

GROW

SMART

Third Edition 2022

An initiative by **GROWTHPOINT**
PROPERTIES



BRINGING IT
TOGETHER

+

FABLES

FLASHBACKS &
FORESHADOWING

PHASES OF THE MOON



DEAR GROWSMARTER

We are back for the third edition of the Growsmart newspaper for 2022. It's been a year packed with stories, puzzles and activities, but there's still time for one more round – so let's dive in!

Jump straight into fascinating facts about the fearsome Vikings on page 2 and learn all about bringing sentences together with a semi-colon on page 3. Gain some roaring presentation tips on page 4 and explore the smallest desert in the world on page 5.

Hop on over to page 6 to learn all about fables, proverbs and idioms and master the art of flashback and

foreshadowing on page 7. Move over to page 8 to learn how to treat customers right when we own a business and get to know physical and chemical reactions on page 9.

Get ready to kick into maths gear on page 10 and spot the difference between venomous and poisonous animals. On page 11 we step into the moonlight learning about the phases of the moon and get messy building a volcano! End off with a bang on page 12 and solve the equations.

Until next time,
The Growsmart Team

ARTICLE SUBJECT KEY:



ENTREPRENEURSHIP



MATHEMATICS



EXPERIMENT



NATURAL SCIENCES



GENERAL KNOWLEDGE



PUBLIC SPEAKING



LANGUAGE



SOCIAL SCIENCES



LIFE ORIENTATION



DO YOU KNOW THESE WORDS?

vicious vikings

These fearsome warriors were around from about 700 – 1 100 AD. They famously set sail from their home in Scandinavia, where Sweden, Norway and Denmark are located, to raid and plunder. Let's tackle the trail and find fun facts about the origins of Vikings!

1. Vikings spoke a language called Old Norse. 20% of modern British words come from the Viking language.
2. In the Old Norse language, Viking means *pirate raid*.
3. Viking children did not attend school. Everything was learned through stories, or sagas – long Viking stories.
4. Vikings believed that if they died in battle they would go to Valhalla, Viking heaven, where it is said they could drink and party every night.
5. Vikings loved blonde hair! They used soap with lye to lighten their hair.
6. Vikings did not call themselves Vikings, but rather Ostmen. They were also known as Norsemen, Norse, or Danes. Vikings came later down the line.
7. They only bathed once a week, on Saturdays!
8. Ever heard of the word berserk? Berserkers were terrifying Viking warriors who wore bear or wolf skins and howled in battle like wild animals.

9. Viking funerals were very unique. When an important Viking died, they would be placed in a burial ship with all their belongings. The ship would be set alight and pushed out into the lake or ocean.
10. Vikings were excellent sailors and skilled craftsmen in building boats. Their longboats could fit 60 people, which was very impressive for that time. Their boats were also designed to float high in the water and to make landing on beaches easier.
11. Christopher Columbus famously discovered the American continent; however, it is said that 500 years before, Vikings had landed on its shores around 1 000 AD.

Sources: [natgeokids.com](https://www.natgeokids.com) | [twinkl.co.za](https://www.twinkl.co.za) | [funkidslive.com](https://www.funkidslive.com)

ANAGRAMS



An anagram is another fun way of wordplay, often providing wit and humour. The letters of a word or phrase is rearranged to form a new word or phrase. You form an anagram by using the exact same letters of the word or phrase and rearrange them.

If you think about William Shakespeare's Hamlet, it is an anagram for Amleth, a Danish prince. Authors often use anagrams to hide their identity or to add layers to their written pieces, like solving a mystery.

There are a lot of funny anagrams too! Just like these:

A gentleman = elegant man
Astronomer = moon starrer
The detectives = detect thieves
The morse code = here come dots
The countryside = no city dust here

Now it is your turn! How many anagrams can you solve?

1. Change **agree** into another word for keen. _____
2. Change **fringe** into a part of the body. _____
3. Change **beard** into something you can eat. _____
4. Change **chain** into a country. _____
5. Change **flog** into a sport. _____
6. Change **cheap** into a fruit. _____
7. Change **disease** into a popular place to go on holiday. _____
8. Change **break** into a job. _____
9. Change **bleat** into an item of furniture. _____
10. Change **super** into something you keep money in. _____

Source: [liveworksheets.com](https://www.liveworksheets.com) | [literarydevices.net](https://www.literarydevices.net)

Answers: 1. Eager; 2. Finger; 3. Bread; 4. China; 5. Golf; 6. Peach; 7. Seaside; 8. Baker; 9. Table; 10. Purse



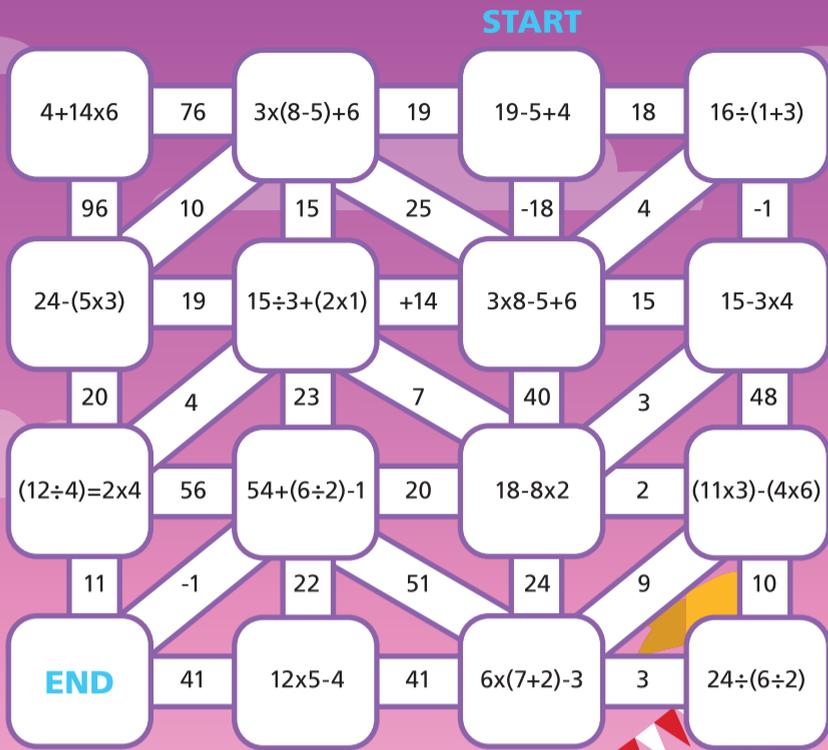
MYSTERY MAZE



BRINGING IT TOGETHER



Travel through the maze to solve the mathematical equations until you hit the end.



THE NUMBERS GAME

Match the idiom relating to numbers to their correct meaning.

IDIOM	EXAMPLE	MEANING
1. Pull the other one	Sue, cooking dinner? Pull the other one - she can barely make a salad!	A. Extremely happy.
2. Talk nineteen to the dozen	I couldn't understand what he was saying because he was talking nineteen to the dozen.	B. A close interrogation.
3. The third degree	I don't know why you always give me the third degree every time I hang out with my friends.	C. Once someone was hurt by something or someone else, they will be afraid to try it again.
4. Dressed up to the nines	They were invited to a formal party. That's why they were dressed up to the nines.	D. You want to give someone a high five.
5. Be on cloud nine	She was on cloud nine when he asked her to marry him.	E. Used to tell someone that you don't believe what they have just said.
6. Take forty winks	I'll just take forty winks before getting ready for school.	F. Refers to someone or something that people hate.
7. Once bitten, twice shy	Since Sibu broke up with her boyfriend, she has become very cautious about starting any new relationship. Once bitten, twice shy, you know!	G. To speak very quickly.
8. Public enemy number one	That terrorist is considered public enemy number one.	H. To feel well and healthy, both physically and mentally.
9. Give me five	"Give me five!" shouted Tshepo after he scored a goal.	I. Someone wearing fashionable or formal clothes for a special occasion.
10. Feel like a million	It is a wonderful day! I feel like a million bucks.	J. Take a nap for a short period of time.

Source: myenglishpages.com

The semi-colon is used to join two related sentences or separate items in a series that has commas without using a conjunction like *and*.

Generally, a capital letter is not used after a semi-colon, however, if the semi-colon is followed by a proper noun or acronym it should start with a capital letter.

Example: We can go to the library to do some research; Mondays are pretty quiet there.

Semi-colons are not interchangeable with commas or periods, but they are somewhere in-between. It is stronger than a comma but not as divisive as a period.

INDEPENDENT CLAUSES

Semi-colons can be used to join two closely related independent clauses, so the sentence before and after the semi-colon can be complete sentences on its own. To insert a semi-colon the two sentences should share a logical connection.

Example: I ordered a pie for lunch; life's too short for counting calories.

This example is made up of two complete, grammatically correct sentences put together.

ELIMINATE CONJUNCTIONS

Conjunctions (and, but, or) can also be used to connect two sentences, however, a semi-colon and conjunctions can not be used together.

Example: I saw a magnificent owl, and it was eating a mouse. I saw a magnificent owl; it was eating a mouse.

Therefore, a semi-colon narrows the gap between the ideas of two separate sentences or replacing a conjunction between two related ideas. Sometimes two ideas can be opposite, but still related enough to insert a semi-colon.

THE SERIAL LIST

The semi-colon can be used to divide items of a list that is long or contains punctuation. With this scenario a semi-colon will help readers keep track of the items.

Example: I need the weather statistics for the following cities: Cape Town, South Africa; London, England; Paris, France; Dubai, United Arab Emirates; Dublin, Ireland; Durban, South Africa.

CONJUNCTION ADVERBS

When a conjunction adverb is linking two independent clauses, a semi-colon must be used. Conjunction adverbs include moreover, nevertheless, however, otherwise, therefore, then, finally, likewise, and consequently.

Example: I needed to go for a walk and get some fresh air; also, I needed to buy milk.

The learners had been advised against walking alone at night; however, Emma decided walking wasn't dangerous if it was early in the evening.

This rule is very similar to that of the conjunction. Simply check if the two independent clauses could stand as a sentence on its own.

Source: grammarly.com

Answers: 1. E; 2. G; 3. B; 4. I; 5. A; 6. J; 7. C; 8. F; 9. D; 10. H

PRESENT LIKE A PROFESSIONAL



Presenting a PowerPoint presentation can be daunting. When compiling your PowerPoint it is important to keep in mind that the PowerPoint is there to support you, not overshadow you.

GETTING STARTED

1. **Know what you are talking about** | Think about how you want to get your message across and in what order you want to convey it.
2. **Write it out** | Write out your entire presentation to not only memorise it but see how it flows.
3. **Only highlight the most important** | A presentation only highlights the crucial pieces.
4. **Know your audience** | When you understand your audience, you can adapt your presentation accordingly.
5. **Rehearse** | While you are rehearsing your presentation, you start to get a feel for it and can eliminate hiccups.



PRACTISE MAKES PERFECT

1. **Practise in front of a mirror** | What you look like is just as important as what you sound like. Pretend you are having a normal conversation, allow your hands to move with your speech.
2. **Use "Presenter Mode"** | Put your PowerPoint on "Presenter Mode" when rehearsing. Only you will then be able to view the extra notes.
3. **Choose three focus points** | Pick three spots in the room and take your time to focus on each spot. You do not have to look your audience in the eyes, just look at these three spots.
4. **Practise audience** | Practice your presentation in front of new audiences for some feedback and practise, for example your family and friends.
5. **Modulate** | Be conscious of your voice. Raise and lower your tone of voice at the correct places.

IT'S SHOWTIME

1. **Take a deep breath** | This will help you to remain calm and in the moment.
2. **Take it slow** | Take another deep breath when you are feeling nervous or starting to ramble.
3. **Be confident** | When you act confident, you will start to feel confident.
4. **Speak clearly** | Smile and move with grace while speaking clearly. This will help you come across as more confident.
5. **Fake it 'til you make it** | Even if you feel like a nervous wreck, acting confident will help you with your presentation.

Sources: business.tutsplus.com | hbr.org

DESIGNING YOUR POWERPOINT

1. **Keep your slides simple** | Less is more. A cluttered slide can be very distracting for your audience.
2. **Limit the words on your slides** | Your audience must listen to you, the presenter, not look at the slides.
3. **Use quality graphics and photos** | This will make your presentation more visually appealing and therefore effective.
4. **Choose your colour and font wisely** | You need to choose a font and colour that is suitable for your audience and to your topic.
5. **Limit punctuation** | Emphasise your points when speaking, not on the slides.

WORLDLY KNOWLEDGE



Put on your thinking cap and test your general knowledge by completing the questions.

1. On which continent is India located? _____
2. In *The Jungle Book*, what kind of animal is Baloo? _____
3. What is a baby goat called? _____
4. What are the three primary colours? _____
5. What is the longest snake in the world? _____
6. How many years are there in a millennium? _____
7. What is the person who carries a golfer's bag of clubs called? _____
8. What kind of creature is a Komodo dragon? _____
9. In which Australian city is the Opera House? _____
10. What colour is a giraffe's tongue? _____

Source: funquizzes.uk

DARK SKY RESERVES



It is important to conserve various aspects of nature. But have you ever thought about conserving the night sky from light pollution? The International Dark Sky Association does just that! They work to protect the night sky for present and future generations.

An International Dark Sky Reserve is public or private land with exceptional quality starry nights and wildlife. The area is specifically protected for its scientific, natural, educational, cultural, heritage and/or public enjoyment. The reserve must meet minimum criteria for quality and natural darkness.

There is only one International Dark Sky Reserve on the African continent: the NamibRand Nature Reserve in Namibia. Although the reserve is already involved in various conservation efforts, it expanded to preserving the star-filled skies. Limiting light pollution not only makes you see the night sky clearer but is also great for the environment. It allows the ecosystem to function optimally and allows visitors to experience the surreal pristine night sky. The nearest towns to the nature reserve is more than 100 km away, making this International Dark Sky Reserve the darkest yet measured.

To become a Dark Sky Reserve is a long process. The area must have specific unpolluted sky quality, the element of natural darkness, and the community's commitment in preserving the air and sky quality. There are only 13 Dark Sky Reserves in the world. You will find other Dark Sky Reserves in New Zealand, Canada, France, Germany, Ireland, the United States and the United Kingdom.

Sources: darksky.org | wolwedans.com | departures.com

Answers: 1. Asia; 2. Bear; 3. Kid; 4. Blue, Red and Yellow; 5. Python; 6. 1 000 years; 7. Caddie; 8. Lizard; 9. Sydney; 10. Blue

SMALLEST DESERT IN THE WORLD



Across the globe there are a few spectacular deserts, and some of them are located right here on our continent!

Have you heard of the Sahara Desert? Covering most of Northern Africa, it is the third largest desert and the largest hot desert in the world. There is also the Namib Desert, in Namibia, which is the oldest desert in the world – at least 55 million years.

South Africa also has a desert, the smallest desert in the world. It is located in Kwa-Zulu Natal, just 10 km outside of Port Edward. This small town's unusual claim to fame is the Red Desert sitting on 11 hectares.

There have been many myths and legends as to the origins of the Red Desert, like maybe it is a site of an alien landing? But history has revealed that the desert formed when a Zulu tribe located there in the 1800s with vast cattle stolen from the Pondo's. The area became overgrazed, subsequently leaving it to be eroded by the wind leading to desertification with a unique opportunity to study desert ecology.

People describe it as a miniature version of the Arizona Desert in America. Its red soil and high hills are a great contrast to the lush and tropical surroundings. The Red Desert is now an internationally recognised heritage site.

Sources: theculturetrip.com | reddesertnaturereserve.co.za



RIDDLE ME THIS



Take a look at these puzzling riddles below and pick your brain to solve them. Think carefully about these brain teasers!

1. What is full of holes and can hold water?

2. What has many keys but can't open doors?

3. What gets wet when drying?

4. What can go up and down, but can't move?

5. What can you serve, but can't eat?

6. What must be broken before it can be used?

7. What is always running, but still cold inside?

8. Where can you find continents, countries, and cities, but no people?

9. What has teeth but cannot eat?

10. What has hands but no feet, a face but no eyes, tells but doesn't talk?

Source: wondermomwannabe.com

Answers: 1. Sponge; 2. Piano; 3. Towel; 4. Temperature; 5. Tennis ball; 6. Egg; 7. Refrigerator; 8. Map; 9. Comb; 10. Clock

SEE HOW WE HEAR



Every day we chat with our friends, learn from our teachers, listen to music or birds chirping in the trees and watch television. We are able to hear all these wonderful sounds with our ears. Sounds that travel through our ears to our brain. Did you know there are three parts to the ear? There is the outer ear, the middle ear, and the inner ear.

OUTER EAR

It is also known as the pinna or auricle. The pinna acts like a funnel, collecting sound to channel through the ear canal. The ear canal produces ear wax. Do you think ear wax is gross? It is actually good for your ears! It fights off infections that could hurt the skin in the ear canal and also traps dirt to help keep the ear canal clean.

INNER EAR

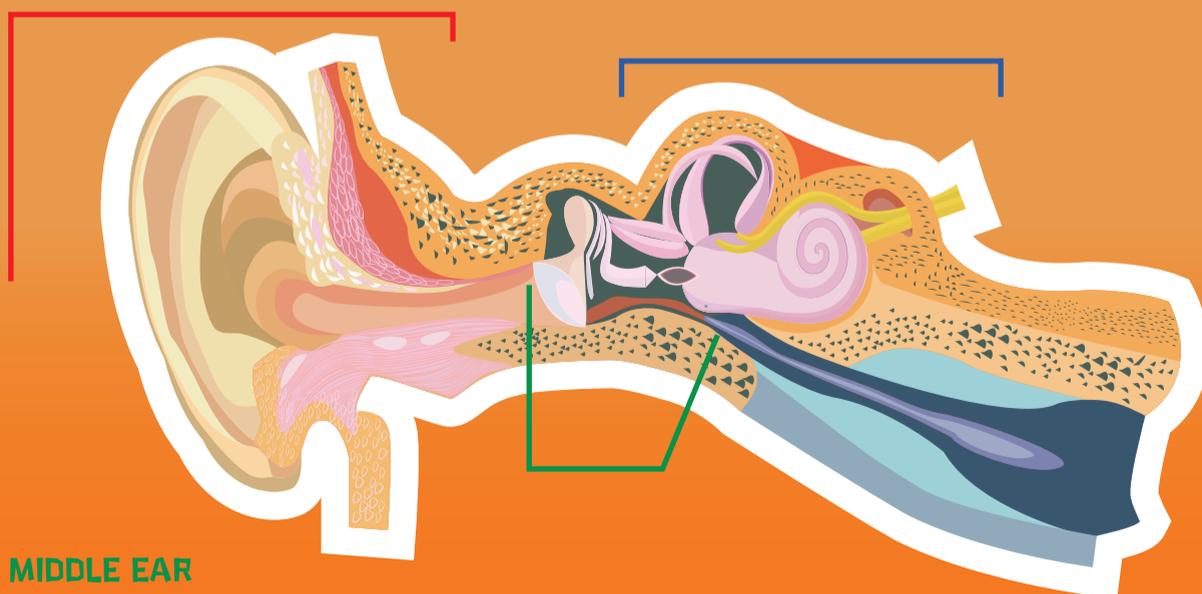
The ossicle bones are connected to the cochlea in the inner ear. The cochlea is a small circular tube filled with liquid. The vibrations of the ossicles create waves in the liquid. The cochlea is also lined with little hairs. So, when the fluid in the cochlea moves, the little hairs move too, creating nerve signals that get sent to the brain. The brain interprets these nerve signals as sound and – voila! You hear!



DO YOU KNOW THESE WORDS?

Challenge yourself and see how many you know.

- | | |
|-------------|------------------|
| accelerates | cataclysmic |
| accomplice | chancellor |
| adhesion | charismatic |
| adulation | circumflex |
| affluent | comparison |
| anemometers | conference |
| aphasia | constellation |
| apparatus | contaminated |
| apprentice | contemptuous |
| arsenic | cornea |
| assailant | cumbersome |
| atomic | cybernetics |
| attributive | desolate |
| aubergine | deters |
| beatific | diaphanous |
| berserk | dilapidated |
| biscuit | discussion |
| bruschetta | disproportionate |
| bulbous | dowager |
| candelabra | duress |



MIDDLE EAR

Here is where the ear drum is located. It is a thin piece of tightly stretched skin and very sensitive. The sound collected by your outer ear causes the eardrum to vibrate. When the eardrum vibrates it moves a set

of three tiny bones, called ossicles. The three bones are called the hammer, anvil, and the stirrup.

Source: Youtube – Nemours KidsHealth

FABLES

The word "fable" comes from the Latin word "fabula" or "story".



Fables are short stories with a moral lesson. Previously these tales were passed down as folklore to teach mainly children the difference between right and wrong or to give advice. Most of the Western fables we know today were written by the famous Aesop, who wrote in ancient Greece. During ancient Greece times, many students in school were encouraged to write fables.

There are many phrases we use today that come from fables, like "a wolf in sheep's clothing" and "sour grapes". The plot of a fable always includes some conflict and a resolution. Animals featured in fables always have human

characteristics or behaviour. Along with the animals, natural elements form part of the main characters. There are only about two to three characters in a fable, namely a hero, a villain, and a character with a weakness.

The moral of the fable features a rule that is believed we need to live by and can be spotted in the fable towards the end. Ever heard of the fable of the wolf and the sheep? A wolf in sheep's clothing gets into the sheep's pasture without raising any alarm or being noticed, and easily makes a meal out of the sheep. The moral of the story is that appearances can be deceiving.

HOW TO SPOT A FABLE

There are four characteristics of a fable:

1. **Symbolism** | The characters are usually stand-ins for humans and their mishaps symbolise human behaviour.
2. **Humanising** | Animals, and sometimes inanimate objects, are the main characters and given human qualities. For example, an owl is wise and a fox is cunning.
3. **Lessons** | There is always a moral lesson to learn from a fable. For example, "slow and steady wins the race".
4. **Humour** | Often a fable will have humorous tones when showcasing the foolishness of human nature.

EXAMPLE OF A FAMOUS FABLE

The tortoise and the hare

The tortoise and the hare enter a footrace. The hare taunts the tortoise, remarking on how he is naturally a lot faster than the tortoise. During the race, the hare takes several long breaks and wastes time relaxing between quick sprints. Meanwhile, the tortoise continues steadily along. In the end, the tortoise wins. The moral of the story is: "Slow and steady wins the race."

Can you think of other fables? **Hint:** The lion and the mouse

Source: [masterclass.com](https://www.masterclass.com)



PROVERBS VS. IDIOMS



We often use proverbs and idioms to give advice. An idiom is a fixed expression with figurative meaning. The phrase comprises of its own non-literal meaning and is not a complete sentence. It does not always make sense if you are not familiar with it. Whereas a proverb is a short, popular sentence. It is a well-known saying containing advice.

Idiom To be fed up
Proverb Don't cry over spilled milk.

The literal meaning of an idiom does not make sense and can be impossible to understand if you have not heard it before. If we look at a proverb, like "Don't cry over spilled milk" the literal meaning does makes sense on its own, but it is not until you apply this meaning to a situation that it is really understood. In this case it means, "Don't get upset over something that has already happened. It's too late to worry about it now".

CAN YOU SPOT THE PROVERB OR IDIOM? LOOK AT THE SENTENCES BELOW AND DETERMINE WHETHER IT IS A PROVERB OR IDIOM.

1. To rub someone the wrong way _____
2. A stitch in time saves nine. _____
3. Those who live in a glass house should not throw stones. _____
4. Break a leg _____
5. All that glitters is not gold. _____
6. Giving the benefit of the doubt _____
7. Pulling someone's leg _____
8. Actions speak louder than words. _____
9. Getting out of hand _____
10. All is fair in love and war. _____

Sources: [learnersdictionary.com](https://www.learnersdictionary.com) | [javatpoint.com](https://www.javatpoint.com)

FLASHBACKS & FORESHADOWING



To write a captivating story, you want to create intrigue that best suits your story. Besides creating conflict, you can incorporate flashbacks and foreshadowing to build suspense. You want to keep your audience engaged with your story until the end.

FLASHBACKS

By inserting flashbacks, the author interrupts the story to recreate an event of an earlier time. It does not overshadow the main story, but it can be a good way to reveal a character's backstory to make sense of their present-day actions, or to make a promise to the reader.

INCORPORATING FLASHBACKS

Shift your verb tenses between the flashback and the main story

You have two choices when a character recalls a memory in a time before the story began. You can describe the memory briefly if it is short, otherwise you should pull the reader back into the past by describing the scene. It is important to focus on your verb tenses so that the reader is aware of where they are within the story.

Keep it relevant

When writing a flashback, keep in mind your front story is still moving forward. Therefore, your flashback needs to be relevant and fill in the characters' history and motive. Tell the reader what they need to know, and nothing more. The flashback should contribute and build onto your story.

Tell the present story first

You do not always know where a flashback will fit in. It is a good idea to first complete your first draft, look at the flow of your story and then decide where you can insert a flashback.

FORESHADOWING

Foreshadowing gives the reader a hint of what is to come later in the story. It is a great literary device to use for creating dramatic suspense, curiosity or mark things that may not appear as they seem. You can also use it to prepare your readers for what is to come.

INCORPORATING FORESHADOWING

Direct foreshadowing

With this type of foreshadowing, the story openly suggests an impending problem, event, or twist. This can happen through the character's dialogue or the narrator's comments.

Indirect foreshadowing

This type of foreshadowing hints at subtle clues. As a writer you leave subtle clues for your reader. They won't realise the meaning of the clues until they have witnessed the foreshadowed event.

Some of the ways you can incorporate foreshadowing is through dialogue, a setting, or even the title of your story. Always plan your story first, and then decide where to selectively plant the seeds for foreshadowing. When you are done, take your story to your parents or a friend to read and give feedback on the clues you placed.

Source: [masterclass.com](https://www.masterclass.com)

SAVE FOR A RAINY DAY



DO YOU KNOW THESE WORDS?

Challenge yourself and see how many you know.

ebullience	ethanol	exploits
embezzlement	eucalyptus	fluoride
embryo	evaporation	fondant
eradicate	exaggerate	



Building a business requires a lot of planning, not only to start it, but to grow it for the future. It is important to remain disciplined with your plan so that you can reach your goals and expand your business further.

"A penny saved, is a penny invested in your future."
– Warren Buffet

Once your business is established, you will most likely want to grow it further. Therefore, planning is essential. As a business owner you need to save for the future and future equipment you might need. This will not only help you to grow your business, but also increase your profits even more. Because you might run out of money at a time when you really need it.

How do you save for a rainy day?

- Compile a monthly budget for your business and include the amount you wish to save monthly.
- Open an account at a bank.
- Learn more about various interest rates you could earn at your bank and how.
- Minimise unnecessary expenditure. Only spend money on the things you really need, not what you want.

Source: YouTube – Secret Millionaires Club (Warren Buffet)

TREATING CUSTOMERS RIGHT



Becoming an entrepreneur is challenging, but dealing with customers can sometimes be even more challenging. If you do not have customers or clients, your product will not sell. It is important to treat your customers well, so that they will come back and purchase your product again.

1. LISTEN TO YOUR CUSTOMER

Lend a listening ear and show you care. Sometimes customers just need to feel that you listen to them.

2. TAKE YOUR CUSTOMERS SERIOUSLY

Make your customers feel appreciated. It does not matter if the question is ridiculous to you, it is important to the customer.

3. STAY CALM

Your calming approach will make the customer feel calm too and build confidence that you can solve their problem.

4. APOLOGISE IF NECESSARY

If something went wrong, apologise to your customer. You will be surprised how far the words 'I'm sorry' can go. Do not play the blame-game, simply apologise for their problem then deal with the problem at hand.

5. IDENTIFY AND ANTICIPATE NEEDS

The better you know your customer, the more you can anticipate their needs. Usually a customer acts more emotional than logical.

6. SUGGEST SOLUTIONS

Have a list of solutions with you, that you can refer to when a customer comes to you with a problem.

7. ACKNOWLEDGE YOUR LIMITS

Remember, you can't be everything to everyone. If you cannot find a solution, help them to find an alternative option. They will appreciate you going the extra mile for them.

8. GET REGULAR FEEDBACK

One way of growing your business and your skills is gaining feedback. Sometimes customers bring something to light that can help you improve your business.

Source: smallbusinessbc.ca

SUDOKU



		3	6	9				
1	5	7	4		8	9		
	6	2		1		8		5
			9					
	9			3	1	2		
5	2					1		
2					4		8	
7			8					2
		6		7		5		4

Fill in the grid with the number 1 to 9 so that each number is only used once in each row across, each column down, and every 3 by 3 box. Do not guess the answer. Think logically about which numbers may appear, and especially which number may not appear in a block.

Source: mathinenglish.com

Answers: 4-8-3-6-9-5-7-2-1; 1-5-7-4-2-8-9-6-3; 9-6-2-3-1-7-8-4-5; 3-7-1-9-8-2-4-5-6; 6-9-4-5-3-1-2-7-8; 5-2-8-7-4-6-1-3-9; 2-3-9-1-5-4-6-8-7; 7-4-5-8-6-9-3-1-2; 8-1-6-2-7-3-5-9-4

LEVEL UP



To gain better understanding of information presented to you, you can apply the four levels of questioning. These questions will provide you with an analytical approach and a better understanding of the information. You can apply this to any book you read or even a debate.

When you want to apply these levels of questioning, run through them all and see which one will be the best analytical fit for you. It might just be one category, or even all four!

ROBOT

- Who, what, where, when?
- What happened first, second, and third?
- Who are the characters, what is the setting, what is the problem?

DETECTIVE

- Why...?
- What caused...?
- What do you predict?
- What does the author mean?
- What do you think?

JUDGE

- What things did [the character do] that were...?

- Do you think...?
- Would you agree that...?
- In your opinion...?
- Do you agree with the author? Why or why not?
- How did you feel about the part where...?
- Would it be better if...?
- How do you know...?

INVENTOR

- How would you...?
- Were you ever...?
- What would you do if...?
- If you were ... had ... ?

Source: patheos.com

CHEMICAL VS PHYSICAL



In the world of science you get both chemical and physical changes. When a new substance is made, it is a chemical change, such as burning a candle. With a physical change no new substance is made, like when water turns to ice.

CHEMICAL CHANGES

For a chemical change to occur, two or more materials are combined to create a new substance. Fireworks is a good example of a chemical reaction, as well as rust on an iron nail.

When you notice bubbles forming on a surface or a change in colour or temperature, there is a good chance that a chemical change has taken place.

How do you determine a chemical change?

Ask yourself the following question: Was the substance formed present before? If your answer is no, then it is a chemical change. Most chemical changes cannot be undone, as it is a new substance. For example, if you burn wood, you cannot turn the burnt wood into a log again.



PHYSICAL CHANGE

There are various types of physical changes. A physical change includes a change in the shape or appearance of an object, like cutting, crumbling, or bending an object.

There are three common states of matter: solid, liquid, and gas. When a substance changes states, for example from liquid to gas, it is undergoing a physical change.

Objects do not become a different substance with a physical change and you can reverse the change. For example, if you dissolve sugar in water, you can reverse the change by evaporating the water from the solution. When all the water has evaporated, sugar crystals will remain behind.

There are numerous chemical and physical changes that happen around us daily. When you eat cereal, the milk and the cereal is a physical change. When the cereal is being digested, a chemical change occurs.

What chemical or physical changes have you spotted today?

TEASING TOM & THE TRY-OUTS



Peter dreaded going to school today. It was just going to be another day of getting through Teasing Tom's remarks. At breakfast, Peter's mom notices he is in a sombre mood. "It's first team rugby try-outs today. You've been practising so hard. Aren't you excited, Peter?", asked his mom. "Not really. Tom and his friends have been telling me I'm too small to join the first team. And what do I know? It's going to be their second year on the first team.", replied Peter. "Each person on a team brings their own qualities, no matter their size. You will bring a set of your own qualities the team needs. Luckily, Tom is not the coach, your coach will make the decision.", reassured Peter's mom.

Feeling a bit more positive, Peter heads out, meets up with his best friend, Siphon, and catches the bus to school. On the way, Siphon could not stop talking about the try-outs. With strategies planned, and excitement to get the day over. The moment finally arrived – it's time for try-outs.

"What are you even trying out for puny Peter? The under 8's?", screamed Tom from across the field. Peter could hear his friends laughing with him. But he blocked them out and played his heart out, remembering all the strategies he and Siphon discussed.

As the team gathered after try-outs, Coach Carl congratulated all the boys for an amazing afternoon, "Well done, boys! My decision was very difficult, especially with newcomers like Peter showing great talent and speed on the field." Peter could not believe his ears. He turned to look at Tom, the comment clearly wiped the smug smile off his face. "Listen carefully for your name on the list.", said Coach Carl. As Coach read the list, Peter could not contain his excitement. No matter what, he did his best and Coach pointed it out in front of everyone. And there it was... "And finally, welcome Peter. We're really going to have a top-notch team with your speed added.", said Coach Carl. Siphon smiled and gave Peter a clap on the back. Wow, what a day!

HOW CAN YOU WIN TEASING WISELY?

- 1. Find something you are good at** | When you do things that you are good at, you will feel more confident, whether it is a sport or something in the arts.
- 2. Ask an adult for help** | Sometimes you cannot handle the situation on your own. Speak to an adult to help you.
- 3. Do not react to the teasing** | Usually the person that is teasing you wants a reaction from you. Ignore them or simply walk away.
- 4. Practise visualisation** | Imagine the words are coming towards you like arrows, but you are wearing a full set of armour. The moment the arrows hit you, it bounces off easily.

- 5. Turn teasing into a compliment** | Teasers want to make the other person feel hurt. Try to turn something negative into something positive. For example, if you wear spectacles and the teaser calls you "four-eyes", thank them for noticing the specs. This will confuse them, and they will most likely not do it again, because they are not getting the reaction they want.

- 6. Agree with facts** | If the teasing is based on something true, like having freckles, agree with the teaser. This will show them that you are confident and not afraid of them. Never feel bad about yourself, there is nothing wrong with spectacles or freckles. You are perfect just the way you are.

Source: [brightside.me](https://www.brightside.me)



PICK YOUR POISON



What's the difference between poisonous and venomous? Well, it actually all comes down to the method of delivery. Both poisonous and venomous animals use their toxins to protect themselves against danger, like being eaten by a predator.

VENOM

When an animal is venomous, it means the venom needs to be injected to be effective via a bite or a sting. Venom bypasses the digestive system via wounds in the body. Besides snakes, you also get venomous spiders, lizards, scorpions, wasps, etc. Venom can be given via a toxic bite, but nature has other ingenious strategies.

An animal like the Komodo dragon that lives in southeastern Indonesia islands has its very own venomous saliva. Other venomous animals use their stinger or spine. The Greening frog uses small spines on its head to attack with a toxic headbutt. A nocturnal primate from Southeast Asia, the slow loris, has glands underneath its upper arms that produce toxins. The slow loris will lick up the toxins and bite when threatened.

POISON

For an animal to be poisonous, means that the animal unloads its toxins when you eat them. Poisonous animals include most amphibians, like frogs, toads, and salamanders. They carry around an amount of toxins on their skin and within their skin tissue. When a predator eats a poisonous animal, the toxins travel quickly through their body which can cause temporary illness or death. Many poisonous animals do not produce their own toxins like venomous animals

but rather get it from their environment.

For example, monarch caterpillars eat toxic milkweed plants, which gives them a bitter taste when they are fully grown.

Can you spot when an animal is poisonous? Not necessarily, however brilliant colours do need to make you a little suspicious, especially the brilliant poison frogs in Central and South America. Colombia's golden poison frog is one of the most poisonous animals.



A BIT OF BOTH WORLDS

Thanks to pores in their fangs, the spitting cobra can bite and spray painful, blinding venom at the face of its victims.

Remember, it is not only animals that can be poisonous, plants can be poisonous too! In some cases, not the whole plant is poisonous, only parts of it. For example, the stem and leaves are safe to eat, but not the berries.

Sources: sciencefocus.com | nationalgeographic.com | reconnectwithnature.org | britannica.com



MATHS



Calculate the following without written calculations.

1. $1\ 350 + 1\ 350 =$ _____
2. $123 - 24 =$ _____
3. $7\frac{1}{2} + 21\frac{1}{2} =$ _____
4. Triple 150 = _____
5. Double 499 = _____
6. $555 \div 555 =$ _____
7. $590 \times 0 \times 2 =$ _____
8. $6\ 300 \times 1 =$ _____
9. $998 + 3 =$ _____
10. $5\ \text{million} + 9\ \text{million} - 5\ \text{million} =$ _____
11. $3\ 000 \times 300 =$ _____
12. Half of 25 = _____
13. 1 quarter of 4 000 = _____
14. $0,1 + 0,04 =$ _____
15. $500 + 600 + 100 =$ _____
16. $50 - 20 + 29 =$ _____
17. $2\ 125 - 25 =$ _____
18. $2\ 350 + 350 + 1 =$ _____
19. $123 - 25 =$ _____
20. $9\frac{1}{2} + 21\frac{1}{2} =$ _____
21. Triple 120 = _____
22. Double 299 = _____
23. $60 \times 3\frac{1}{2} =$ _____
24. $666 \div 666 =$ _____
25. 100% from 100 = _____
26. $599 \times 0 \times 2 =$ _____
27. $3\ 301 \times 1 =$ _____
28. $798 + 2 - 49 =$ _____
29. $6\ \text{million} + 9\ \text{million} - 5\ \text{million} =$ _____
30. $40 \times 30 \div 1 =$ _____
31. Half of 27 = _____
32. 1 quarter of 10 000 = _____
33. $0,1 + 0,05 =$ _____
34. $25\frac{1}{2} + 26\frac{1}{2} =$ _____
35. $310 + 130 =$ _____
36. 75% of 100 = _____
37. $50 - 30 + 59 =$ _____
38. $3\ 125 - 125 =$ _____
39. $1\ 350 + 350 + 0 =$ _____
40. $123 - 26 =$ _____
41. $9\frac{1}{2} + 11\frac{1}{2} =$ _____
42. Triple 160 = _____
43. Double 499 = _____
44. 40% of 100 = _____
45. $777 \div 777 =$ _____
46. $999 \times 0 + 2 =$ _____
47. $1 \times 4\ 301 =$ _____
48. $888 + 12 - 100 =$ _____
49. 10% of 100 = _____
50. $212 + 88 =$ _____

DO YOU KNOW THESE WORDS?

Challenge yourself and see how many you know.

- | | | | |
|------------|-------------|---------------|--------------|
| gallop | gratingly | hesitate | labyrinthine |
| galvanize | hallucinate | incoherent | legislature |
| generation | haphazard | instigate | leguminous |
| genus | heliotrope | inundate | mackerel |
| glitterati | heredity | investigation | macrocosm |



Answers: 1. 2 700; 2. 99; 3. 29; 4. 450; 5. 998; 6. 1; 7. 0; 8. 6 300; 9. 1 001; 10. 9 million; 11. 900 000; 12. 12½ or 12,5; 13. 1 000; 14. 0,14; 15. 1 200; 16. 59; 17. 2 100; 18. 2 701; 19. 98; 20. 31; 21. 360; 22. 598; 23. 210; 24. 1; 25. 100; 26. 0; 27. 3 301; 28. 751; 29. 10 million; 30. 1 200; 31. 13½ or 13,5; 32. 2 500; 33. 0,15; 34. 52; 35. 440; 36. 75; 37. 79; 38. 3 000; 39. 1 700; 40. 97; 41. 21; 42. 480; 43. 998; 44. 40; 45. 1; 46. 2; 47. 4 301; 48. 800; 49. 10; 50. 300

PHASES OF THE MOON



Have you ever looked up at the moon and wondered why it looks different every night? No, it does not change shape, there is just different phases of the moon!

Although the moon lights up every night, it does not shine a light itself like the sun. The moonlight that we see at night is the sun's light reflecting off the lunar surface – the moon's surface.

The Earth orbits the sun, and the moon orbits the Earth. As the moon is orbiting our planet, the sun lights up different parts of the moon, seeming

like the moon is changing shape, but it is just our view of the moon. It takes the moon 27.3 days to orbit around the Earth. However, due to the Earth orbiting the sun, it takes the moon 29.5 days to go through the eight phases in a lunar month, meaning the moon goes through its phases every single month.

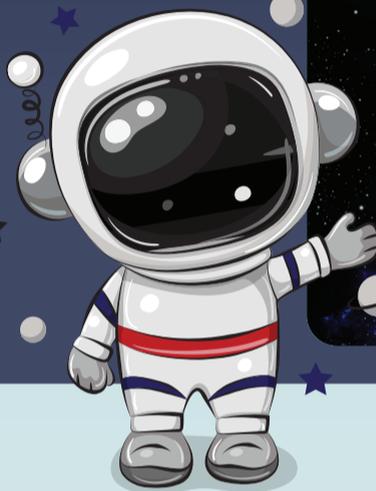
Does the moon sometimes appear to be getting bigger? This is called waxing. When it looks like it is getting smaller, it is called waning. During a full moon, the moon is fully turned towards the sun. As the moon orbits the Earth, the face we see becomes more hidden from the sun and is called the new moon.

LUNAR ECLIPSE

When the Earth comes between the sun and the moon, it blocks the sunlight from the moon, creating a lunar eclipse. A total lunar eclipse occurs when the moon and the sun are on opposite sides of the Earth. A partial lunar eclipse occurs when only part of Earth's shadow covers the moon.

During some of the stages of a lunar eclipse, the moon can appear reddish. This happens because the only sunlight that reaches the moon is around the edges of the Earth. If you are an observer during an eclipse, you would see all the Earth's sunrises and sunsets at once.

Sources: natgeokids.com | solarsystem.nasa.gov



HOW TO MAKE A VOLCANO



INSTRUCTIONS

This experiment can get messy! It is best to go outdoors and have fun doing the experiment without worrying about the mess.

1. Take the empty cooldrink bottle and pour in the vinegar, water, dish soap and two drops of food colouring of your choice.
2. Take the cup with the baking soda and water and stir it with a spoon to mix it until it is a liquid.
3. Pour the baking soda into the cooldrink bottle, quickly step back and watch it erupt!

Top tip: To pour the liquids easier in to the cooldrink bottle, ask an adult to cut the neck of the cooldrink bottle open. It will give you a bigger opening to pour the liquids into.

HOW DOES IT WORK?

A chemical reaction between the vinegar and baking soda creates a gas called carbon dioxide. Carbon dioxide is the same type of gas used to make the carbonation in sodas. Think about when you are shaking a

cooldrink bottle, the gas gets very excited and tries to spread out. There is not enough room in the bottle for the gas to spread out, so it leaves through the opening very quickly, causing an eruption.

VARIABLES

Change the amounts of the following:

- Vinegar
- Water
- Baking soda

By changing the above, it will influence the eruption of the volcano.

Source: sciencefun.org

YOU WILL NEED

- 10 ml of dish soap
- 100 ml of warm water
- 400 ml of white vinegar
- Food colouring of your choice
- Baking soda slush (fill ½ a cup with baking soda, then fill the rest of the way with water)
- A 2 litre cooldrink bottle – empty

DO YOU KNOW THESE WORDS?

Challenge yourself and see how many you know.

menthol	multiplication	oracle	pecuniary
misdemeanour	noctambulist	organist	pedicure
mitochondria	nocturnal	pageantry	perfume
molars	notoriety	palladium	perilous
mulligan	occupancy	palpitant	



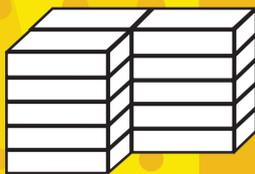
PROBLEM SOLVING

Solve the problems using any strategy. You must be able to explain your reasoning in getting to the answer.



1. How many blocks did Tacia use to build this shape?

- (A) 11 (B) 13 (C) 10 (D) 15 (E) 20



2. Halima is reading a book. Chapter 7 begins on page 246 and ends on page 274. How many pages are there in chapter 7?

- (A) 274 (B) 28 (C) 15 (D) 29 (E) 30

3. If my watch now shows 10:00, what will the time be 100 hours from now?

- (A) 10:00 (B) 11:00 (C) 12:00 (D) 13:00 (E) 14:00

4. A rectangular bathroom wall measures 3 m by 2 m. It is covered with square tiles measuring 20 cm by 20 cm. How many tiles are there altogether?

- (A) 300 (B) 30 (C) 15 (D) 200 (E) 400

5. What is the only whole number between one and ten which **does not divide** exactly into 360?

- (A) 4 (B) 6 (C) 7 (D) 8 (E) 9

6. Which square is the same as the one below?



- (A) (B) (C) (D) (E)

7. Which one of the following figures below **cannot be** folded along the lines to form a cube?



- (A) (B) (C) (D) (E)

8. The symbol \diamond represents a number. What value of \diamond makes this sentence true?

$$\frac{\diamond}{2} = \frac{32}{\diamond}$$

- (A) 4 (B) 64 (C) 8 (D) 17 (E) 16

9. In which one of the following is half of the figure shaded?



- (A) (B) (C) (D) (E)

10. A train departs from Bellville station at 09:47 and arrives in Cape Town at 10:18. Another train on the same route leaves Bellville at 12:30. At what time does it arrive in Cape Town?

- (A) 13:18 (B) 13:01 (C) 01:01 (D) 13:12 (E) 12:51

11. You and your friend have the same amount of money. How much should you give her so that she has R10 more than you?

- (A) R15 (B) R10 (C) R20 (D) R29 (E) not one of these

12. Thomas forgot to take off his shoes when he got onto the scale to weigh himself. The scale showed 41 kg. He then weighed his two shoes and found that they had a mass of 725 g. What was his mass without his shoes?

- (A) 40,175 kg (B) 40,725 kg (C) 39,275 kg
(D) 41,725 kg (E) 40,275 kg

13. A factory manufactures dresses and shirts: 3 dresses are manufactured for every 4 shirts. In a week the factory produced a total of 420 dresses and shirts. How many of these were dresses?

- (A) 180 (B) 240 (C) 140 (D) 315 (E) 120

14. On a digital clock displaying hours, minutes and seconds, how many times in each 24-hour period do all six digits change simultaneously?



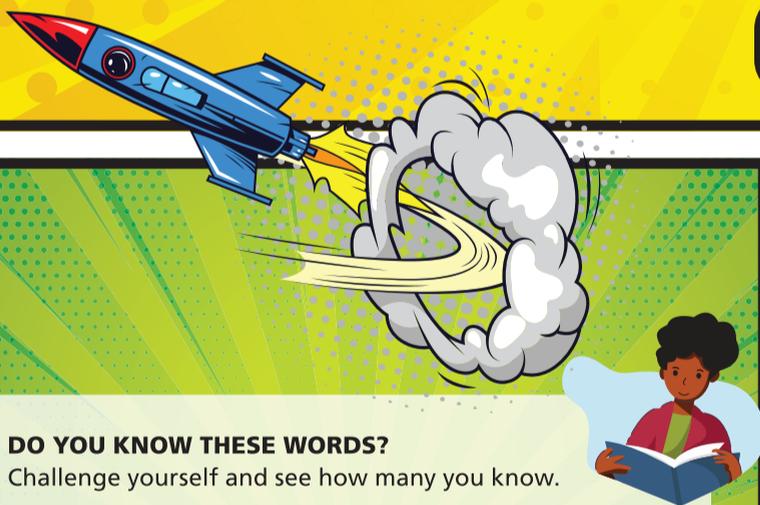
- (A) 0 (B) 1 (C) 2 (D) 3 (E) 24

15. Sipho uses dots to build T-shapes as shown below. How many dots will he use for T₅₀?



- (A) 101 (B) 201 (C) 500 (D) 151 (E) 501

Answers: 1. D; 2. D; 3. E; 4. C; 5. C; 6. B; 7. E; 8. C; 9. B; 10. B; 11. B; 12. E; 13. A; 14. D; 15. D



DO YOU KNOW THESE WORDS?

Challenge yourself and see how many you know.

- | | | |
|----------------|---------------|----------------|
| peripheral | sacrifice | surmountable |
| pervasive | salamanders | tapestry |
| pharaoh | sarcophagus | taxonomic |
| plaiting | scenographer | testimony |
| prenuptial | scoundrel | throughout |
| psychoanalysis | scrooge | transcription |
| quizzical | seethe | transparencies |
| ramparts | serenade | traverse |
| rectitude | solace | trellis |
| reimbursable | solstice | uranium |
| reiterate | sophisticated | vacuousness |
| rejuvenate | spleen | valedictorian |
| reluctant | squander | vinyl |
| repository | stereotypical | visage |
| requisition | stimuli | vividly |
| | subterranean | wearisome |
| | sundering | wreath |

MATHS



Calculate the following. You may use any strategy.

- $30 \div 30 \times 100 + 500 =$ _____
- $30\,001 + 310 - 11 - 30\,000 =$ _____
- $(10\% \text{ of } 100) + 1\,000 =$ _____
- $(40\frac{1}{4} \times 4) \times 10 =$ _____
- $(450 + 550) \times 5 \times 2 - 1 =$ _____
- $4\,000 \div 200 \times (2 + 98 \times 1) =$ _____
- $1\,700 - 1\,000 - 500 + (35 + 65) \times 1 =$ _____
- $35 \times 2 + (9\,999 \times 0) \times 2 \times 10 =$ _____
- $20\% \text{ of } 100 \times (\frac{1}{4} \text{ of } 8\,000) =$ _____
- $(99 + 101 \times 1) - (144 \div 12) =$ _____

Answers: 1. 600; 2. 300; 3. 1 010; 4. 1 610; 5. 9 999; 6. 2 000; 7. 300; 8. 1 400; 9. 40 000; 10. 188