GROW SMART

Second Edition 2017

GROW SMART
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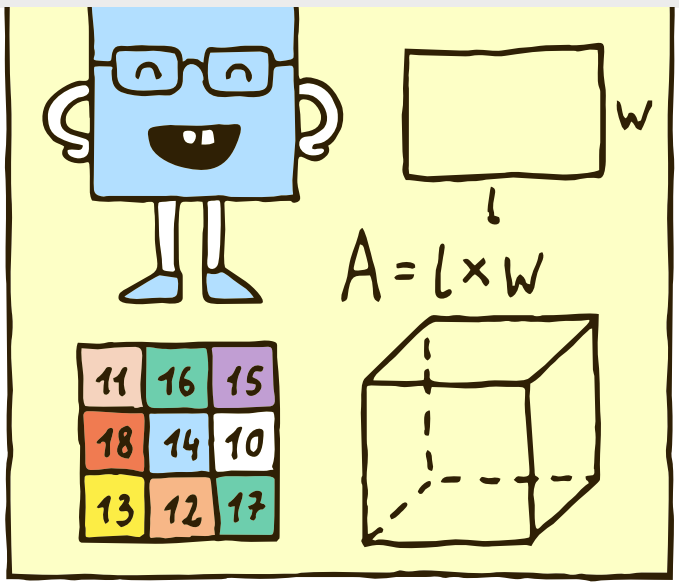
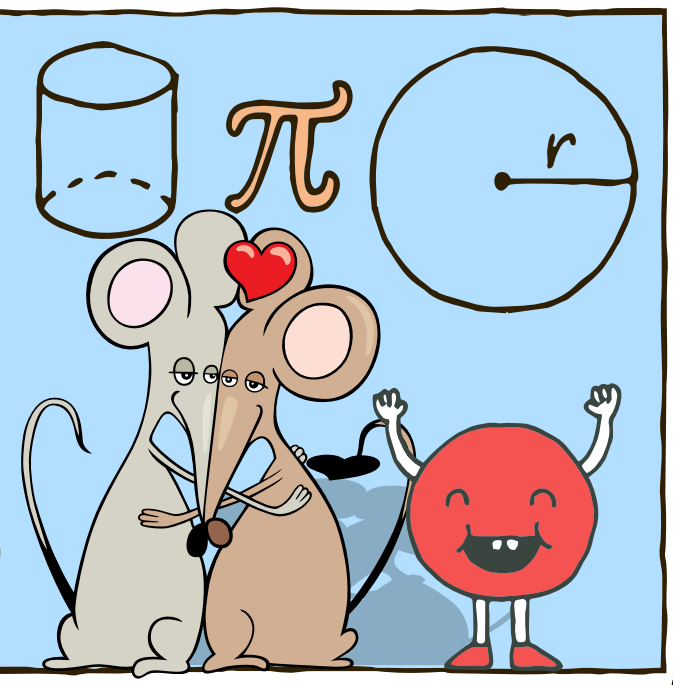
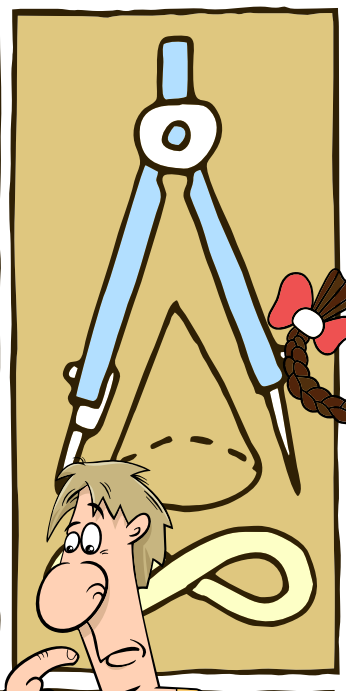
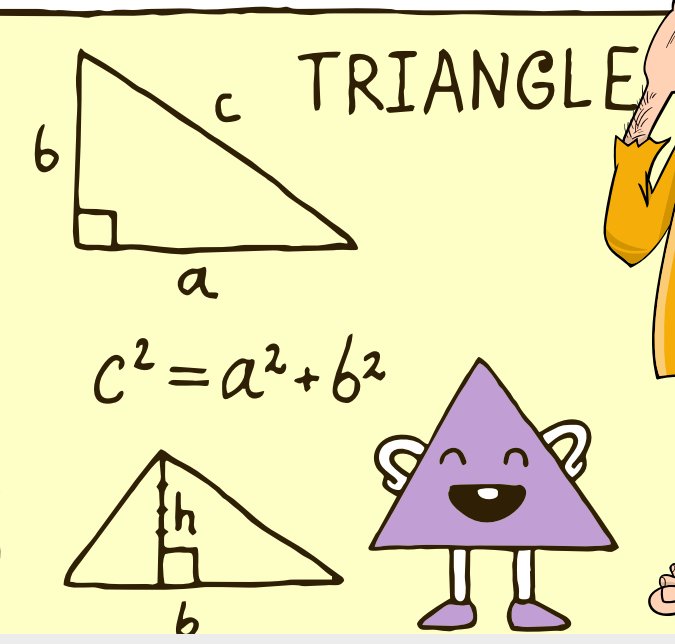


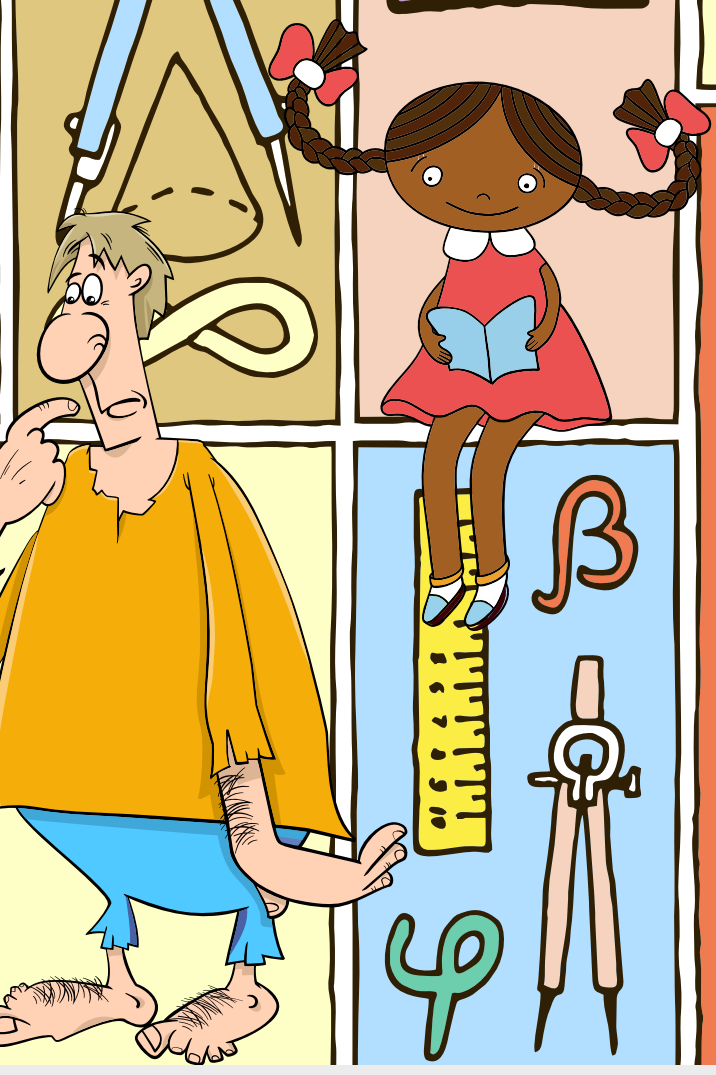
$$(ab)^n = a^n b^n$$
$$a^m \times a^n = a^{m+n} \quad a^0 = 1$$

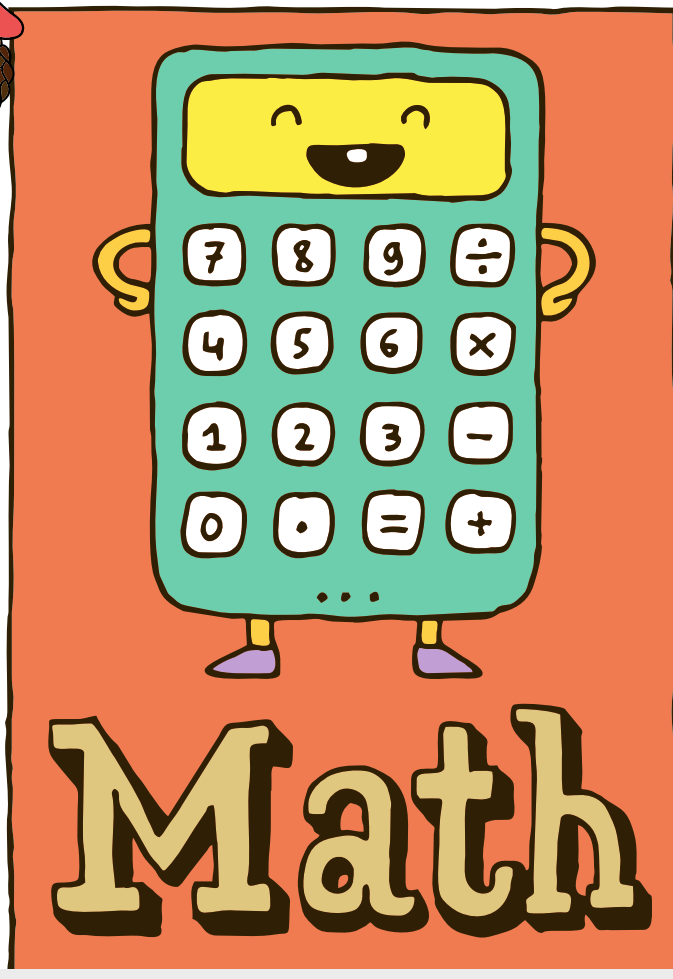




$$a^2 - b^2 = (a+b)(a-b)$$
$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$







DEAR GROWSMARTER !

Welcome to the 2nd edition of the Growsmart newspaper for 2017. We encourage you to read every page, because reading is important for so many reasons.
The benefits of reading start with the first book a baby hears and continue into childhood and throughout our lives. Children get better at reading the more often they read. Reading exercises our brains and improves concentration. It teaches us about people, places and things we've never experienced. It improves our imagination, our vocabulary and our language skills. It helps us do better at school. Here is what some famous people have to say about reading:

"If you don't have time to read, you don't have the time or the tools to write. Simple as that." - Stephen King

"Today a reader, tomorrow a leader."- Margaret Fuller

"Writing comes from reading, and reading is the finest teacher of how to write."- Annie Proulx

"If you don't like to read, you haven't found the right book."- J.K. Rowling

"Show me a family of readers, and I will show you the people who move the world." - Napoleon Bonaparte

"When I got my library card, that was when my life began."- Rita Mae Brown

Maths 1

CALCULATE THE FOLLOWING. YOU MAY USE ANY STRATEGY.

1. 3 550 + 750 x 1 = ...
2. 500 ÷ (200 + 0) = ...
3. 5 988 x 100 + 2 = ...
4. 310 x 1 000 x 10 = ...
5. $^{1}/_{5}$ of 100 + 35 = ...
6. (15 010 + 201) x 100 = ...
7. 6 500 + (15 000 – 7 000) = ...
8. 26 321 x 0 ÷ 1 = ...
9. 40 000 ÷ 2 + 13 000 = ...
10. (84 017 – 17) ÷ 2 + 2 800 = ...
11. 4 010 + 110 + 1 = ...
12. 45 000 ÷ (0 + 15 000) = ...
13. 59 898 x 10 + 2 = ...
14. 13 250 x 100 x 10 = ...
15. 125 ÷ 25 x 3 = ...
16. (11 999 + 101) x 1 = ...
17. 6 750 + (10 050 – 6 750) = ...
18. 11 110 x 0 ÷ 1 = ...
19. 10 100 ÷ 2 + 5 050 = ...
20. (65 789 – 789) ÷ 2 + 7 500 = ...
21. 234 + 456 = ...
22. 1 024 – 25 x 2 = ...
23. 12 567 + 24 433 = ...
24. 550 x 1 100 = ...
25. 625 ÷ 25 = ...
26. 833 + 67 x 100 = ...
27. $^{2}/_{5}$ of 200 + 66 = ...
28. (1 750 + 250) x 5 = ...
29. 18 + (26 – 13) + 119 = ...
30. 10 000 x 0 = ...
31. 6 000 ÷ 6 + 500 = ...
32. (264 – 164) ÷ 4 + 1 495 = ...
33. 11 111 - 111 + 11 = ...
34. 210 ÷ (3 + 4) = ...
35. 400 x $^{3}/_{8}$ = ...
36. 6,25 + 5,75 + 2 = ...

ANSWERS
1.4 300, 2.2,5, 3.598 802, 4.3 100 000, 5.55, 6.1 521 100, 7.14 500, 8.0, 9.33 000, 10.44 800, 11.4 121, 12.3, 13.598 982, 14.13 250 000, 15.15, 16.12 100, 17.10 050, 18.0, 19.10 100, 20.40 000, 21.690, 22.974, 23.37 000, 24.605 000, 25.25, 26.7 533, 27.146, 28.10 000, 29.150, 30.0, 31.1 500, 32.1 520, 33.11 011, 34.30, 35.150, 36.14

Maths 2

ANSWER AS MANY AS POSSIBLE. DO NOT PAUSE IF YOU DO NOT KNOW THE ANSWER IMMEDIATELY.

11	16	15
18	14	10
13	12	17

1. 1 000 x 0 = ...
2. 89 + 2 = ...
3. 500 ÷ 4 = ...
4. 550 + 50 – 100 = ...
5. 22 x 100 = ...
6. 325 ÷ 0 = ...
7. 398 x 1 = ...
8. 1 500 doubled = ...
9. 3 000 ÷ 1 000 = ...
10. 0,45 + 0,55 = ...
11. 1 ½ + 5 ½ = ...
12. 90 x 90 = ...
13. 288 + 12 = ...
14. 2 400 x 2 = ...
15. 2 000 x 20 = ...
16. Half of 11 = ...
17. 10 – 5 ½ = ...
18. 23 x 3 = ...
19. 4 000 ÷ 500 = ...
20. 17 x 20 = ...
21. 12 x 12 = ...
22. 52 + 18 = ...
23. 1 000 ÷ 5 = ...
24. 550 + 150 – 50 = ...
25. 7 x 100 = ...
26. 199 + 10 = ...
27. 222 x 1 = ...
28. 200 tripled = ...
29. 6 000 ÷ 1 000 = ...
30. 0,85 + 0,15 = ...
31. 1 ½ + 15 = ...
32. 9 x 300 = ...
33. 677 + 23 = ...
34. 6 300 x 2 = ...
35. 20 000 x 2 = ...
36. Half of 51 = ...
37. 200 – 5 ½ = ...
38. 25 x 3 = ...
39. 1 000 ÷ 1 000 = ...
40. 0 x 305 = ...
41. 29 x 2 = ...
42. 39 + 25 = ...
43. 10 000 ÷ 2 = ...
44. 250 + 250 – 200 = ...
45. 13 x 100 = ...
46. 199 – 100 = ...
47. 314 x 1 = ...
48. 7 250 doubled = ...
49. 4 000 ÷ 10 = ...
50. 0,99 + 0,01 = ...

ANSWERS
1.0, 2.91, 3.125, 4.500, 5.2 200, 6.0, 7.398, 8.3 000 9.3, 10.1, 11.7, 12.8 100, 13.300, 14.4 800, 15.40 000, 16.5.5, 17.4.5, 18.69, 19.8, 20.340, 21.144, 22.70, 23. 200, 24. 650, 25.700, 26.209, 27.222, 28.600, 29.6, 30.1, 31.16.5, 32.2 700, 33.700, 34.12 600, 35.40 000, 36.25.5, 37.194.5, 38.75, 39.1, 40.0, 41.58, 42.64, 43. 5 000, 44. 300, 45.1 300, 46. 99, 47.314, 48.14 500, 49.400, 50.1

Maths 3

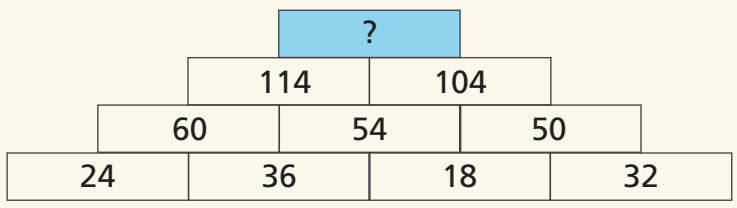
SEE IF YOU CAN SOLVE EACH PROBLEM. YOU WILL NEED TO BE ABLE TO EXPLAIN YOUR ANSWERS MATHEMATICALLY.

1. A tree was planted in 1772.
How many years old will it be in 2020?
(A) 218 **(B)** 236 **(C)** 248 **(D)** 256 **(E)** 284

2. A baby boy's mother is 28 years old when he is born. When the boy is 13 years old, what will be the age difference (in years) between him and his mother?
(A) 13 **(B)** 18 **(C)** 26 **(D)** 28 **(E)** 41

3. There are four piles of coins. There are 6 coins in the first pile, 10 in the second, 12 in the third, and 16 in the fourth pile. If Alexandra shares all the coins equally with Luke, how many coins will Luke receive?
(A) 10 **(B)** 12 **(C)** 18 **(D)** 20 **(E)** 22

4. What is the missing number?



(A) 218 **(B)** 66 **(C)** 164 **(D)** 110 **(E)** 72

5. A mother, father and their twin daughters each have 32 teeth. The grandmother and grandfather each have 23 teeth. How many teeth does the family have in total?
(A) 100 **(B)** 122 **(C)** 166 **(D)** 174 **(E)** 142

6. Farmer William is preparing to plant a crop of potatoes. The field will have 140 rows with 210 potato plants in each row. Farmer William says that they will plant the entire field in 14 hours with their planting machine. How many potato plants will they plant in each hour?
(A) 2 000 **(B)** 2 050 **(C)** 2 100 **(D)** 2 150 **(E)** 2 200

7. Mrs. Benjamin has bought treats for the learners in her class. She bought 10 small toys for R5,39 each, and 10 packets of sweets for R7,99 each. How much change did she receive if she paid with a R200 note?

(A) R66,20 **(B)** R21,00 **(C)** R122,00 **(D)** R68,79
(E) R15,11

ANSWERS
1.C 2.D, 3.E, 4.A, 5.D, 6.C, 7.A

OUR HOME IN SPACE

There are eight planets that circle around the Sun, and Earth is one of them. There used to be nine planets, but in 2006 it was decided that the ninth planet, Pluto, wasn't really a planet after all, but rather a "dwarf planet". The path that each planet follows as it circles the Sun is called an "orbit". All the planets also rotate, which means they spin like a basketball spinning on the tip of a player's finger. The Sun and all its planets is called the Solar System.

The Sun is a star – one of billions and billions of stars in the universe. The size of the Sun is about as big as two hundred Earths. The planet closest to the Sun is called Mercury. We say "closest", but the distance from Mercury to the Sun is about the same as if you walked 4 500 times around the Earth! A year on Mercury is about 88 days, because that's how long it takes to circle the Sun.

The second planet from the Sun is Venus, and it's about the same size as Earth. Venus rotates (spins) very slowly. In fact, Venus takes about 225 of our days to rotate once, while Earth rotates once every 24 hours.

The third planet from the Sun is our home, Earth. Our planet is exactly the right distance from the Sun for life to flourish, because the temperature is not too hot or too cold. We have one moon which rotates very slowly. In fact, it rotates at just the right speed so that when you look at the Moon, you will always see the same side!

The next planet is Mars. A day on this reddish planet is about the same as on Earth. Mars has two moons called Deimos and Phobos.

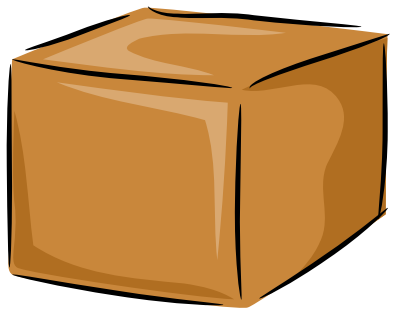
Then we get Jupiter, which is the largest planet in the Solar System and it has 16 moons. Jupiter is so big that 1 300 Earths could fit inside it. The amazing thing about this huge planet is that it only takes about 10 hours to rotate – which means it has a very short day.

The coolest thing about the sixth planet, Saturn, is that it has rings. The rings are not solid, but are actually made up of millions of pieces of rock and ice that circle the planet. Jupiter and Uranus also have rings, but Saturn's rings are much easier to see.

Uranus is the second last planet and it takes about 84 Earth years to orbit the Sun. And finally, at the end of our journey is Neptune – about 4 504 000 000 kilometres from the Sun.

Source: www.sciencemonster.com

WHAT IS MATTER?



All solids, liquids and gases are what we call "matter".
Matter is anything that takes up space and has mass, which means it can be weighed. Because there are different kinds of matter, we need to know what makes each one special and how they behave differently from other kinds. We call these differences "properties". For example, water is a liquid that can flow and it has no fixed shape, therefore we say that two properties of liquids are that it flows and it takes the shape of the container that it is in. Solids, such as buildings and books, can't flow and they have a fixed shape, therefore two properties of solids are that they can't flow and their shape does not change. Two properties of gases are that they can flow and they fill up all the space that is available. Examples of gases are oxygen and carbon dioxide.

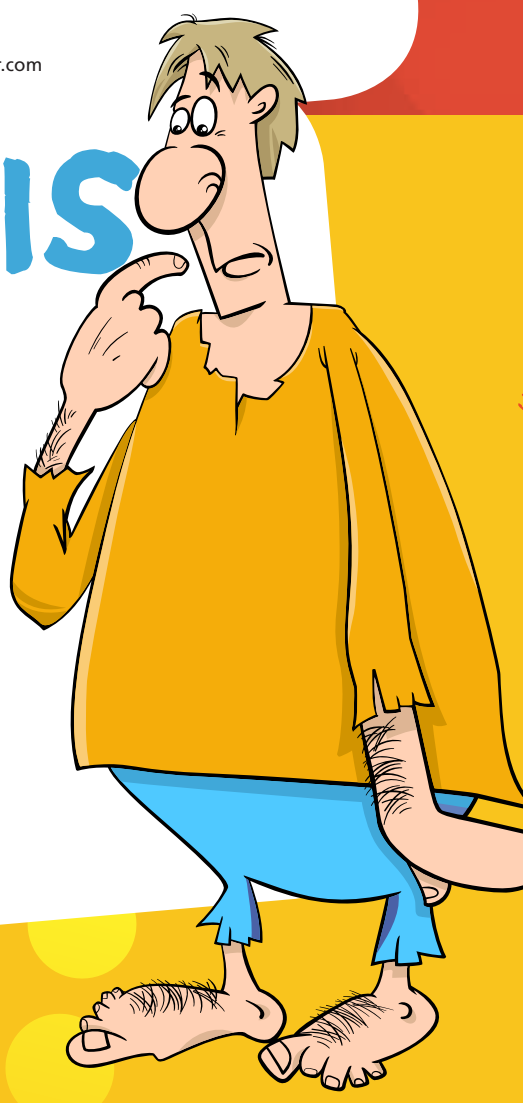
All matter around us is in one of three forms: solid, liquid or gas. We call this form the "state" of matter, and matter can change from one state to another. Water can be in a liquid state, but if you freeze it and it becomes a block of ice, then it will be in a solid state. If you heat the block of ice in a pot, then it will melt back into a liquid state. Boiling the water will change it into steam (also called water vapour), which is a gas. When steam cools down, it forms tiny droplets in the air as it starts changing into a liquid again. If you hold a mirror over the steam from a boiling kettle, you will see water droplets starting to form on the mirror. When water vapour forms drops of liquid, we call it "condensation".

What was it that caused the water to change its state? It was temperature! We removed heat to freeze the liquid into a solid, we added heat to melt it back into a liquid, we added more heat to boil it to become a gas, and we removed heat to make the gas condense back into a liquid.

Not everything is made up of matter, so don't confuse matter and energy. Heat and light are examples of energy which do not take up space and cannot be weighed, so they are not types of matter. Everything that exists can be classed as either a form of matter or a form of energy.

Sources: www.thunderboltkids.co.za, www.factmonster.com

THE GIANT OF ILLINOIS



Robert Wadlow was the tallest man in medical history, according to the Guinness Book of World Records. When Robert was born in 1918 in Alton, Illinois (which is in the United States of America), his height and weight were normal for a baby. But by the time he was eight years old, he was already taller than his father. As the years passed he continued to grow and, at the age of 21, he was 2,72 metres tall – that's about 50% taller than an average man!

Robert's greatest recorded weight was 222 kilograms. His shoes were 47 centimetres long, which is about one and a half rulers. Each hand measured 32 centimetres from the wrist to the tip of the middle finger. Robert was also very strong and could carry his father – who weighed 77 kilograms – up the stairs of their house at the age of nine.

In 1940, when Robert was 22 years old, he developed a blister on his ankle. Robert had to wear braces on his legs because of his height, and a faulty brace is what irritated his ankle and caused the blister. The blister became infected and, although doctors treated him with a blood transfusion and emergency surgery, his condition worsened and he eventually died in his sleep.

Robert was famous for being the tallest man in the world, and he was known as The Alton Giant, The Giant of Illinois, and the Gentle Giant. There is a life-size statue of him in his home town of Alton, another one in the Guinness Museum in Niagara Falls, and several others at Ripley's Believe It or Not Museums.

Sources: www.kidsdiscover.com, www.en.wikipedia.org

DO YOU KNOW WHAT THESE WORDS MEAN?

abdomen
hammock
hooligan
identical
acquire
hexagon
infested
imaginary
actress
illegal
majority
irritated
advance
knuckle
omnivore
gratitude
agitate
mascara
omelette
lubricate
ailment
matador

opponent
margarine
aimless
provide
opposite
neighbour
amiable
reunion
puncture
parachute
amnesia
stamina
punctual
regularly
anchovy
toddler
recently
replenish
archery
vibrant
stubborn
statuette

aviator
adorable
sympathy
surrender
avocado
asteroid
universe
synagogue
baggage
basement
velocity
tangerine
balcony
blizzard
villager
temporary
bashful
boastful
waitress
tolerable
beneath
bumbling

youthful
accomplish
biltong
cannibal
albatross
amphibious
blemish
cardamom
ambulance
appreciate
blister
cardigan
apartment
automobile
chimney
cavities
avalanche
chimpanzee
collide
commuter
biography

contagious
combine
confetti
bilingual
dehydrated
cyclist
customer
carpenter
eightieth
cyclone
dandruff
centipede
fictitious
destiny
detonate
abbreviation
abhorrent
acceleration
accessory
acoustic
adequate

adjacent
adolescent
alienate
allergy
alliteration
ambivalent
amphibian
amphitheatre
apprentice
archaeologist
architecture
artificial
deficiency
dehydration
delirious
deterioration
controversial
conversation
consequence

WHY DO I READ? - By Gary Paulsen

I just can't help myself.
I read to learn and to grow,
to laugh and to be motivated.
I read to understand things
I've never been exposed to.
I read when I'm crabby, when I've just
said monumentally dumb things to
the people I love.
I read for strength to help me when
I feel broken, discouraged, and afraid.
I read when I'm angry at the whole world.
I read when everything is going right.
I read to find hope.
I read because I'm made up not just of
skin and bones, of sights, feelings, and
a deep need for chocolate, but I'm also
made up of words.
Words describe my thoughts and what's
hidden in my heart.
Words are alive – when I've found a
story that I love, I read it again and again,
like playing a favourite song over and
over.

Reading isn't passive – I enter the story
with the characters, breathe their air,
feel their frustrations, scream at them to
stop when they're about to do something
stupid, cry with them, laugh with them.
Reading for me, is spending time
with a friend.
A book is a friend.
You can never have too many.

WORD SEARCH

M	O	U	T	H	T	E	E	T	T	S	O	O	R	P
E	R	S	A	B	E	V	X	J	O	I	N	T	S	I
U	B	I	K	W	F	A	Y	O	N	N	E	C	S	U
Q	R	O	V	E	I	N	R	E	S	A	G	R	E	G
W	A	V	A	M	O	E	E	T	I	H	T	U	Y	L
Z	I	M	B	U	U	R	T	E	L	C	E	H	E	I
R	N	E	P	S	I	V	R	E	S	A	L	F	S	V
E	P	A	N	C	R	E	A	S	T	M	R	O	K	E
H	O	L	X	L	R	S	B	L	O	O	D	Y	I	R
I	O	D	E	E	N	I	T	S	E	T	N	I	N	E
L	U	N	G	S	I	E	B	E	T	S	D	O	E	X
T	N	O	T	E	L	E	K	S	Y	E	N	D	I	K

Find the following words hidden in the squares. The words may be found left to right, back to front, upside down or even diagonally across.

THE HUMAN BODY

Intestine | Stomach | Ribs | Liver | Skin | Kidneys | Lungs | Tongue | Skeleton | Blood | Eyes | Heart
Nerves | Mouth | Artery | Hair | Muscles | Tonsils | Joints | Pancreas | Vein | Brain | Teeth | Larynx

FILL IN THE MISSING WORDS TO COMPLETE THE FOLLOWING IDIOMS:

1. (Having no idea): Your _____ is as good as _____.
2. (Doing it exactly right): You hit the _____ on the _____.
3. (Dealing with a problem later): Let's cross that _____ when we _____ to it.
4. (Agreeing with someone): We see _____ to eye.
5. (To not take something too seriously): Take it with a _____ of salt.
6. (There's always hope): Every _____ has a _____ lining.
7. (Having the wrong idea): You're _____ up the wrong tree.
8. (The rain is pouring down): It's raining _____ and _____.
9. (Be brave): Keep a _____ upper lip.
10. (Be very calm): Cool as a _____.
11. (An untrustworthy person): A _____ in the grass.
12. (You both have the same problem): We're both in the _____ boat.
13. (It was very expensive): It cost an _____ and a _____.
14. (It doesn't happen often): Once in a _____ moon.
15. (To do two things at the same time): Kill two _____ with one _____.

ANSWERS:
1. guess, mine. 2. nail, head. 3. bridge, come. 4. eye. 5. pinch. 6. cloud, silver. 7. barking. 8. cats, dogs. 9. stiff. 10. cucumber. 11. snake. 12. same. 13. arm, leg. 14. blue. 15. birds, stone.

Vuyo and Gemma
ROBERT LEARNS AN IMPORTANT LIFE LESSON

One hot summer's day in Mouseville, a new family quietly moved into an empty house in Cheddar Street. This was the day of the annual Cheese Carnival, which almost every mouse attended, so nobody really noticed them moving in. The new family was like all the other families in Mouseville – there was a mother and a father with their two children, and a grandmother who lived with them. They moved into their new house and settled in nicely.

The next day was a Sunday. Vuyo and Gemma had invited their friends, Robert and Elaine, to their house for lunch. As soon as they arrived, Robert said to Vuyo, "Oh boy, I've got some news for you! A new family has moved in next door to my house, and they are striped field mice! What's the world coming to?"

"So what's wrong with that?" asked Vuyo. "Mice are mice, and they are just the same as us."

"I'll tell you what's wrong with that," said Robert. "There are NO field mice in Mouseville. They are different. They are not like us. We don't want mice here who are different to us." Vuyo could see that Robert was upset and it would have been useless trying to reason with him.

A few days went by and then something incredible happened. Robert was seriously injured while working in the cheese factory. He was rushed to the mouse hospital and the doctor who treated him said that Robert needed an emergency blood transfusion or he would die. The problem was that Robert had a very rare blood type and they would have to test everybody in Mouseville to see if any other mouse had that same blood type.

One by one, all the mice in Mouseville were tested, but no mouse with the same blood type was found. Until they came to the last mouse in the queue. It was Clive, one of the striped field mice. They tested his blood and found that it was exactly the same rare blood type that Robert needed. Clive didn't hesitate for one second and quickly agreed to donate some of his blood to save Robert's life. Two days after the blood transfusion, Robert was looking much better and he was recovering nicely. The doctor had told him about the blood transfusion, and at first Robert was shocked to hear that the striped field mouse had saved his life. Then Robert sent a message to Clive to come and visit him in the hospital.

When Clive arrived, he saw tears running down Robert's furry cheeks. Robert took Clive's hands in his own and looked up at him. "Clive, I didn't like you at first because you looked different. But I realise now that we're really the same, and the blood that runs in your veins also runs in mine. You saved my life even though you didn't have to and I will never forget what you have done for me. I am so sorry. Please will you forgive me."

Clive smiled kindly and gave Robert a big hug. "There is no need to apologise, Robert. I'm sure that you would have done the same thing for me." From that day onwards, Robert and Clive became the best of friends, and the two neighbours lived happily ever after.

INSPIRATIONAL QUOTES FROM DISNEY MOVIES

The past can hurt. But the way I see it, you can either run from it, or learn from it.
- The Lion King

Remember you're the one who can fill the world with sunshine.
- Snow White and the Seven Dwarfs

Sometimes we only see how people are different from us. But if you look hard enough you can see how much we're all alike.
- Aladdin

You don't have time to be timid. You must be bold and daring.
- Beauty and the Beast

It's up to you how far you'll go. If you don't try, you'll never know.
- The Sword in the Stone

Even miracles take a little time.
- Cinderella

You are braver than you believe, stronger than you seem, and smarter than you think.
- Winnie the Poo

Sometimes the right path is not the easiest one.
- Pocahontas

A true hero isn't measured by the size of his strength, but by the strength of his heart.
- Hercules

The very things that hold you down are going to lift you up.
- Dumbo

STORY WRITING TIPS FROM AUTHORS

Often, one of hardest things about writing is actually getting started. A blank page or computer screen stares at you as if to say: 'You think you're soooo clever. What are you going to write on me then, huh?' Once you've written down a sentence or idea – however simple or straightforward – then you've got something to work on.

Remember, writing a story isn't just about saying what happens. The way you tell something can be as important (and FUN) as the actual events you're describing. Take falling out of a tree, for example. It's an ordinary event, but there are so many different ways you can write it up.

Suspense: Will he fall, won't he fall?

Emotion: The fear, the fall, the pain ...

Humour: Ooops! Aaaaaargh! THUD! (or, if it's a taller tree: Ooops! Aaaaaaaaaaaaaaaaaaaaaaaargh! SPLAT!)

And how did that person get to be up in a tree in the first place? And what happened after the fall? From the simplest of ideas, other ideas are already beginning to take shape. Maybe it wasn't a person up the tree at all, but a penguin ... and how on Earth did a penguin get to be up a tree? Did it parachute from a helicopter? Maybe it wasn't a tree, either. Maybe it was an ICEBERG!

Source: www.kidsonthenet.org.uk

ADVICE FROM
PHILIP ARDAGH

What is energy?

If I ask you to explain energy, you'll probably say that energy is the ability to do work, and you would be right. But many of us don't understand what that means, so let's explain it this way: Energy is what makes things happen and without energy there would be no life and no movement.

DIFFERENT KINDS OF ENERGY

Energy is all around us in many forms. An example is the light and heat that we get from the Sun. Our bodies use the light to make Vitamin D and the heat to keep us warm. We can say that the Sun is a source of light and heat energy. When things move, they have what is called kinetic energy. Kinetic energy is found in anything that is moving, such as a ball that has been thrown, a car that is moving or a rocket that is blasting off. Sound is also energy because it is a special type of movement that makes things vibrate. Sound travels as vibrations that we can hear and sometimes feel. All sounds are caused by vibration.

STORED ENERGY

Energy can also be stored, and we call this potential energy. Batteries are an example of something that can store energy. We need electrical energy to make a torch or a cellphone work, so we simply connect a battery so that it can provide the energy. Energy is also stored in food, petrol, gas, coal, wood, oil, and other substances. Our bodies use the stored energy in the food we eat. When we burn wood, gas or coal, the stored energy is released as heat energy. The energy in petrol allows the engine to work and the car to move. We can also use different types of energy sources to make electricity.

ENERGY TRANSFER

Energy can never be created or destroyed, but it can be changed into another type of energy which we can use. But first we need to find a source of energy and then transfer the energy from the source into something else. The transfer of energy from the Sun to plants to animals to people is called an energy chain or food chain. An example of a food chain is when the sun gives off light energy which is used by the plants (along with water and nutrients in the soil) to make food and to grow. A grasshopper then eats the plant and the energy is transferred from the plant to the grasshopper. A mouse then eats the grasshopper and the energy is transferred again. An owl eats the mouse and absorbs the energy. The owl dies and its energy is transferred to the soil as nutrients when its body decays. Plants then use the nutrients in the soil as food to grow, and so the cycle of energy transfer continues.

CAN WE RUN OUT OF ENERGY?

The energy sources we use can be either renewable (also called sustainable energy) or non-renewable. A renewable energy source can be used without harming the earth or running out of energy. Examples are solar power from the sun and wind power from the wind. Non-renewable energy comes from natural resources that will eventually run out and can't be renewed. Examples include oil, coal, natural gas and nuclear power.

Source: www.thunderboltkids.co.za

Write Your Name in Hieroglyphics

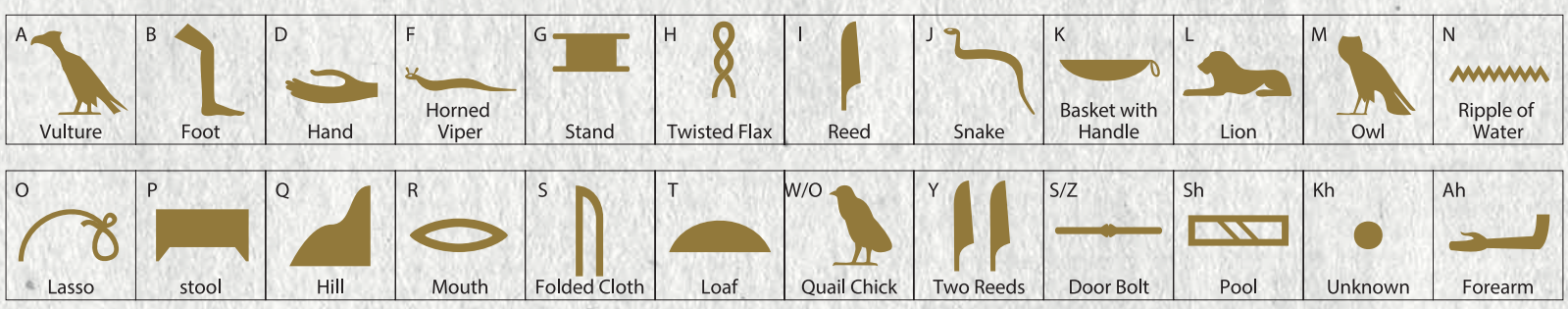
The ancient Egyptians used a system of writing we call hieroglyphics (pronounced (high-row-GLIFF-icks). The word "hieroglyphics" is actually Greek, and it means holy marks or holy writings.

Hieroglyphics is made up of more than 2 000 picture symbols. These picture symbols can represent sounds, actions or things. Sometimes a symbol can be either a thing or a sound. For example, the symbol for a mouth could mean either mouth or the sound "r". A symbol for legs means not only legs, but also walking. An arm not only means arm, but also strength.

When modern people discovered hieroglyphics on temple walls and stone tablets, they spent years trying to figure out what the ancient Egyptians were saying. But they just couldn't work it out, until the "Rosetta Stone" was found. In 1799, a stone was dug up that had a message on it that was written in three languages – the message was written in Greek, in demotic (a language commonly used in Egypt) and in hieroglyphics. By comparing the hieroglyphics with the other two languages, they could finally figure out how hieroglyphs worked and what the symbols meant.

The ancient Egyptians used no punctuation (no commas, full stops, question marks, etc.), no vowels, and no spaces between words. Writing could be from top to bottom, from left to right or right to left. To know in which direction to read, you need to look at the faces to see which way they're looking, then read from the side they're looking towards. If they're looking towards the left, then read from left to right.

If you want to write your own name in hieroglyphics, then use the chart below. It contains the symbols that correspond with the sounds in our alphabet. The faces are looking towards the left, so you can write from left to right as you normally do.



PROFESSOR THANDI'S

FUN SCIENCE EXPERIMENT

Air particles and pollution

Have you ever noticed a sunbeam with little specks of dust floating in it? Those specks are called air particles and they are so small that they float in the air. Tiny bits of ash, called soot, come from burning anything. When we burn petrol in a car engine or wood in a fire, we'll get soot. Dust comes from lots of places, too. Many of the air particles in your house are tiny flakes of skin cells! So, where do you think you'll find more air particles, inside or outside your house?

YOU WILL NEED

- Two white cards or sheets of white paper
- Petroleum jelly (like Vaseline)
- A pencil
- A magnifying glass

INSTRUCTIONS

1. You are going to use the white cards to see which one collects more air particles. One card will be used for inside your house and the other card for outside.
2. Write "Indoor Air" on one card and "Outdoor Air" on the other.
3. Smear some petroleum jelly over a large area in the middle of each card. Air particles will land on the sticky areas.
4. Place the "Indoor Air" card on a flat surface somewhere inside the house. The card should be in an open room, and should not be moved during the experiment.
5. Place the "Outdoor Air" card on a flat surface outside (you can put a rock on one corner of the card so that it stays in place). You should do the experiment when it's not raining.
6. Leave the cards there for about a week.
7. After a week, compare the cards to see which one has collected more air particles on the petroleum jelly.

RESULTS

Most air particles are so tiny that they cannot be seen without a microscope, but you will have noticed other particles on the cards. Indoor air particles come from cooking, mold (tiny spores of fungus), pets and humans. You probably will have noticed more particles on the outdoor card – they come from soil, pollen, smoke and vehicles. In general, air has more particles and is more polluted outside of houses than inside. If you enjoyed this experiment, you could next compare air particles in different rooms of your house or measure indoor and outdoor particles for two weeks.

Source: www.education.com

The Water Cycle

When you fill up a glass with water, I'll bet you don't think about how long that water has been around. All the water on the earth is continuously recycled between lakes, rivers, oceans and the atmosphere, so the water in your glass has been around for a very, very, very long time. This recycling of water is happening right now, and we call it the Water Cycle. The main stages of the Water Cycle are evaporation, condensation, precipitation and collection. Those are big words, but don't let them scare you.

EVAPORATION

Let's start with evaporation. A good way to think about evaporation is to begin with an example that we have all experienced. We've all seen puddles of water on the ground after it has rained. When the rain stops and the sun rises, the puddles disappear. The water doesn't really disappear, though, it just changes from liquid to water vapour, which is a gas, and then floats away into the atmosphere. We call this process evaporation. Heat causes water to evaporate from puddles, pools, rivers, lakes, dams and oceans all the time.

CONDENSATION

Once the water has evaporated, it goes into another stage of the Water Cycle. we call this stage condensation, and it's the process by which the water vapour becomes liquid again. The water vapour rises until it reaches cooler air in the atmosphere, and that's what causes the water vapour to change into a liquid again, in the form of water droplets. These droplets are so tiny that they are not heavy enough to fall, so they continue to float in the air. Clouds are made up of condensed water vapour.

PRECIPITATION

As the tiny droplets continue to condense in the clouds, they become bigger and bigger until they are large enough to fall. When the water falls back down to earth, we call it precipitation. There are different types of precipitation and the most common form is rain, but if it is cold enough then the water droplets can fall as hail or snow.

COLLECTION

After the water has fallen back to earth, it collects in pools, puddles, rivers, lakes and oceans. This water will eventually evaporate again, which takes us right back to where we started the Water Cycle.

Sources: www.kidzone.ws, www.kidsgeo.com, www.seametrics.com