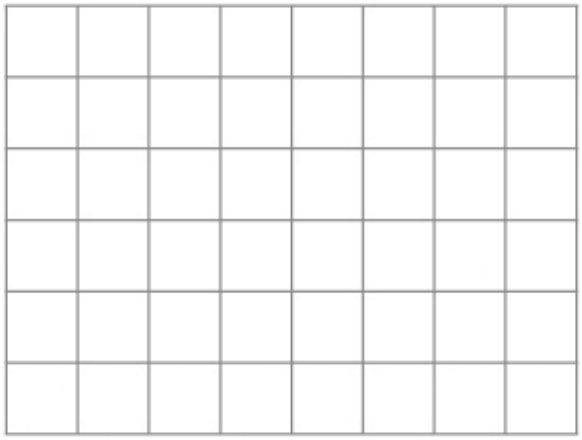
(i) A cuboid has ..... faces.

(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.

.....

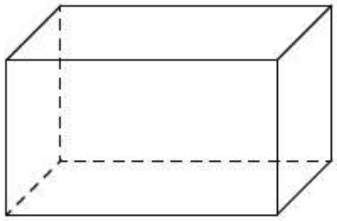
**(1)**

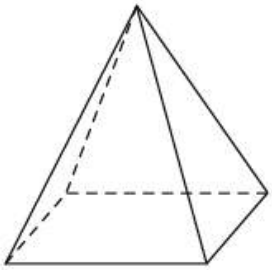
**(Total for Question is 2 marks)**

**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.



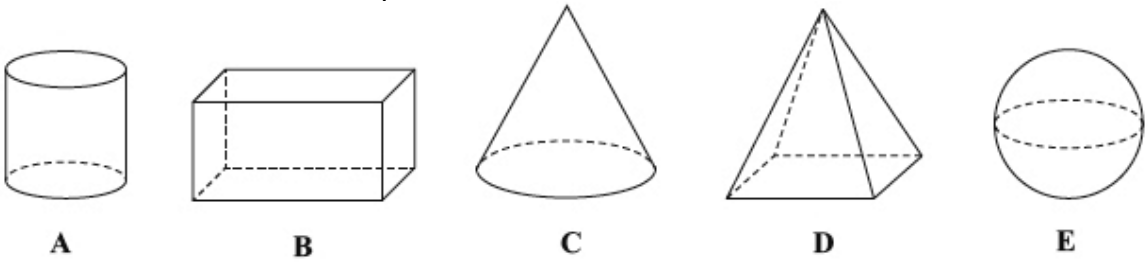


(i) .....

(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)**

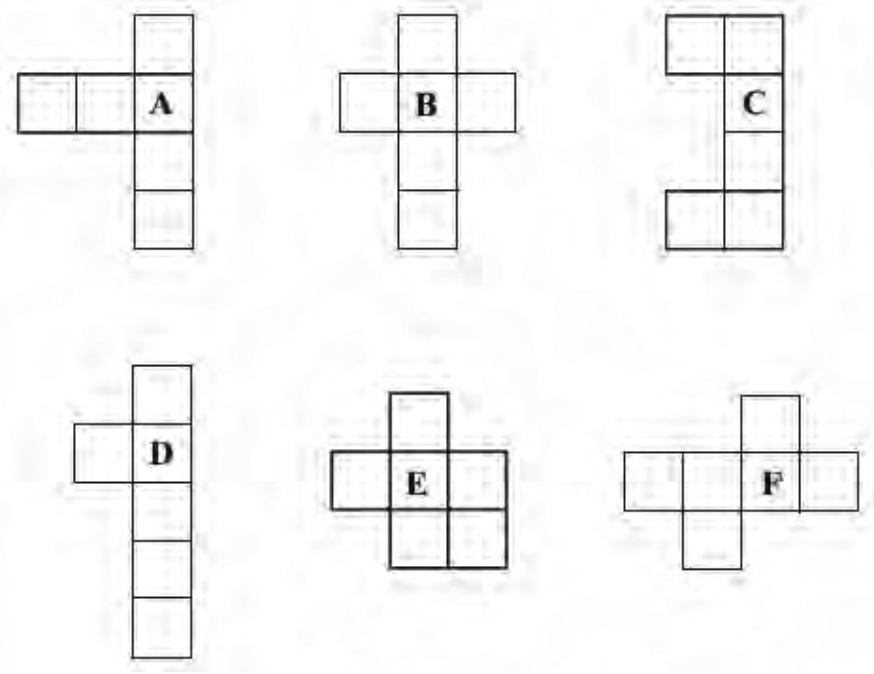
(d) How many edges does shape **D** have?

.....

**(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)**

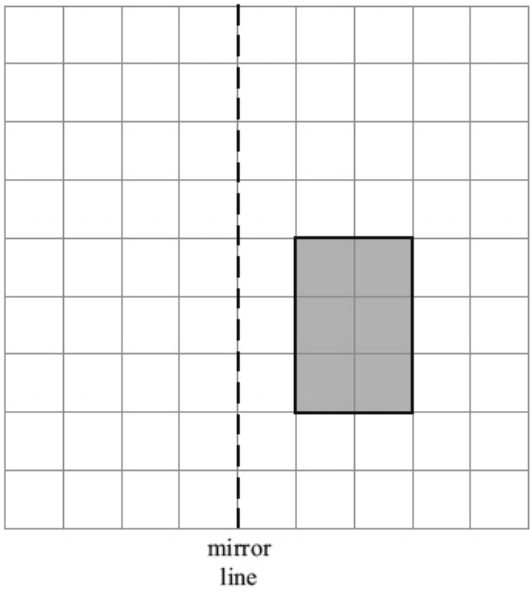
## Reflection, Rotation and Symmetry

**Things to remember:**

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

**Questions:**

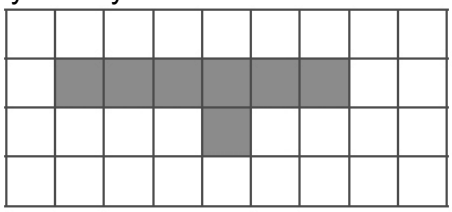
**1.** Here is a shaded shape on a grid of centimetre squares.




Reflect the shaded shape in the mirror line.

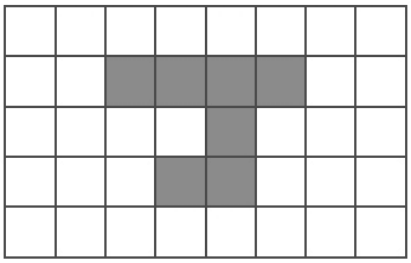
**(Total for Question is 2 marks)**

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



**(1)**

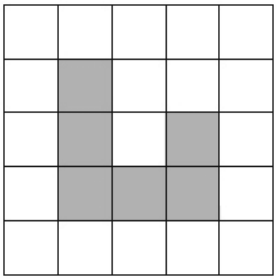
(b) On the grid below, shade in two more squares so that the completed shape has rotational symmetry of order 2



**(1)**

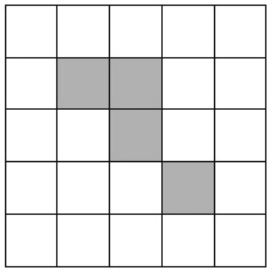
**(Total for Question is 2 marks)**

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



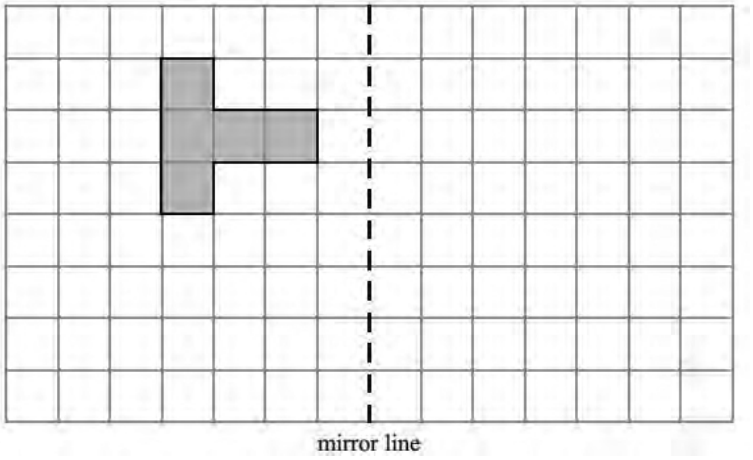
**(1)**

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



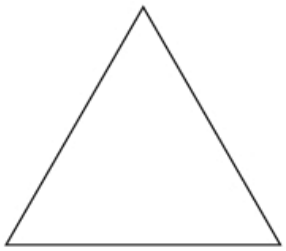
**(1)**
**(Total for Question is 2 marks)**

**4.** Reflect the shaded shape in the mirror line.




**(Total for Question is 2 marks)**

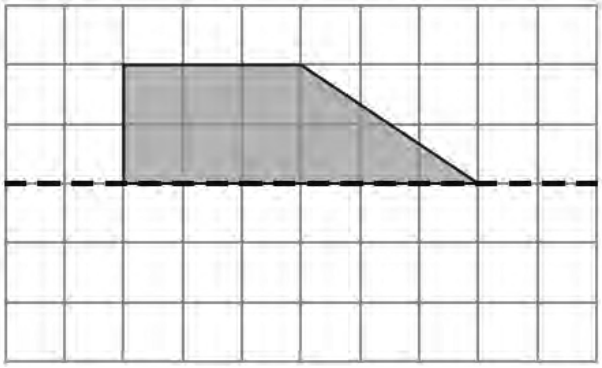
**5.** Here is an equilateral triangle.



Write down the order of rotational symmetry of the triangle.

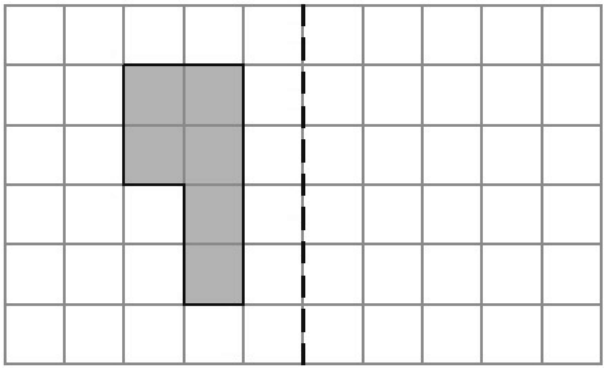
……..
**(Total for Question is 1 mark)**

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



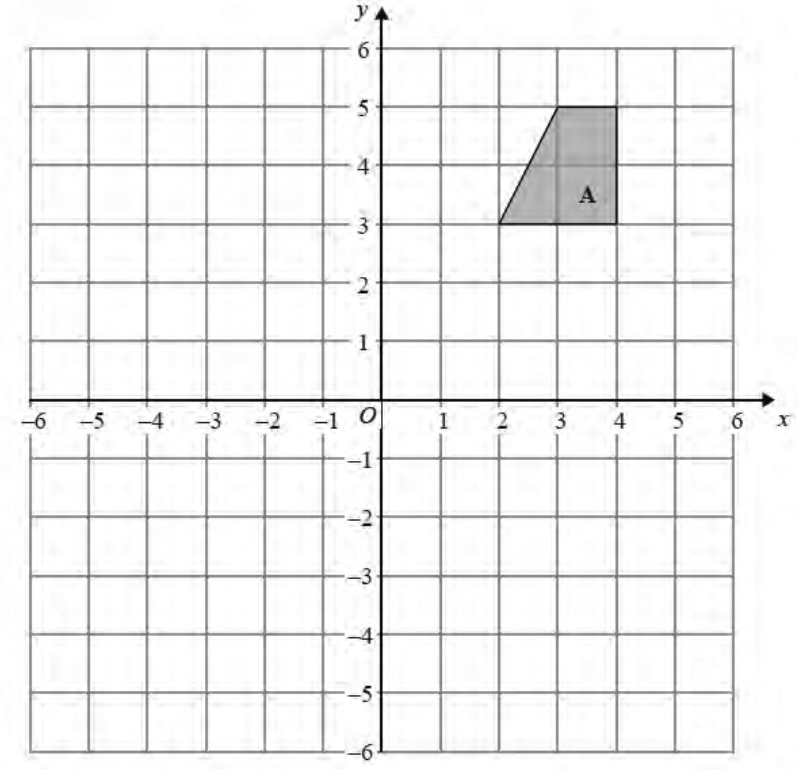
**(1)**

(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

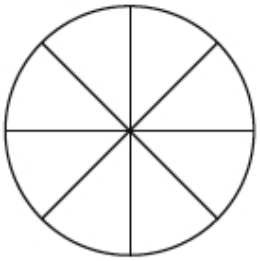


diagram **A**

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

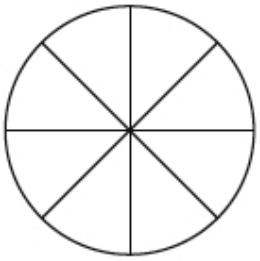


diagram **B**

**(Total for question = 2 marks)**

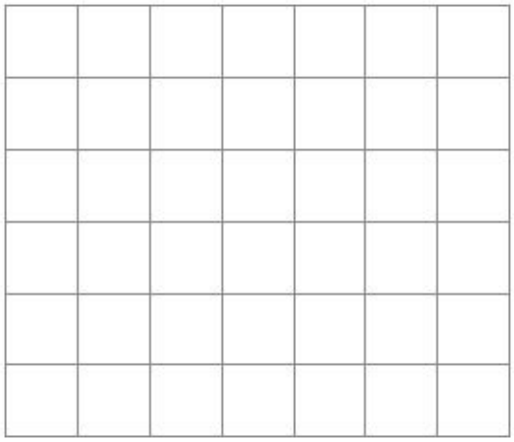
## Area and Perimeter of Rectangles and Triangles

**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 $cm^2$.

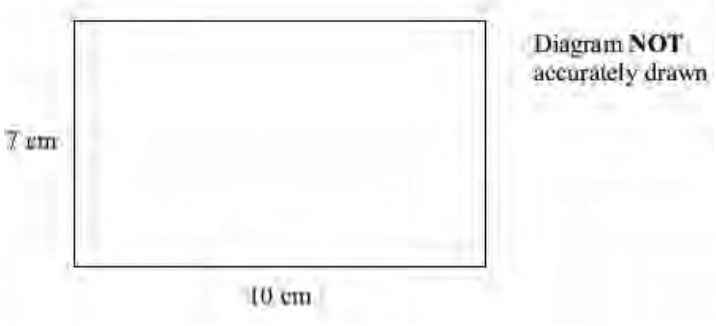


**(Total for Question is 2 marks)**

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

**(Total for Question is 2 marks)**

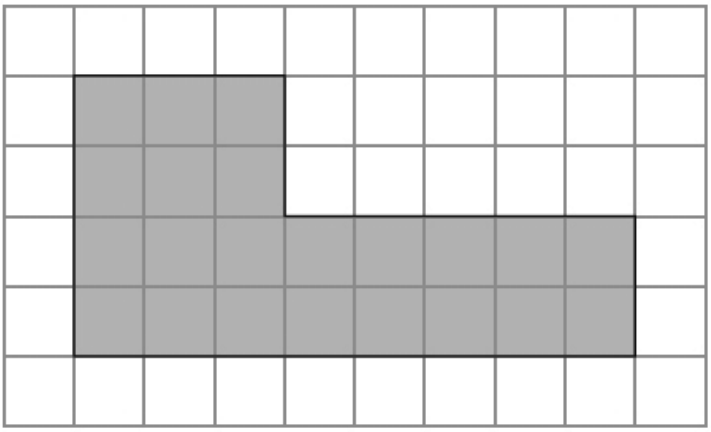
**3.** Here is a rectangle. Work out the area of this rectangle.




…..... $cm^2$

**(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.

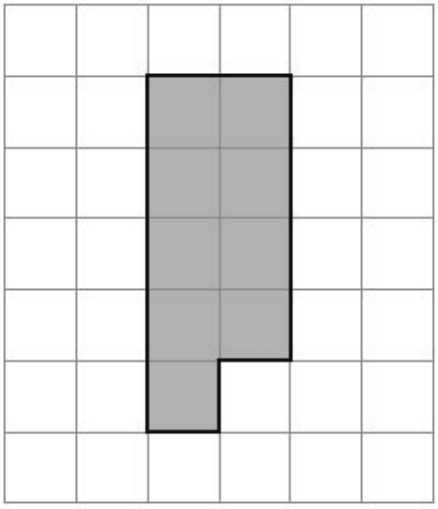
…..... $cm^2$

**(1)**

**(Total for Question is 2 marks)**

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

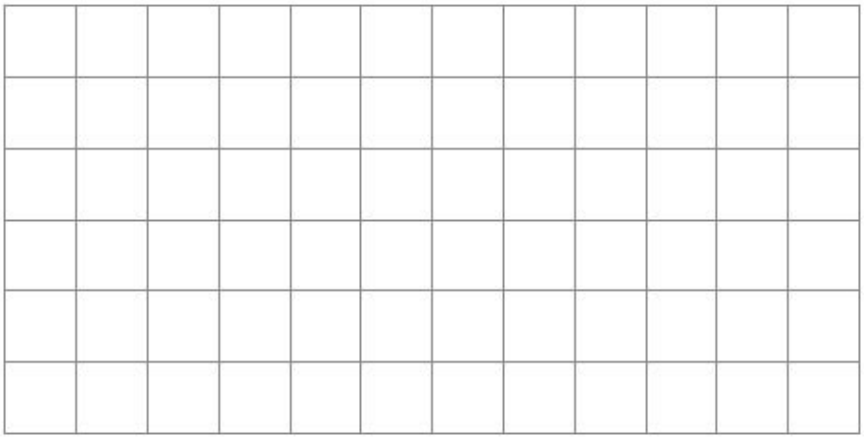
(a) Find the perimeter of the shaded shape.



…..... 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.

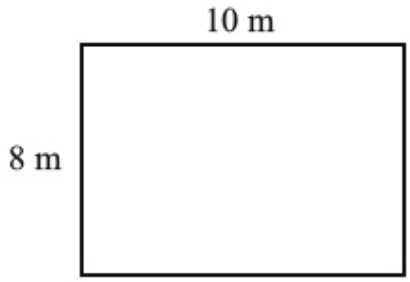



Diagram **NOT** accurately drawn

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.

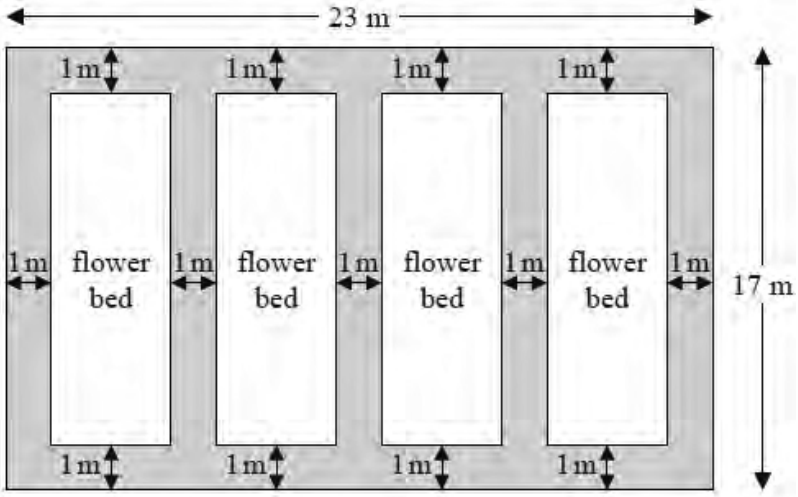


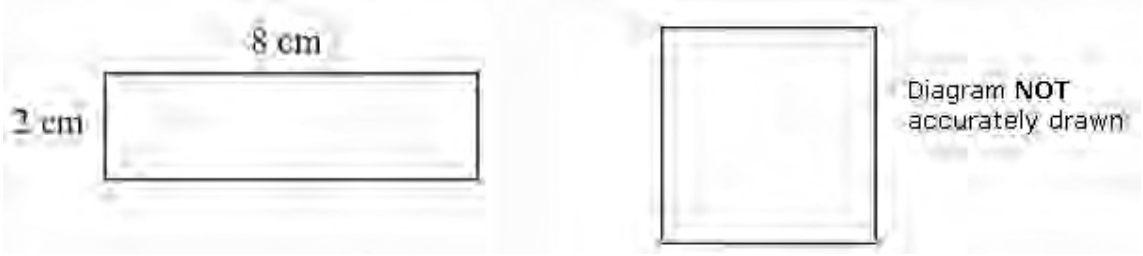

Diagram NOT accurately drawn
Each flower bed is a rectangle with the same length and the same width.
Work out the length and the width of a flower bed.

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

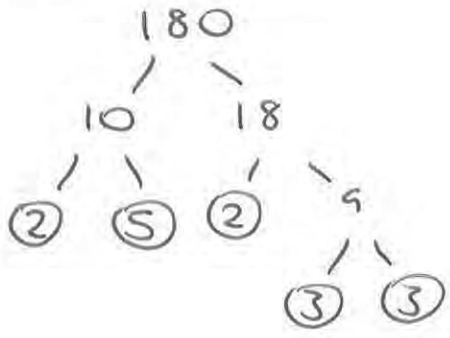
30 or 40

(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

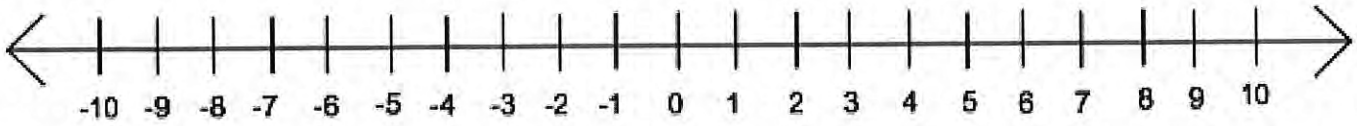
0.1, 0.106, 0.16, 0.61

**(Total for question = 1 mark)**

## Directed Numbers

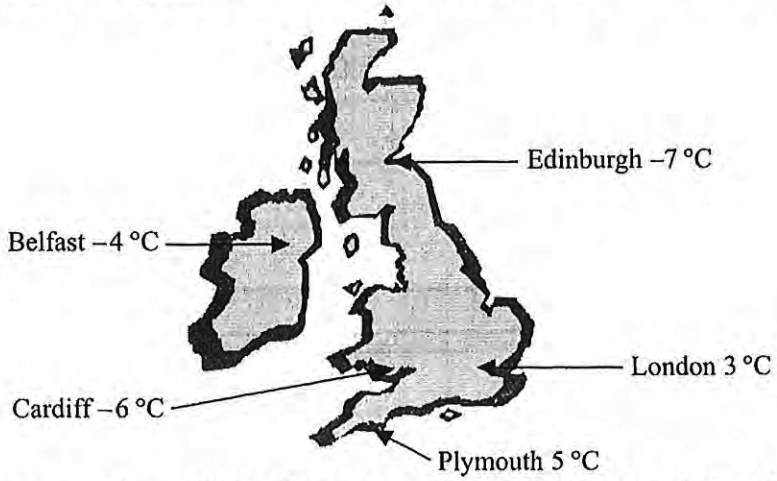
**Things to remember:**

- 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.

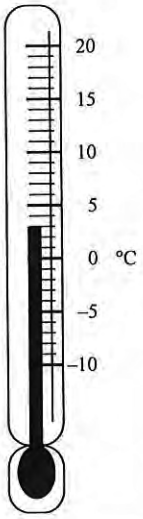
-210-20

-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...)

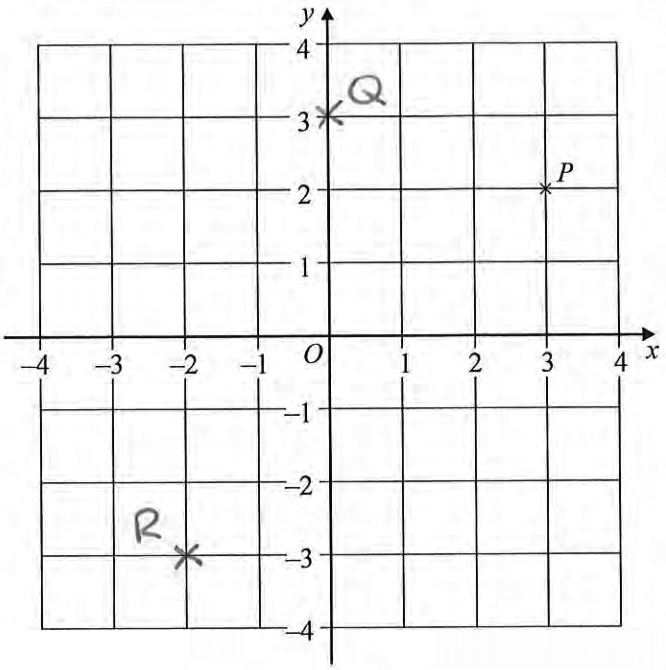
**(1)**

(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*.

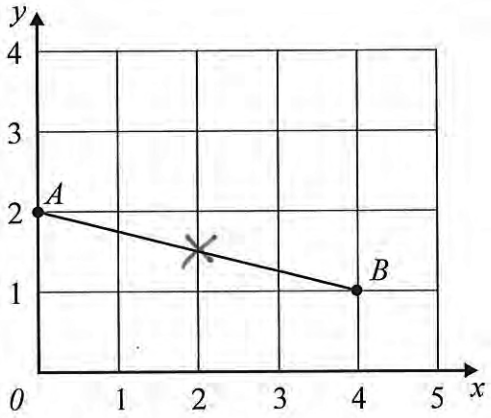
( ...4... , ...1... )

**(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...)

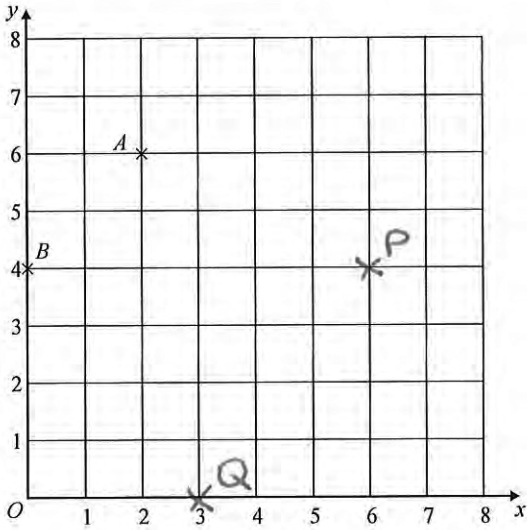
**(2)**

(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)**

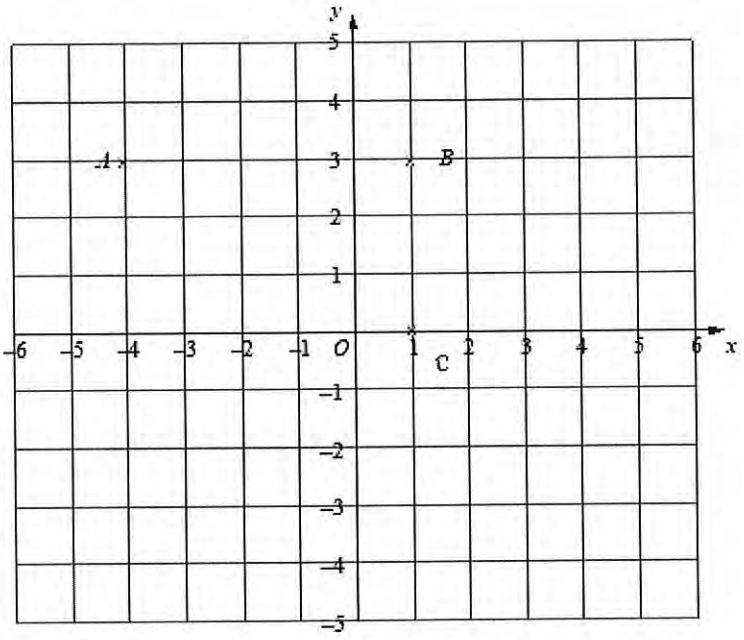
(b) (i) On the grid, mark the point $D$ so that $ABCD$ is a rectangle.

(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 $B$.

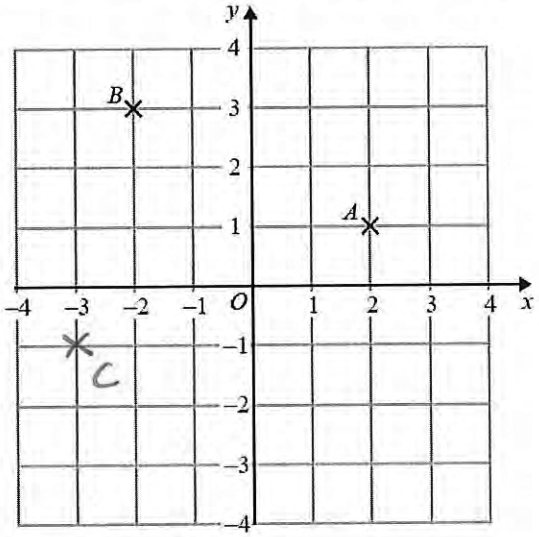
(−2 , 3)

**(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 $B$.

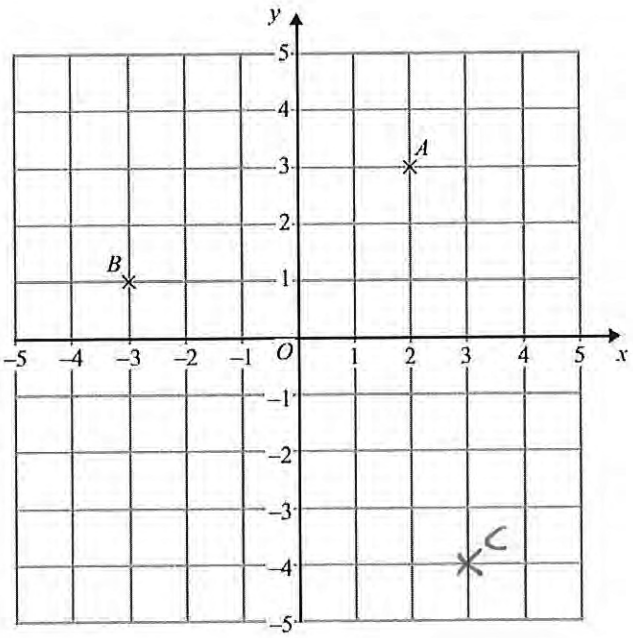
(−3 , 1)

**(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.

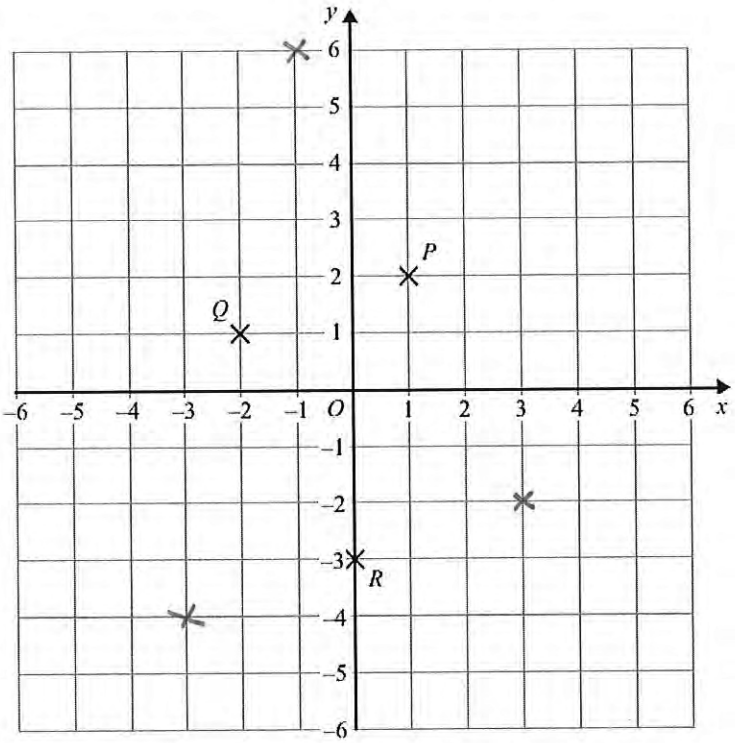
(c) Write down the coordinates of the fourth vertex of this parallelogram.

(..... , .....)

**(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 .....)

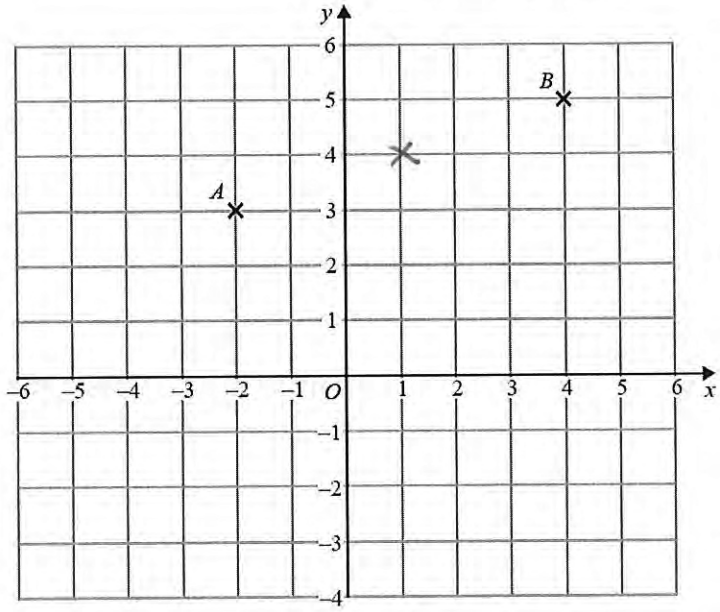
**(1)**

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

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

**(1)**

**(Total for question = 2 marks)**



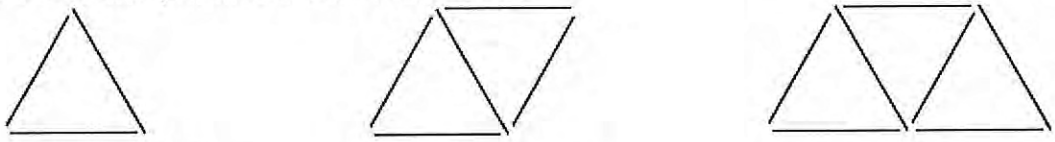
## Patterns and Sequences

**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.

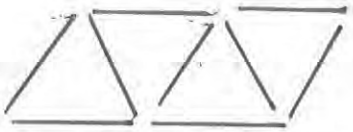
**Questions:**

**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.

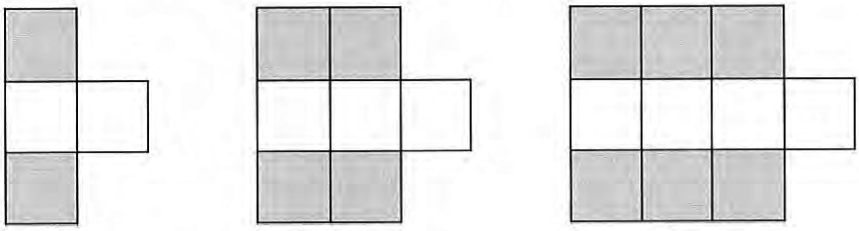
(c) Explain why.

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

**(1)**

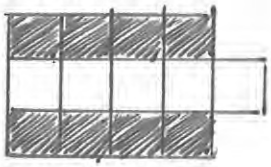
**(Total for Question is 3 marks)**

**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

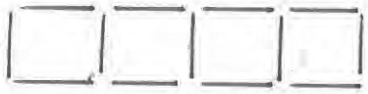
**(2)**

**(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

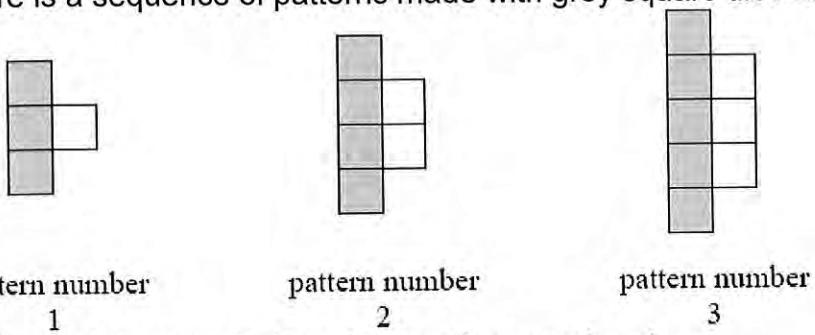
or

$n^{th}$ 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)**

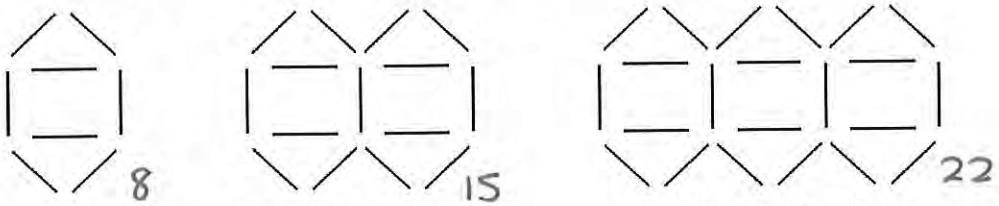
(b) Find the total number of tiles in pattern number 20

42

**(2)**

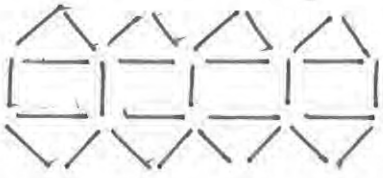
**(Total for question is 3 marks)**

**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)**

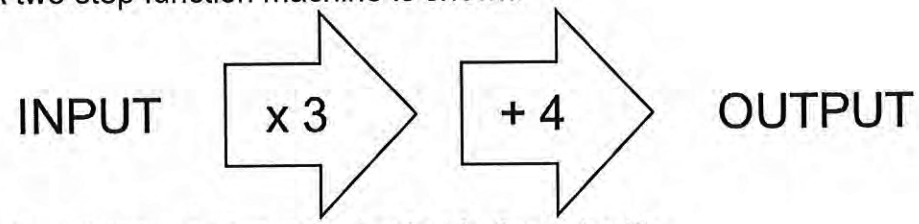
## Solving Linear Equations

**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:**

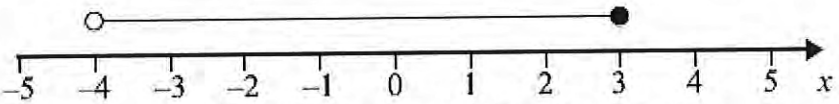
**1.** $-2 < n \leq 3$
$n$ is an integer.
Write down all the possible values of $n$.

.....−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)**

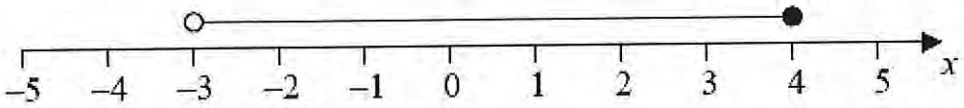
(b)




Write down the inequality shown in the diagram.

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

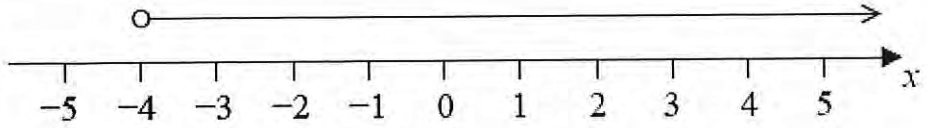
**3.** Here is an inequality, in $x$, shown on a number line.




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 $y$.

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

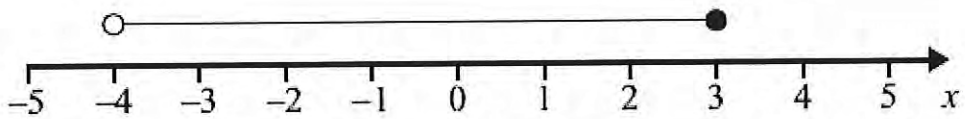
**(Total for Question is 2 marks)**

**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.** $-4 < n \leq 1$

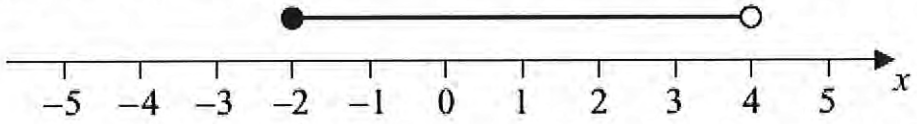
$n$ is an integer.

(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.



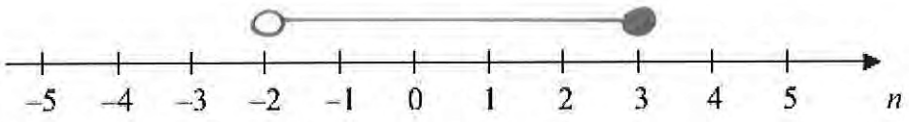

$-2 \leq x < 4$

**(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)**

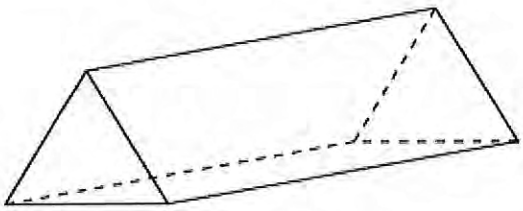
## Types of Shapes and their Properties

**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

.....

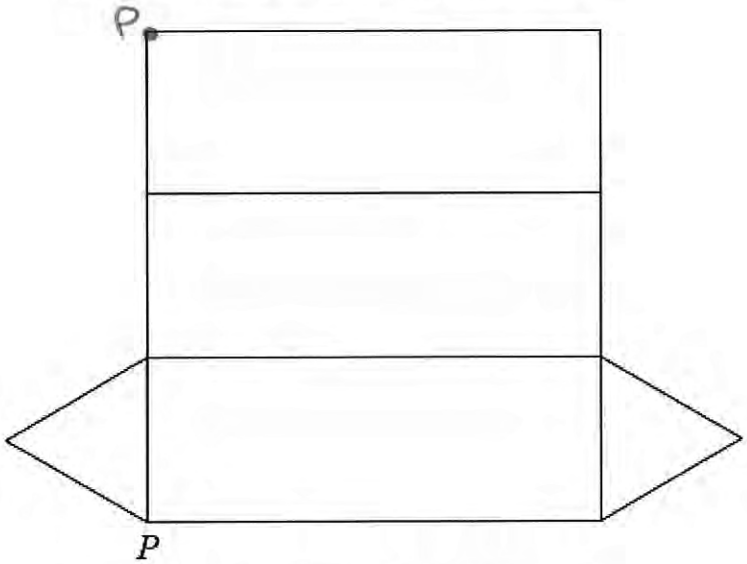
(ii) the number of faces

5

.....

**(2)**

Here is a net of the triangular prism.



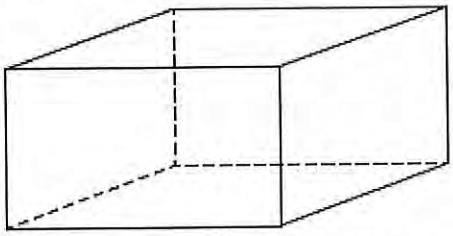

The net is folded to make the prism.
One other point meets at *P*.

(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.

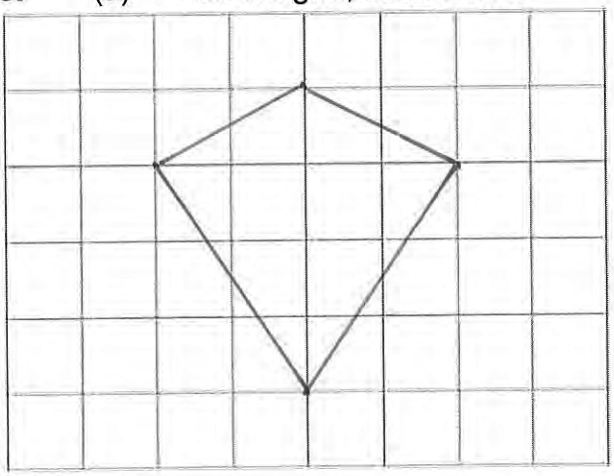
(i) A cuboid has ..... 6 ..... faces.

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

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

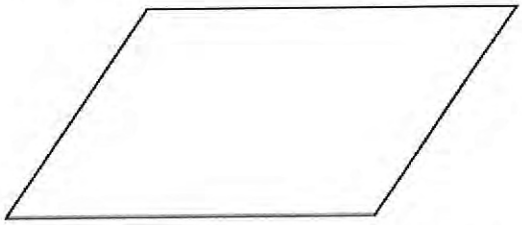
**(Total for Question is 3 marks)**

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



**(1)**

(b) Here is a quadrilateral.



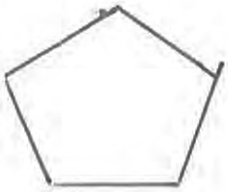
Write down the special name of this quadrilateral.

..... Parallelogram .....

**(1)**

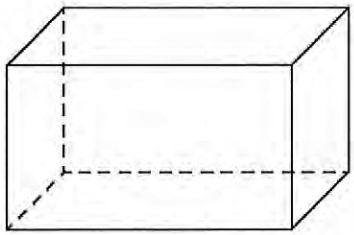
**(Total for Question is 2 marks)**

**4.** Draw a sketch of a pentagon.

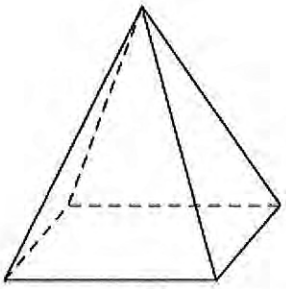


**(Total for Question is 1 marks)**

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



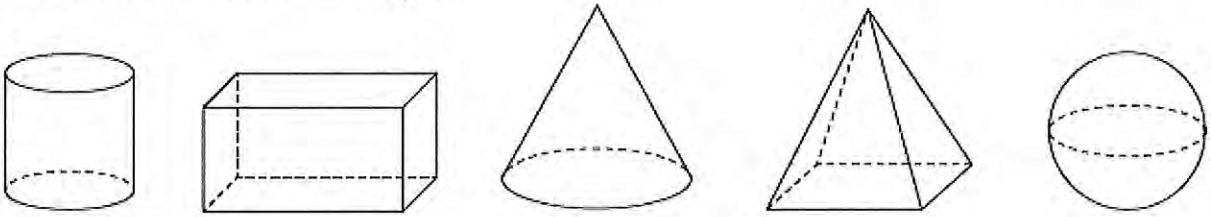
(i) Cuboid



(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)**

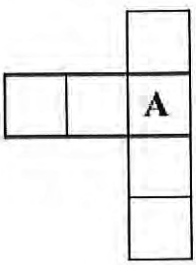
(d) How many edges does shape **D** have?

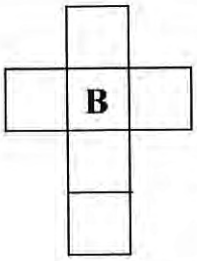
8

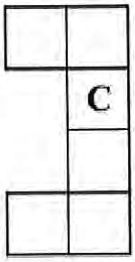
**(1)**

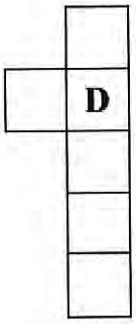
**(Total for Question is 4 marks)**

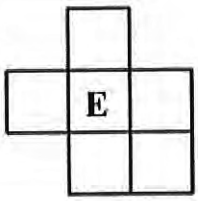
**7.** Here are some shapes made from squares.

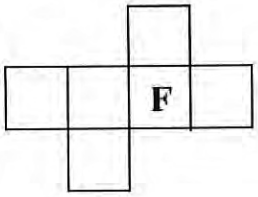



Two of these shapes are nets of a cube.
Which two shapes?

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)**

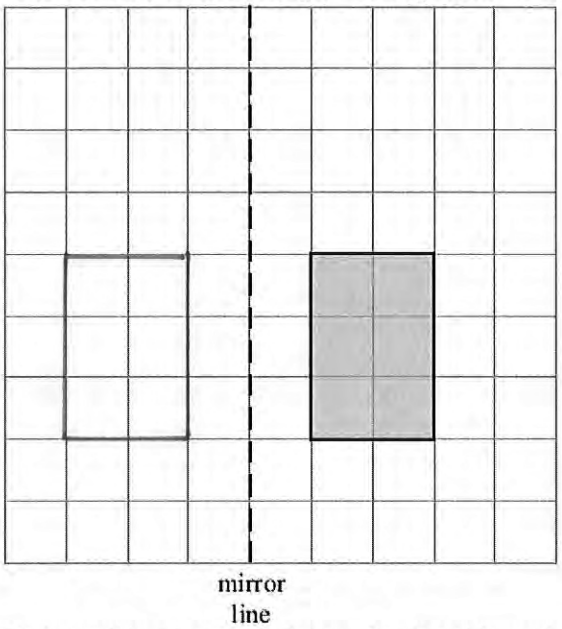
## Reflection, Rotation and Symmetry

**Things to remember:**

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

**Questions:**

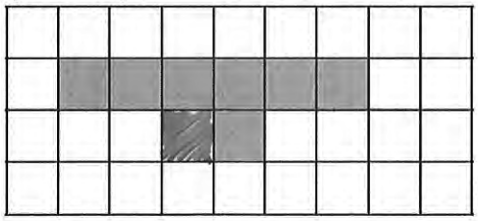
**1.** Here is a shaded shape on a grid of centimetre squares.




Reflect the shaded shape in the mirror line.

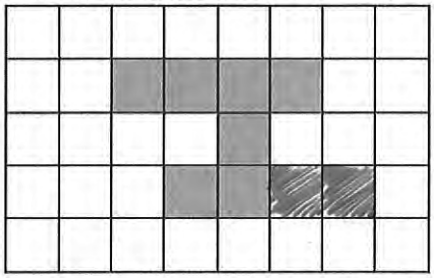
**(Total for Question is 2 marks)**

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



**(1)**

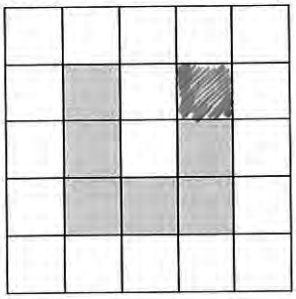
(b) On the grid below, shade in two more squares so that the completed shape has rotational symmetry of order 2



**(1)**

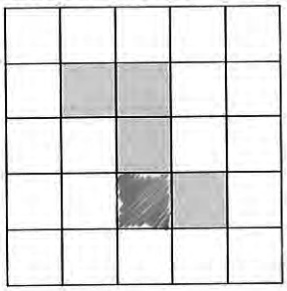
**(Total for Question is 2 marks)**

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



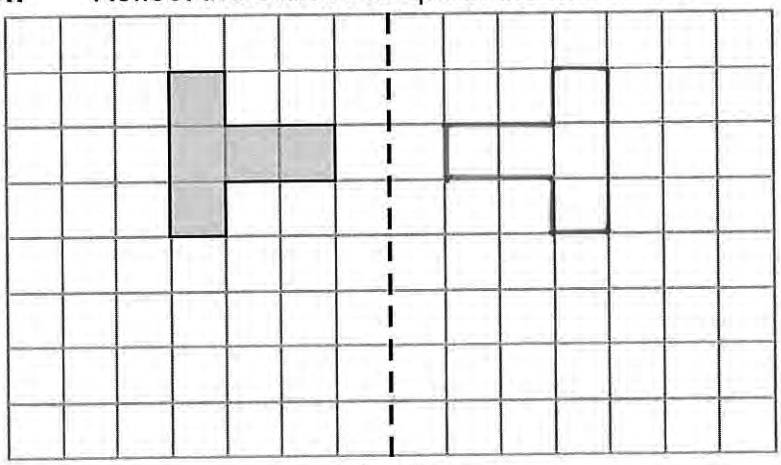
**(1)**

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



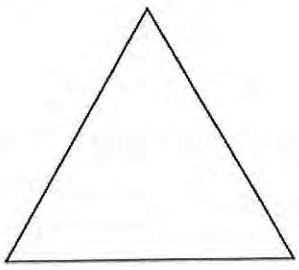
**(1)**
**(Total for Question is 2 marks)**

**4.** Reflect the shaded shape in the mirror line.




**(Total for Question is 2 marks)**

**5.** Here is an equilateral triangle.

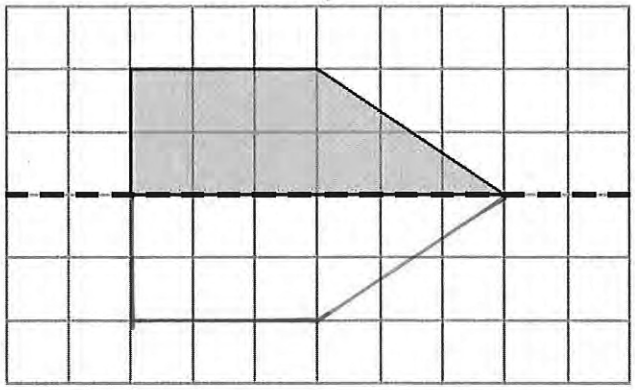


Write down the order of rotational symmetry of the triangle.

..... 3 .....

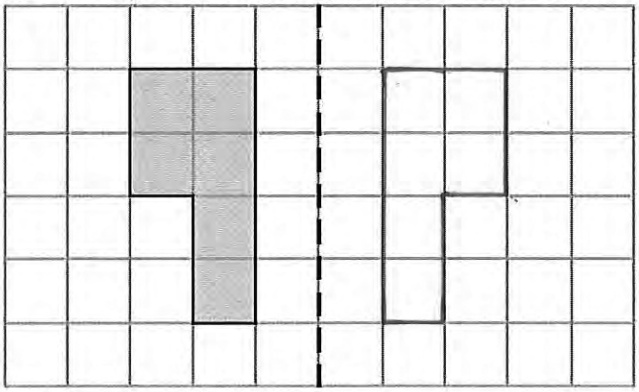
**(Total for Question is 1 mark)**

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



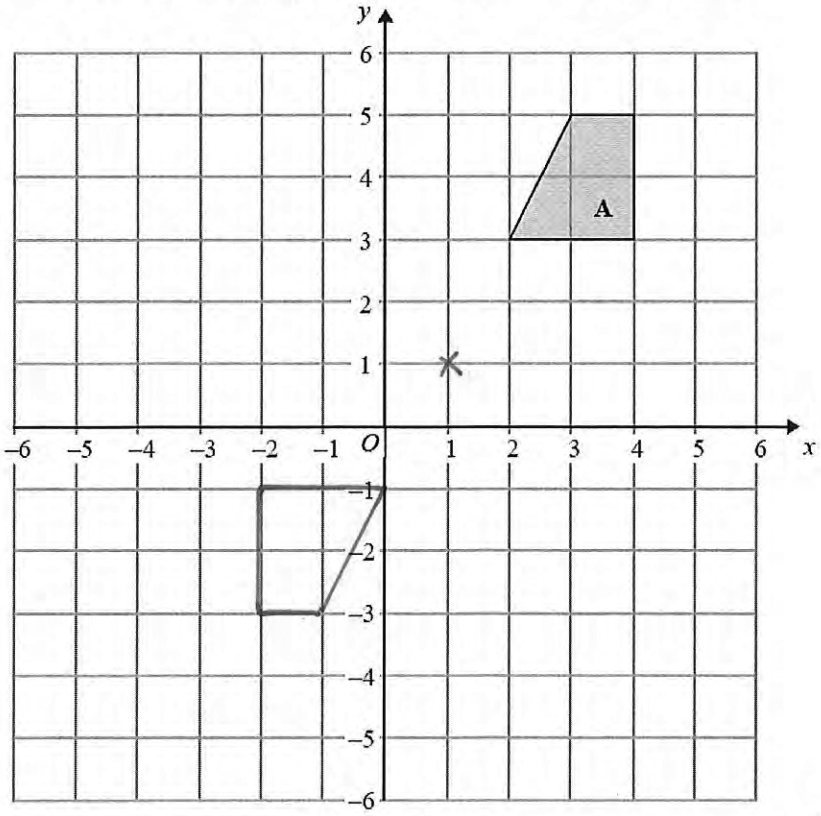
**(1)**

(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

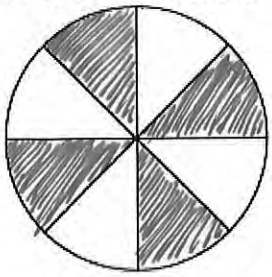


diagram **A**

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

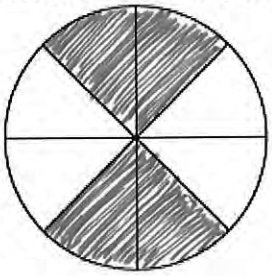


diagram **B**

**(Total for question = 2 marks)**

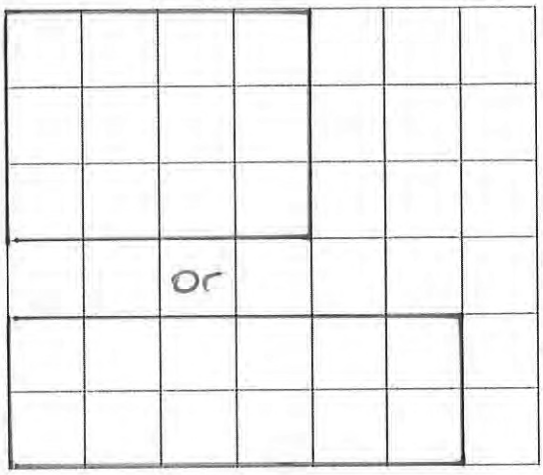
## Area and Perimeter of Rectangles and Triangles

**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

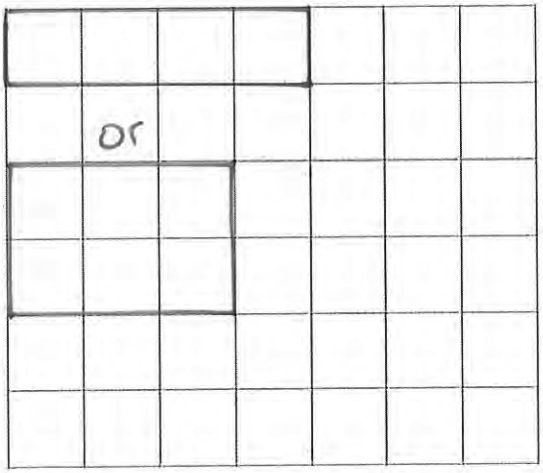
**Questions:**

**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.

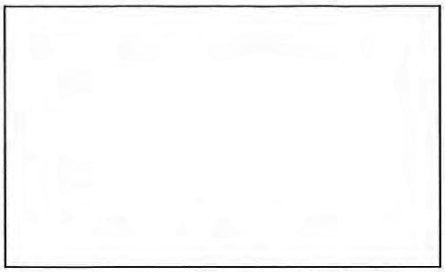


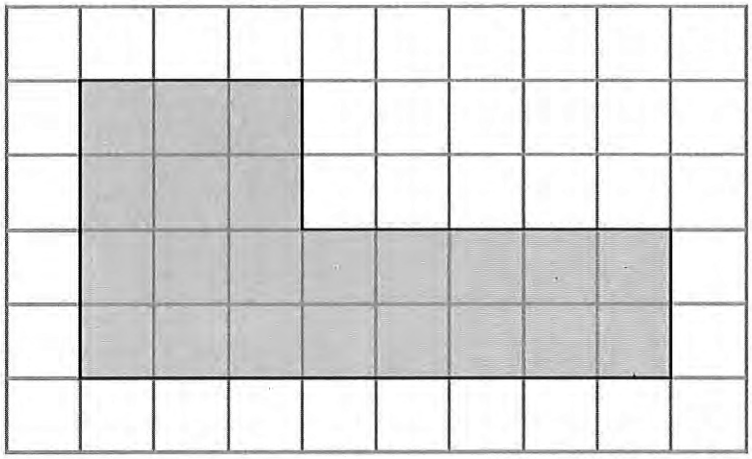

Diagram **NOT** accurately drawn

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.

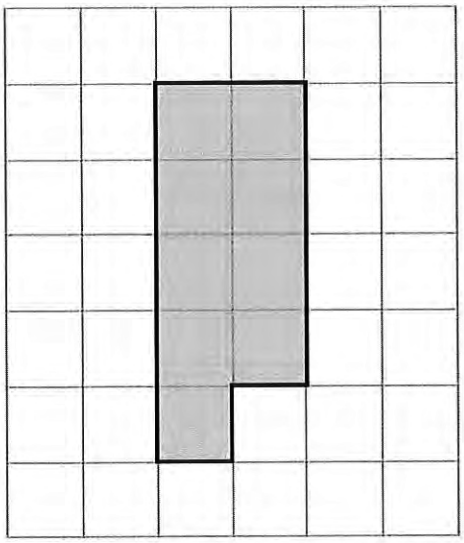
..... 22 ..... $cm^2$

**(1)**

**(Total for Question is 2 marks)**

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

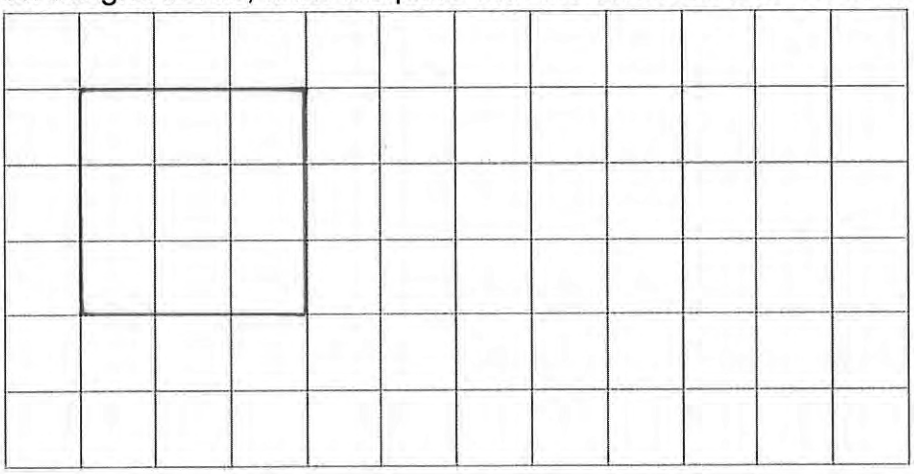
(a) Find the perimeter of the shaded shape.



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.

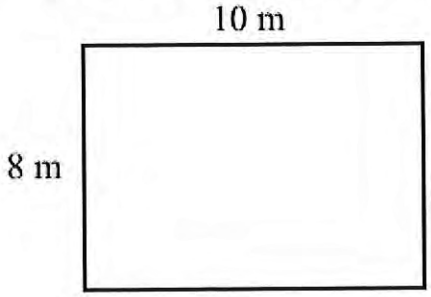



Diagram **NOT** accurately drawn

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?

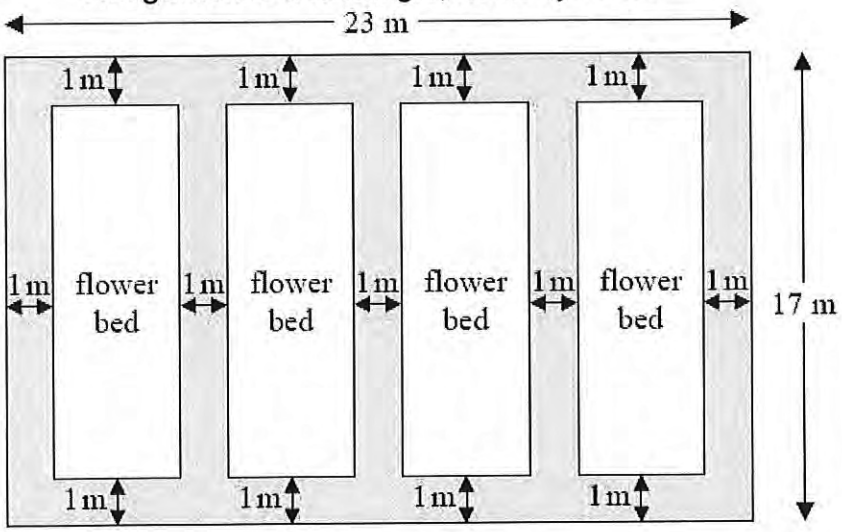
Perimeter : $2 \times (8 + 10) = 36$m

$36 \times £1.50 = £54$

£ 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

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

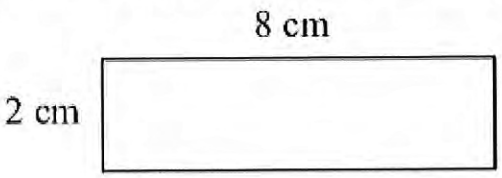
Diagram NOT accurately drawn
Each flower bed is a rectangle with the same length and the same width.
Work out the length and the width of a flower bed.

length = 15 m

width = 4.5 m

**(Total for Question is 3 marks)**

**8.** The diagram shows a rectangle and a square.



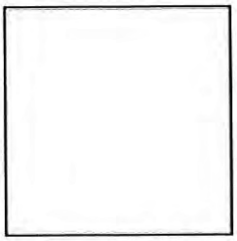



Diagram **NOT** accurately drawn

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

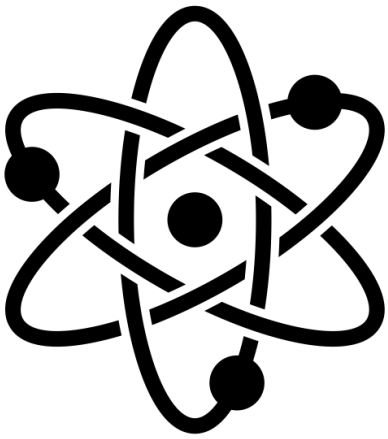
$20 \div 4 = 5$

.....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 test yourself using the look/cover/check method. If you want to and are able to, there is an extension activity using chocolate for rock modelling.



# Year 7 – Term 1 Science

PRIDE THROUGH SUCCESS



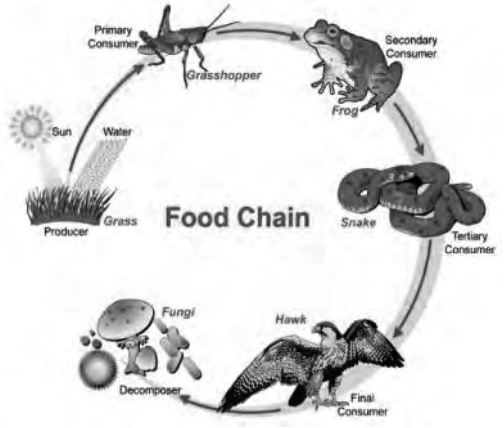
| | |
|---|---|
| **Species** | Related organisms capable of reproduction. |
| **Characteristic** | A distinguishing quality, trait or feature of an individual |
| **Natural Selection** | The natural process whereby the best-adapted individuals survive longer, have more offspring and thereby spread their characteristics. |
| **Biotic** | Living elements of an ecosystem, such as plants and animals. |
| **Abiotic** | Abiotic factors are non-living environmental factors that can affect the organisms in ecosystems such as climate, temperature, water, and soil type. |
| **Ecosystem** | A community of animals, plants and microorganisms, together with the habitat where they live. |
| **Habitat** | A place where plants, animals and microorganisms live. |
| **Community** | All the organisms that live in a habitat (plants and animals). |
| **Biodiversity** | The wide range of animals and plants in the world. |
| **Sedimentary** | *Sedimentary rocks are formed from the broken remains of other rocks* |
| **Igneous** | **Igneous rocks are formed from molten rock** that has cooled and solidified. |
| **Metamorphic** | **Metamorphic rocks are formed from other rocks that are changed because of heat or pressure**. |
| **Lava** | Magma that has been brought to the surface |
| **Weathering** | Process where rock gradually wear away either by physical or |
| **Compaction** | Process in which layers of sediments are squeezed together and any water mixed in is forced out. |
| **Heliocentric** | Model of the solar system with the Sun at the centre |
| **Orbit** | The curved motion of a spacecraft or clelestial body around another |
| **Gravity** | The force which attracts an object to anyphysical entity having mass |

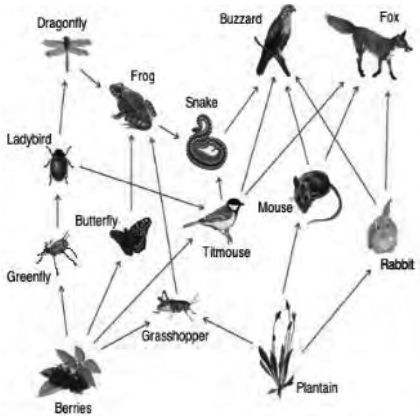
| | |
|---|---|
| **Niche** | Specific role played by a specific species in an ecosystem |
| **Food Chain** | Flow of energy through an ecosystem |
| **Food Web** | Lots of interlinked food chains |
| **Bioaccumulation** | Build up of toxins through a food chain |
| **Producer** | Makes own food (energy) (eg Plant) |
| **Consumer** | Gets energy from consuming other organisms |
| **Herbivore** | Only eats plants (rabbit) |
| **Carnivore** | Only eats meat (Lion) |
| **Omnivore** | Eats both plants and meat (Humans/Bears) |
| **Intrusive** | **Intrusive igneous rocks form from magma** that cooled slowly, deep underground |
| **Extrusive** | **Extrusive igneous rocks form from magma that erupted onto the surface as lava** , where it cooled quickly. |
| **Magma** | Molten (liquid) rock found inside the Earth |
| **Erosion** | Movement of the broken pieces away from the site of weathering |
| **Sedimentation** | Laying down or deposition of broken fragments of rocks |
| **Ore** | Naturally occurring rocks that contain metals or metal compounds in sufficient amounts to make it worthwhile extracting them. |
| **Geocentric** | Model of the solar system with the Earth at the centre |
| **Elliptical** | Oval-shaped |
| **Axis** | An imaginary line around which a planet rotates |
| **Seasons** | Variation in the conditions on Earth throughout the year |

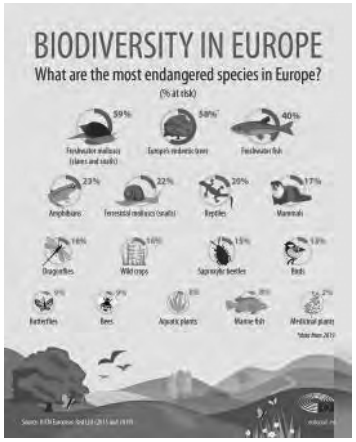
# Year 7 – Life processes (part 2)

PRIDE THROUGH SUCCESS

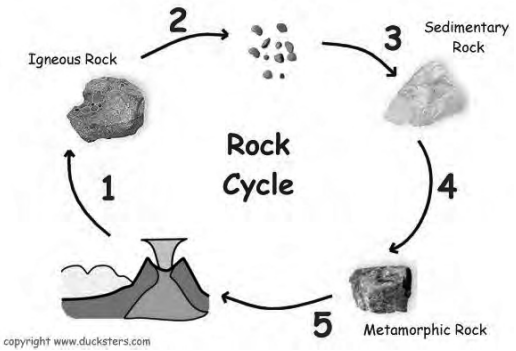


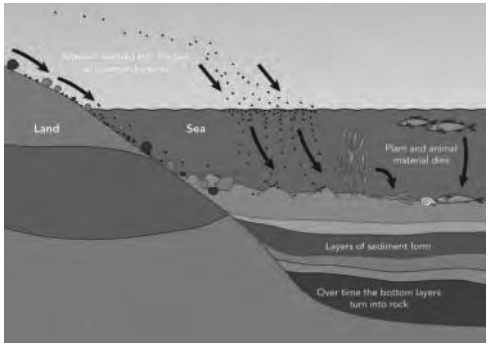


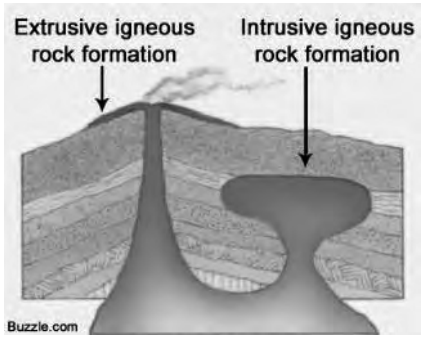



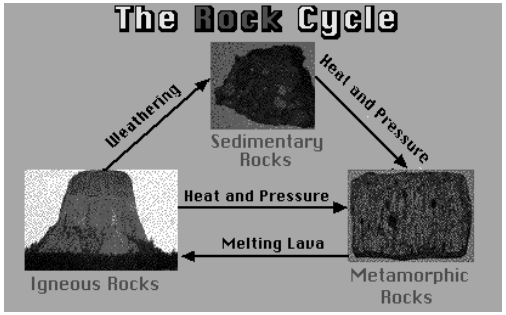



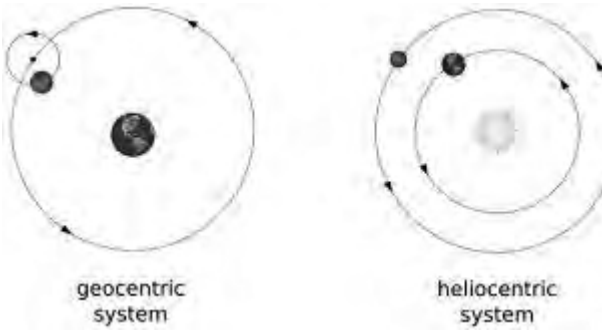


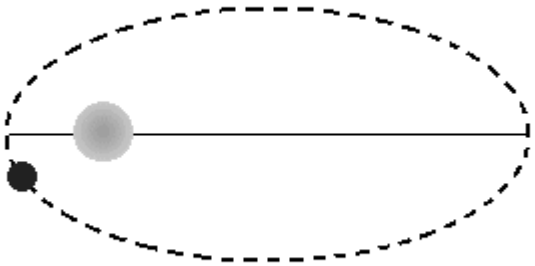


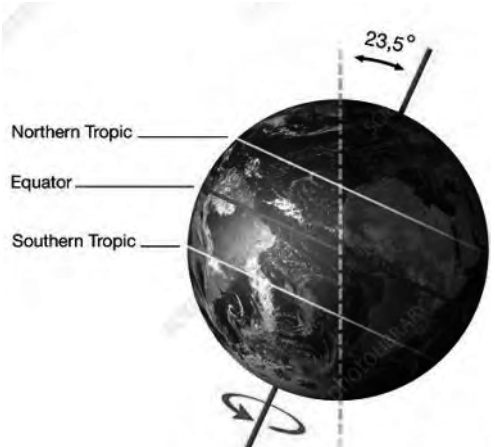





# Rock Cycle Modelling with Chocolate

**Instructions:**

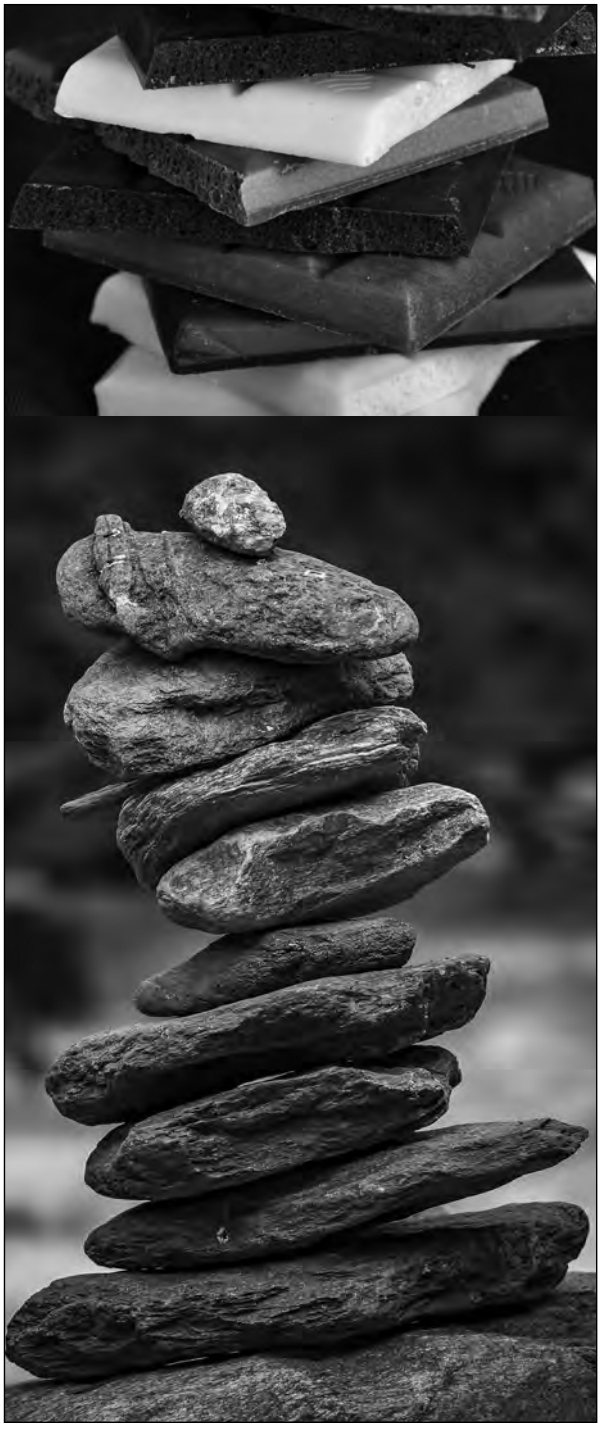
1. Carefully shave a piece of each type of chocolate onto a tinfoil square using the butter knife. Take care to use the knife safely to avoid hurting yourself or someone else.
2. After making a small pile of shavings of each type of chocolate, fold the tinfoil into a packet. Take turns in your pair to hit the packet with your fist. This action represents compaction and cementation of sediment.
3. Open the packet and record what you see on the worksheet. This represents sedimentary rock.
4. Refold the packet and take turns holding the packet in your hands and pressing firmly for 20-30 seconds. This represents sedimentary rock being heated and put under pressure by the earth.
5. Reopen the packet and record what you see on the worksheet. This represents metamorphic rock.
6. Refold the packet again. Carefully place the packet into a beaker of hot water and start the stopwatch. This represents rocks underground being melted into molten rock (magma).
7. After one minute, remove the packet from the hot water using tongs. Wrap the packet in a tea towel or paper towels and take turns applying pressure on the warm packet. Allow the packet to cool. This represents magma cooling.
8. Reopen the packet and record what you see on the worksheet. This represents igneous rock.

**Extension:**

Once you have recorded what you saw at each stage in the process, you can crumble up your igneous rock and start the rock cycle again.

**You will need:**

- butter knife
- white, milk and dark chocolate
- 10cm x 10cm square of tinfoil
- stopwatch
- access to hot water (kettle)
- beaker
- tongs
- tea towel or paper towels



# Rock Cycle Modelling **Worksheet**

1. Record what you see when you open your tinfoil packet for the first time.

   What type of rock does it represent?

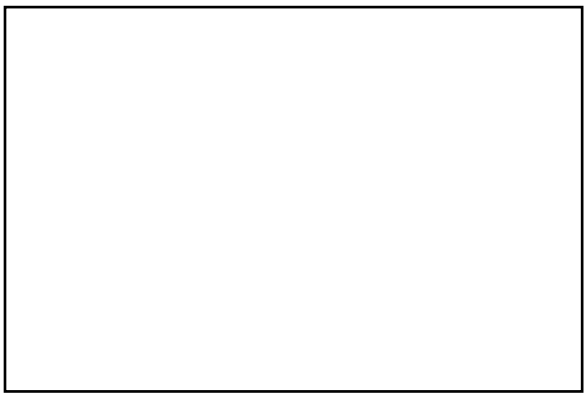
   _____

   Explain how this type of rock is formed.

   _____

   _____

   _____



2. Open your packet again. Record what you see.

   What type of rock does it represent?

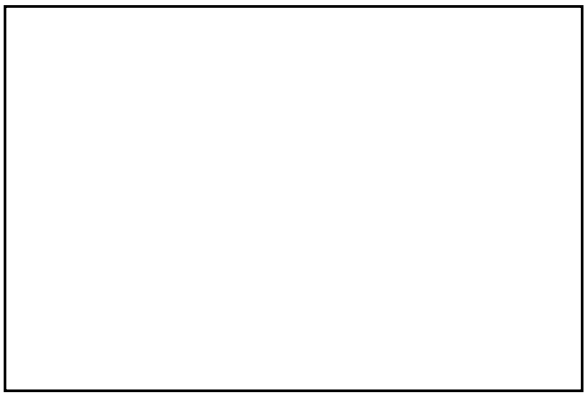
   _____

   Explain how this type of rock is formed.

   _____

   _____

   _____



3. Open the packet for the final time. Record what you see.

   What type of rock does it represent?

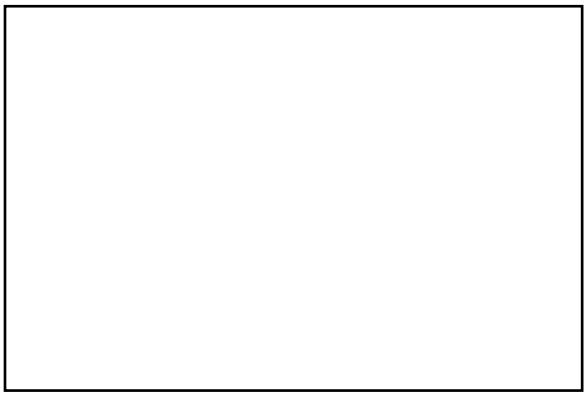
   _____

   Explain how this type of rock is formed.

   _____

   _____

   _____



4. Describe the processes represented through the models you created. Try to use all the keywords.

| | | | | | |
|---|---|---|---|---|---|
| erosion | weathering | cementation | compaction | heat | pressure |
| magma | igneous | sedimentary | metamorphic | melting | cooling |

# Rock Cycle Modelling **Answers**

1. Record what you see when you open your tinfoil packet for the first time.

   What type of rock does it represent?

   **sedimentary**

   Explain how this type of rock is formed.

   **Small pieces of sediment are compacted and cemented together.**

2. Open your packet again. Record what you see.

   What type of rock does it represent?

   **metamorphic**

   Explain how this type of rock is formed.

   **Sedimentary rock is heated and put under pressure by the earth.**

3. Open the packet for the final time. Record what you see.

   What type of rock does it represent?

   **igneous**

   Explain how this type of rock is formed.

   **Rocks underground are melted by the high temperatures. Molten rock (magma) cools and solidifies.**

4. Describe the processes represented through the models you created. Try to use all the keywords.

| | | | | | |
|---|---|---|---|---|---|
| erosion | weathering | cementation | compaction | heat | pressure |
| magma | igneous | sedimentary | metamorphic | melting | cooling |

- **Rocks are weathered, causing small pieces of rock to break off. The rock particles are moved by erosion and deposited in layers. This was represented by shaving the pieces of chocolate onto the tinfoil.**
- **The layers of rock particles are compacted and cemented together. This forms sedimentary rock. This was represented by hitting the tinfoil packet with your fist.**
- **Rocks are heated and put under pressure by the earth. This forms metamorphic rock. This was represented by holding the tinfoil packets between your hands and pressing firmly.**
- **Rocks underground get heated and turn into magma by melting. This was represented by placing the tinfoil packet into a beaker of hot water for one minute.**
- **Magma cools and solidifies to form igneous rock. This was represented by allowing the chocolate to cool.**

**HISTORY**

Work through the activities on the following pages to help you decide who should have become king of England in 1066. Use the sheet to write a speech for the person who you think should have been king.

# What Makes a Good Leader?

Can you think of any leaders in your life? (They can be from school, home, locally or nationally.)

What qualities do you think a good leader should have?

- 
- 
- 
- 

What qualities do you think a leader in 1066 should have?

- 
- 
- 
- 
- 

Why was choosing the right king so important in 1066? Is it important today?

# What Makes a Good Leader?

1. Name as many of these leaders as you can:

1.

2.

3.

4.

5.

6.

7.

2. Which words best fit which leader?

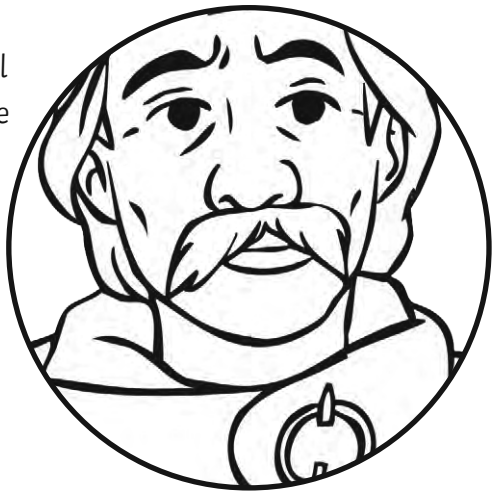
| | | | | |
|---|---|---|---|---|
| military | evil | equality | president | elected |
| strong | popular | divisive | dictator | celebrity |
| ruler | religious | freedom | murderer | inspirational |
| weak | vegetarian | criminal | brave | fearless |
| powerful | forgotten | clever | funny | rich |

3. What qualities would you like to see in a leader today?

4. What qualities would have been important in 1066?

# Who Should Be King in 1066?

### Harold Godwineson



Harold Godwineson was one of five brothers from the most powerful family in England. Between the brothers, they controlled most of the land in England and their sister, Edith, was married to the King, Edward the Confessor.

Although he didn't have royal blood, he was rich and well supported by soldiers. He had links to other royal families in Europe and had experience of fighting Vikings and other foreign threats.

Harold was anti-Norman. He wanted England to remain under the influence and control of the Anglo Saxons.

King Edward made Harold his heir on his deathbed, making any other promise or oath void.

The Normans believed Harold had sworn an oath on a holy relic to support the claim of William of Normandy, however English law at the time believed that a deathbed declaration overrode any other promise that had been made. So, if Harold had sworn to support William as king, King Edward's deathbed declaration cancelled his oath.

### William of Normandy

William was Duke of Normandy, a very powerful area of Northern France. William was illegitimate when he was born and was known as 'William the Bastard'. Despite this attitude in Norman times, William's father, the Duke of Normandy, made William his heir; William inherited his title, the Duke of Normandy, when he was very young. William had the support of the French King and his powerful uncle, an Archbishop. Despite this, he was forced to fight for his title and lands from a young age, learning the craft of Medieval leadership. By the age of nineteen, William was in full control of Normandy. This made William an experienced leader.

King Edward the Confessor had very close links to Normandy and had spent most his young life there whilst the Danish Kings were on the throne from 1016-1042. Edward was protected at the Norman Court and enjoyed a good relationship with William's father and William. William believed he had been promised the throne in 1051 on a visit to England. Most of the Courts of Western Europe expected William to be made the heir after Edward died. William was the son of King Edward's cousin, so had royal blood.

In 1064, William's men captured Harold Godwineson in Normandy and thus he made Harold swear an oath on holy bones to support William's claim to the throne when King Edward died. William knew he would need to gain the support of English Earls to become a powerful king and intended to reward them once he was king.

## Harald Hardrada

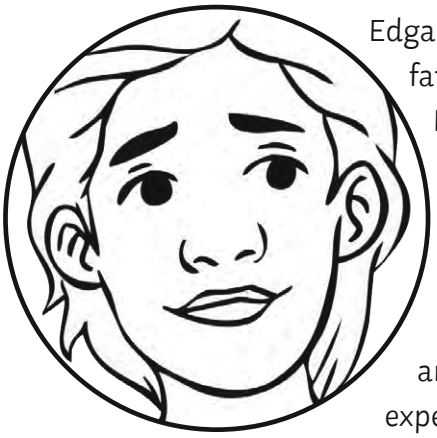
Harald was a Viking King of Norway and many consider him to be one of the last great Viking kings. His name in translation means 'Hard Ruler', and he was a brilliant warrior. Harald had been King of Norway since 1046 so had experience of royal rule.

Before Edward the Confessor took the throne in 1042, the English throne had been held by the Viking descendants of King Cnut. Cnut had defeated Edward the Confessor's father on the battlefield and Edward the Confessor was forced into exile. Edward had to flee to France and stayed there from 1016-42. It was only with Edward the Confessor becoming King in 1042 that the line of Viking kings had been stopped, therefore Hardrada was the right heir.

Harald also had the support of Tostig, Harold Godwineson's brother. Tostig and Harold had fallen out a few years before when Tostig was the Earl of Northumberland, a large area who were descended mainly from Viking settlers. Other Earls had staged a rebellion against Tostig and Harold Godwineson sided with the rebellious earls rather than his brother to hold on to his own power. Many saw Harold Godwineson as a traitor, especially Tostig, who encouraged Hardrada to try and gain the English throne.

## Edgar Atheling

Edgar was King Edward the Confessor's great nephew and the only surviving blood relation of the King. Edgar was only a young boy when the King died, only twelve or thirteen years old. This made him a weaker choice for the throne than if he had been older. However, children becoming king was not unheard of in these times, so long as they had the right support.



Edgar had been brought to England in 1056 as long lost family. Edgar's father was forced to exile England when King Cnut's forces killed King Edmund Ironside in battle in 1016. King Edmund Ironside was Edgar's grandfather. Edgar and King Edward the Confessor were from this royal line which had only been disrupted due to the Vikings.

Edgar and his parents were protected and lived in the royal court from 1056, although Edgar's father, Edward the Exile, died a few months after arriving. Edgar had spent ten years in England and in the Courts so could expect some support from powerful men there.

# 1066 Election: Who Should Be King?

**Name of Contender:**

**What is the contender's background?**

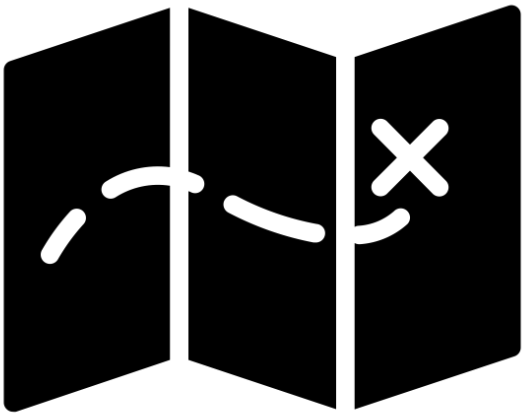
**What qualities does he have to be the new King of England? (Try to link to the Witenagemot wish list.)**

| **Strengths**<br>Make these as prominent as possible in the speech. | **Weaknesses**<br>Try to explain these away in your speech. |
|---|---|
| | |

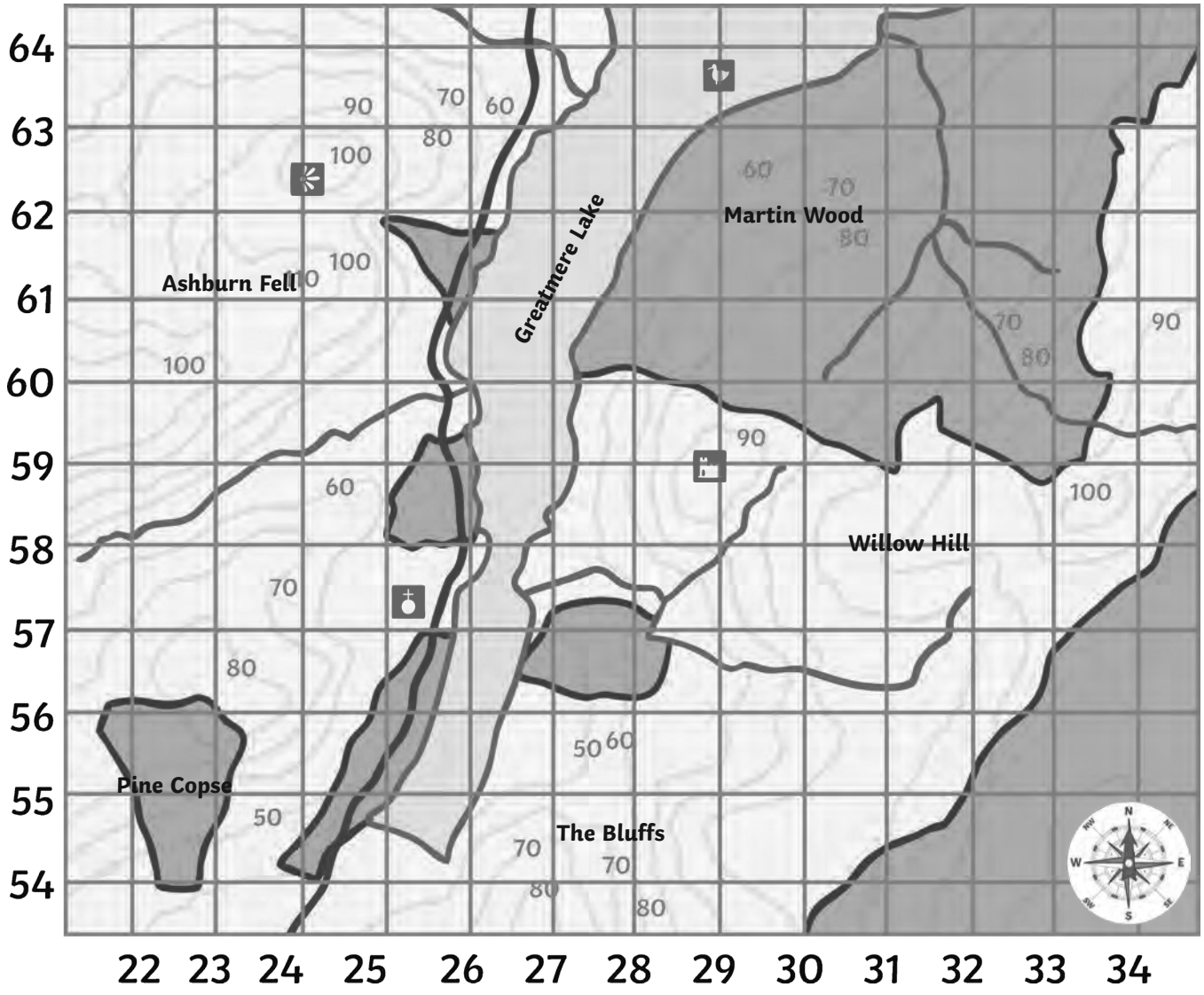
## Election Speech

**GEOGRAPHY**

Work through the mapskills activities on the following pages, then complete the wordsearch to help improve your spelling of key words.



# Map Skills

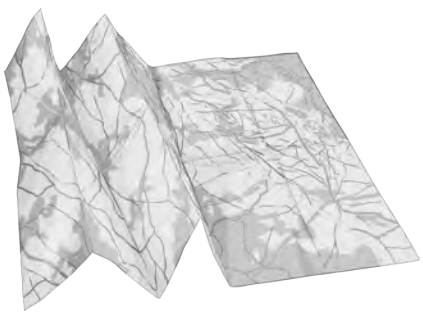



Scale: ⌊——⌋ 1km

## Map Symbols

What do the following map symbols show?

1. _____
2. _____
3. _____
4. _____



What features are shown by the coloured lines?

5. A blue line shows _____
6. A red line shows _____
7. A brown line shows _____

## Direction

You need to know which direction to travel in. Can you find the correct answers?

1. The nature reserve is to the **north/east** (delete as appropriate) of the castle.
2. Ashburn Fell is to the **west/east** (delete as appropriate) of Martin Wood.
3. The viewpoint is to the **north-east/north-west** (delete as appropriate) of the castle.
4. The church is to the **south-west/south-east** (delete as appropriate) of Martin Wood.
5. Louis wants to walk from the church to the Pine Cops. Which direction must he travel in?

   _____

6. Louis wants to walk from the church to Greatmere Lake. Which direction must he travel in?

   _____

## Grid References

You need to know the location of the places that you would like to visit.

1. What are the four-figure grid references for...
   a. the church? _____
   b. Pine Copse? _____ _____ _____ _____ _____ _____
2. What are the six-figure grid references for...
   a. the castle? _____
   b. the nature reserve? _____

## Scale

You want to know how far places are from each other.

1. How far is the nature reserve to the castle? _____
2. How far is the church from the viewpoint? _____
3. How far is the viewpoint to the nearest road? _____
4. How far is the church from the nature reserve? _____

**Challenge:** What things will prevent your friend from travelling in a straight line between the different locations?

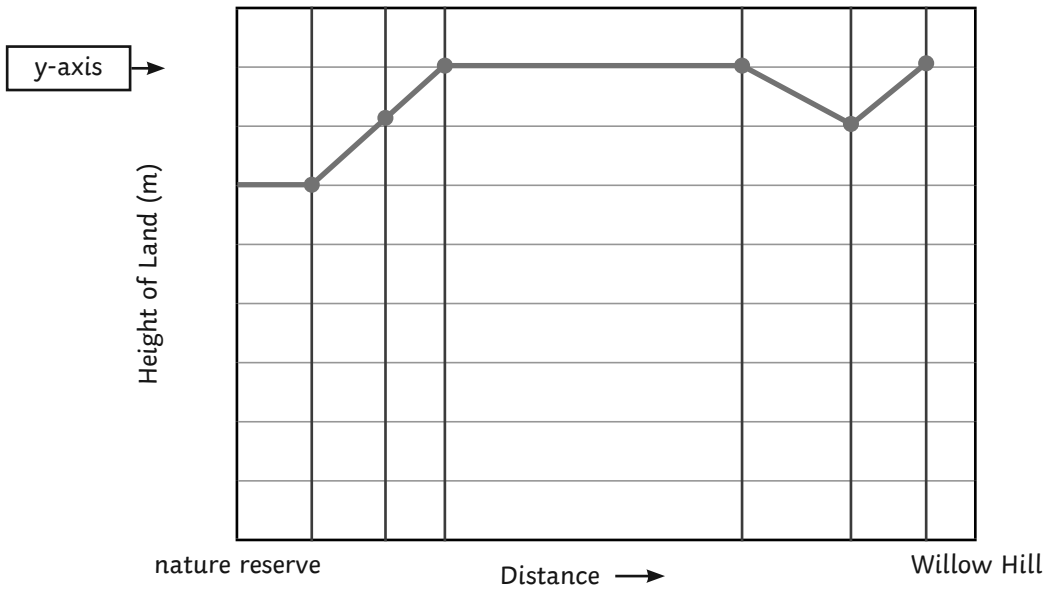
_____

_____

## Contours

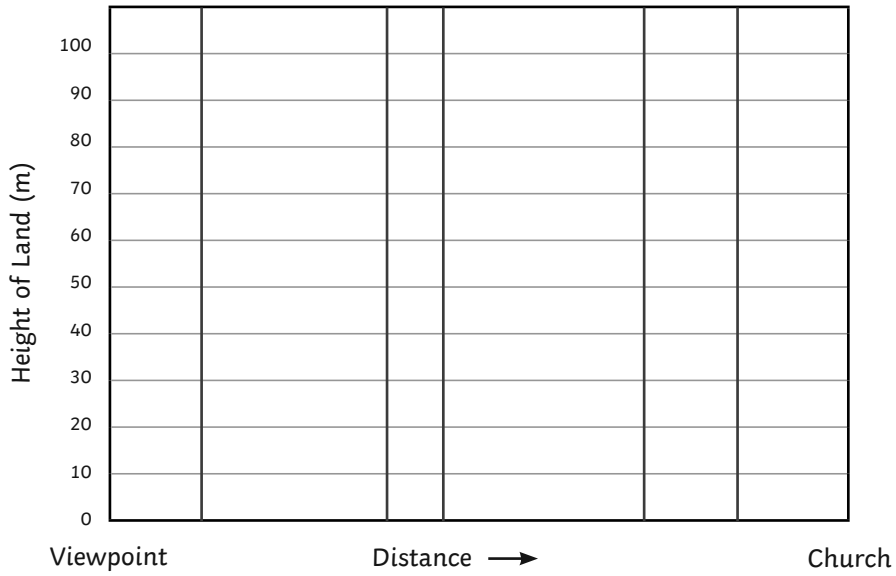
You should consider which routes will be too steep

This cross-section shows the route between Willow Hill and the nature reserve. Label the y-axis so it shows the correct height of the land.




### Challenge

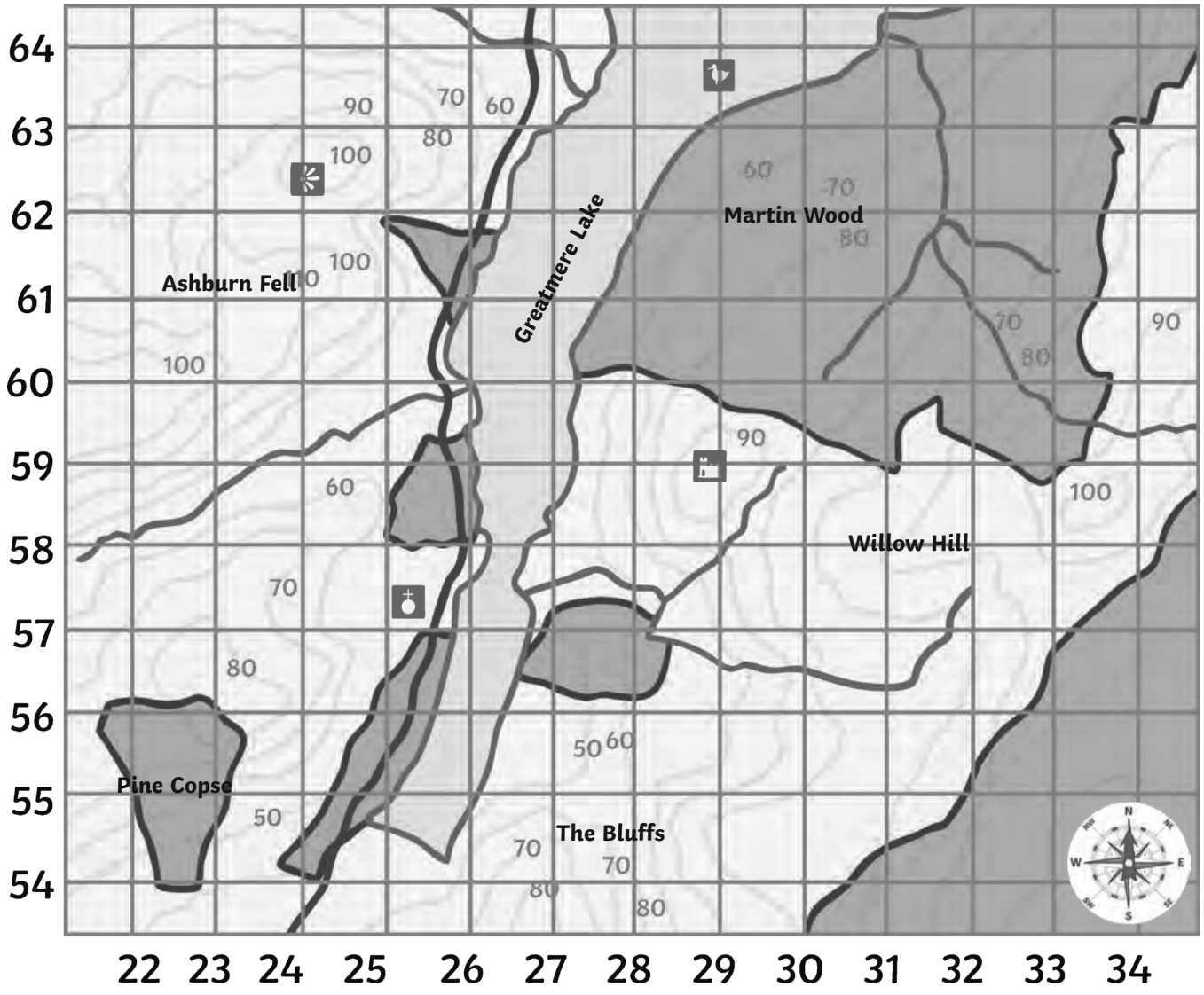
Draw the cross-section of the route between the viewpoint and the church.




### Challenge

Plan your trip to Greatmere. If you started at the viewpoint, describe your journey around the lake to the church, castle and the nature reserve. Give as much detail as you can. You could include information about the direction, the distance (km) and the steepness of the land (m).

# Map Skills Answers

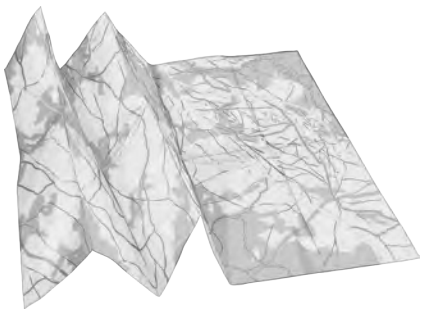



Scale: ⌊——⌋ 1km

## Map Symbols

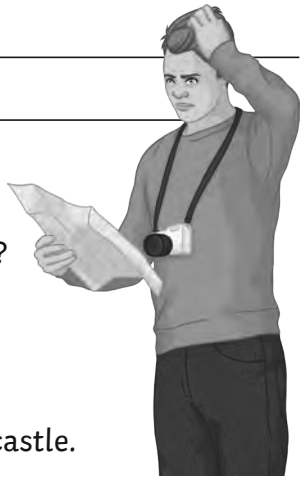
What do the following map symbols show?

1. viewpoint
2. castle
3. church
4. nature reserve



What features are shown by the coloured lines?

5. A blue line shows a river
6. A red line shows a road
7. A brown line shows a contour line



## Direction

You need to know which direction to travel in. Can you find the correct answers?

1. The nature reserve is to the **north~~/east~~** (delete as appropriate) of the castle.
2. Ashburn Fell is to the **west~~/east~~** (delete as appropriate) of Martin Wood.
3. The viewpoint is to the **~~north-east~~/north-west** (delete as appropriate) of the castle.
4. The church is to the **south-west~~/south-east~~** (delete as appropriate) of Martin Wood.
5. Louis wants to walk from the church to the Pine Cops. Which direction must he travel in?

   south west
6. Louis wants to walk from the church to Greatmere Lake. Which direction must he travel in?

   east

## Grid References

You need to know the location of the places that you would like to visit.

1. What are the four-figure grid references for...
   a. the church? 2557
   b. Pine Copse? 2254, 2155, 2255, 2355, 2354, 2156, 2256
2. What are the six-figure grid references for...
   a. the castle? 289590
   b. the nature reserve? 290636

## Scale

You want to know how far places are from each other.

1. How far is the nature reserve to the castle? 4.2km
2. How far is the church from the viewpoint? 4.8km
3. How far is the viewpoint to the nearest road? 2km
4. How far is the church from the nature reserve? 6.8km

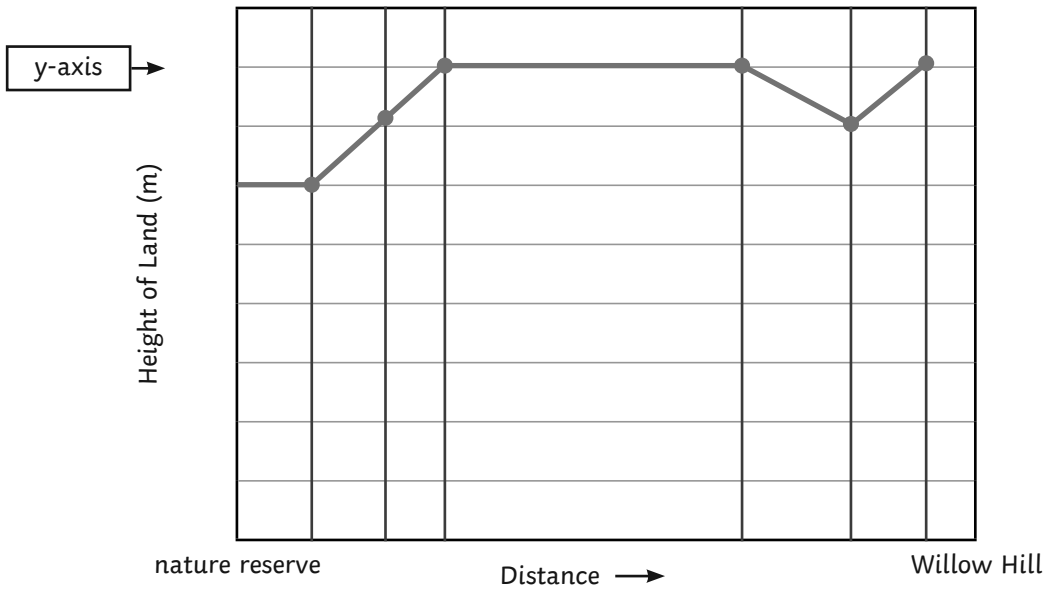
**Challenge:** What things will prevent your friend from travelling in a straight line between the different locations?

the lake, busy roads, rivers, steep slopes

## Contours

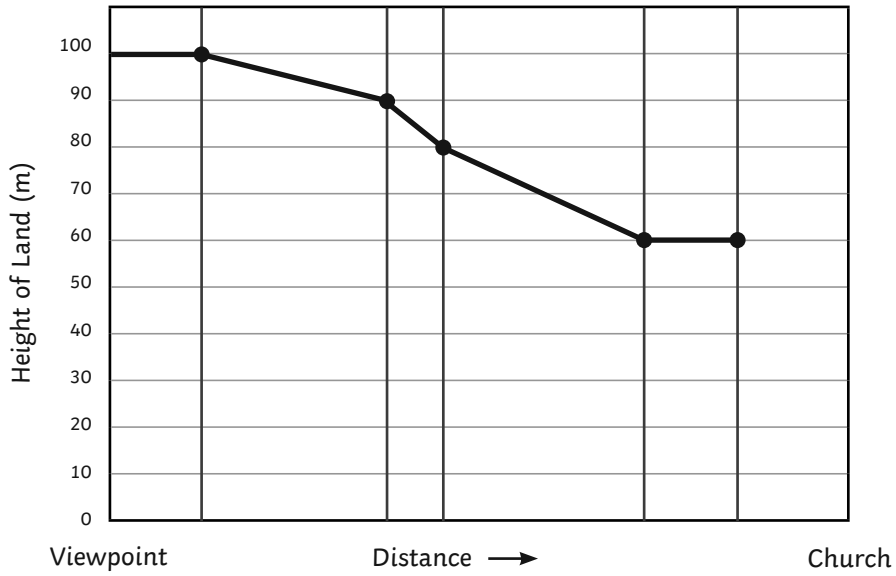
You should consider which routes will be too steep

This cross-section shows the route between Willow Hill and the nature reserve. Label the y-axis so it shows the correct height of the land.




### Challenge

Draw the cross-section of the route between the viewpoint and the church.




### Challenge

Plan your trip to Greatmere. If you started at the viewpoint, describe your journey around the lake to the church, castle and the nature reserve. Give as much detail as you can. You could include information about the direction, the distance (km) and the steepness of the land (m).

# 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 | | |

172

## (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 | | |

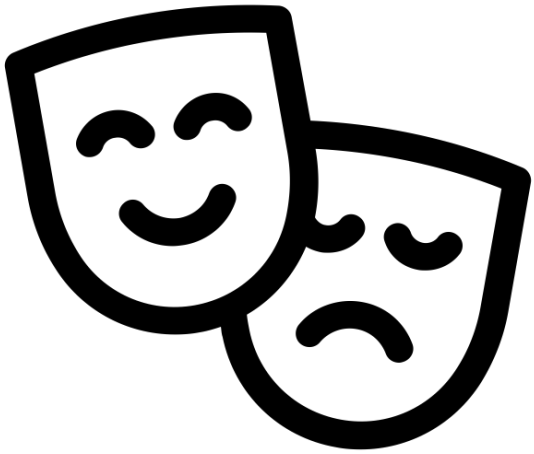
173

## (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 |

**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<br>• Powerful<br>• Open<br>• Closed<br>• Strong<br>• Intimidating<br>• Slumped<br>• Upright<br>• Shaky<br>• Tense<br>• Relaxed | |
| Facial expressions | Movement of the face into different looks. |
| • Scrunched<br>• Frown<br>• Squint<br>• Shocked<br>• Open mouthed<br>• Pursed lips<br>• grimace | |
| **Voice** | |
| Tone | How you say something |
| • Aggressive<br>• Polite<br>• Soft<br>• Harsh<br>• 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.**

175

### 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.

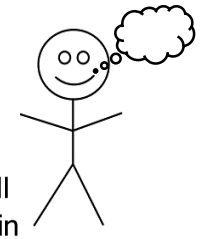
**Exaggeration:** Making your vocals or physicality more extreme/bigger.

## 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.

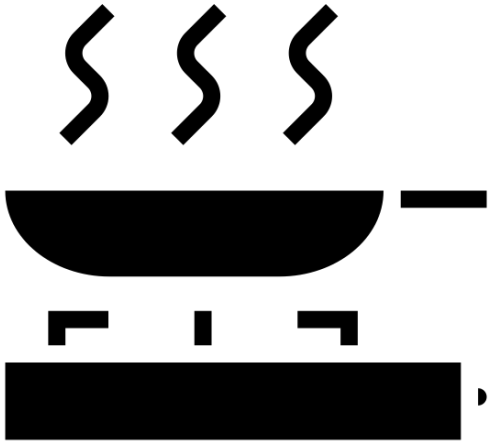
**Slow motion:** Moving at a least 2 third's slower than normal speed; this allows the audience to see the detail of a movement

**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 drama.



# 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

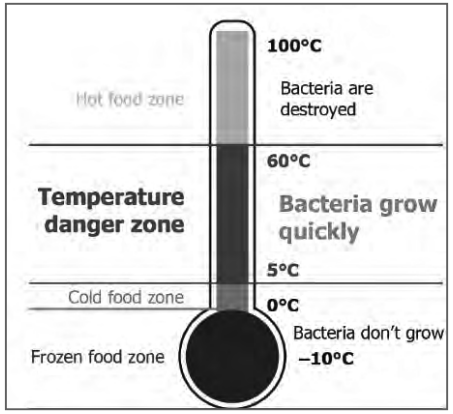
Conduction - when heat is transferred directly.
e.g. - frying an egg

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

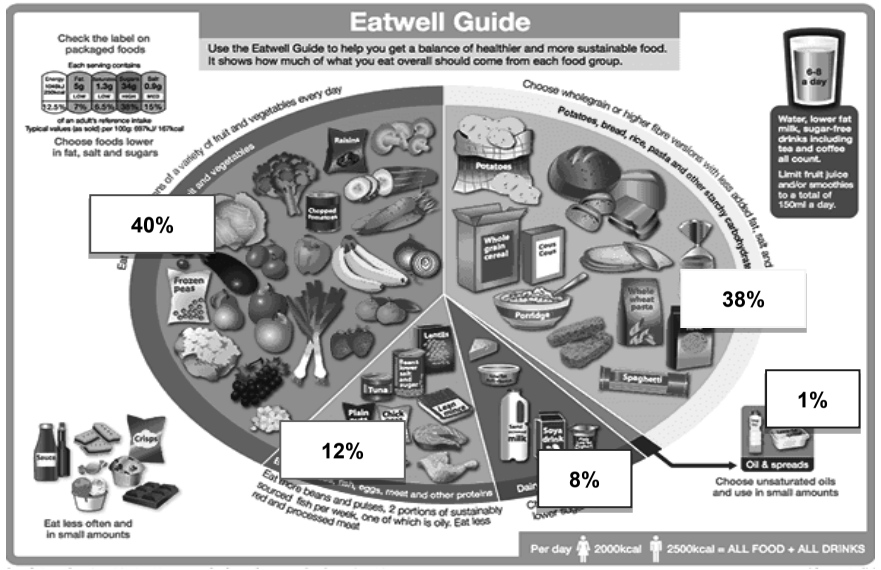



## FOOD ALLERGY OR FOOD INTOLERANCE?

| 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 |

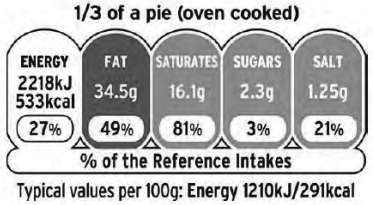
## Key abbreviations: Weights and Measurements

| | | |
|---|---|---|
| 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.




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

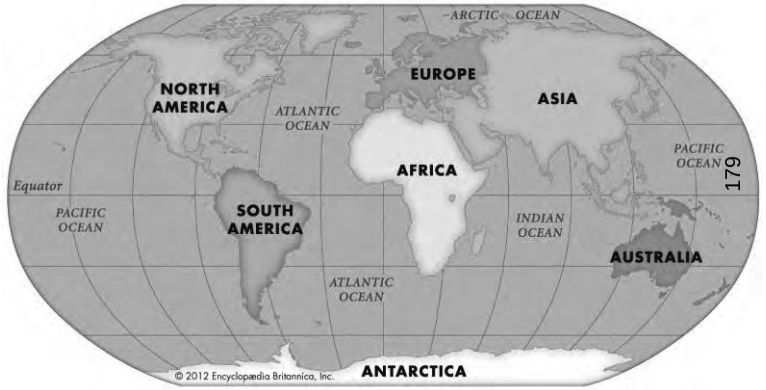

Bridge hold

Claw grip

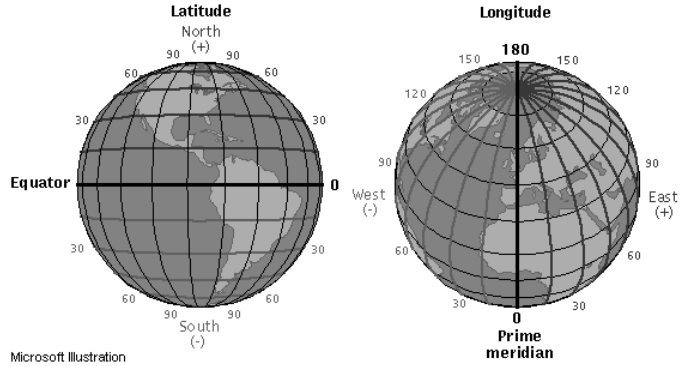
| Name of the Nutrient | Sources | Function | |
|---|---|---|---|
| **Carbohydrates** (energy giving food) | Rice, potato, wheat, sugar | Provides energy |  |
| **Fats** (energy giving food) | Butter, ghee, milk, cheese | Gives more energy compared to carbohydrates |  |
| **Vitamins and Minerals** (protective 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 |  |

# WHAT IS GEOGRAPHY?

The 7 Continents:
ASIA
NORTH AMERICA
SOUTH AMERICA
EUROPE
AUSTRALASIA/OCEANIA
ANTARCTICA
AFRICA




Map of the UK:


**Geography is the study of where and why**

The three types of geography are:

PHYSICAL – relating to nature and processes

HUMAN – relating to the actions of people

ENVIRONMENTAL – the effects of people on the environment or the effects of the environment on people

The three types of effects in Geography are:

Economic – anything about money or jobs. (e.g. income lost by businesses)

Environmental – anything related to plants and animals. (e.g. habitat lost)

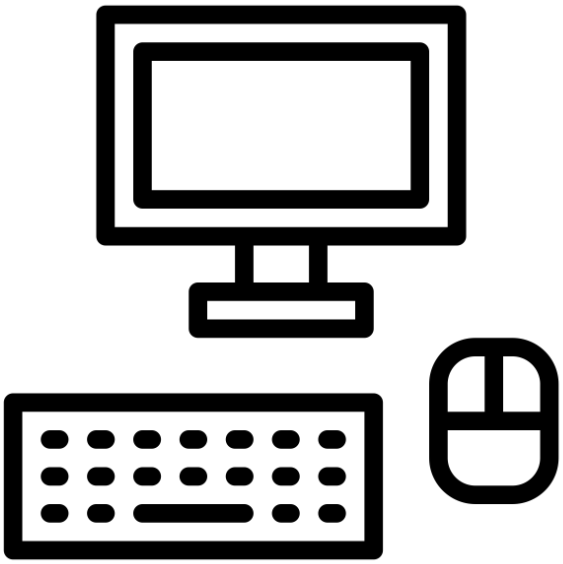
Social – anything related to people. (e.g. families improve their quality of life)

**Glossary**

**Geography** – the study of the earth and people
**Continent** – a large landmass which contains countries.
**Country** – one nation with their own laws, rules and institutions
**Latitude** – the horizontal lines that run across the earth north and south of the equator
**Longitude** – the vertical lines that run up and down the earth west and east of the Greenwich Meridian
**Geographical issue/event** – one event which is related to human, physical or environmental Geography

**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