Next Generation News

TAKE ME I'M FREE
FREE ISSUE

SWAZILAND'S NUMBER 1 KIDS NEWSPAPER

ISSUE No: 5 of 2017 | Next Generation News | May 2017

THE SPACE ISSUE

IN THIS MONTH'S SPACE ISSUE

The Solar System | Space Monkeys | Make A Bottle Rocket | And More...

United Nations Educational, Scientific and Cultural Organization

enactus

HEY! This Paper Belongs To:_____

EDITOR'S NOTE

Hey NGN Kids !

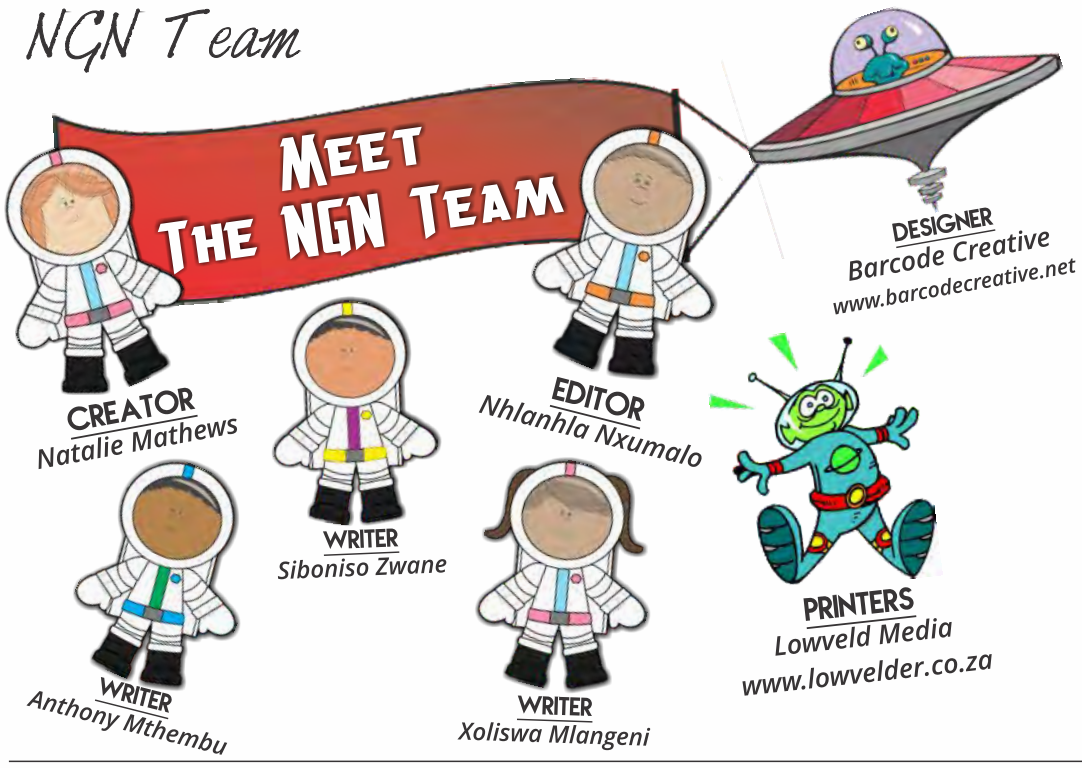
This is our 5th issue and so far we are sure that you have learnt a lot more than you knew before. We are excited that this issue is all about space.

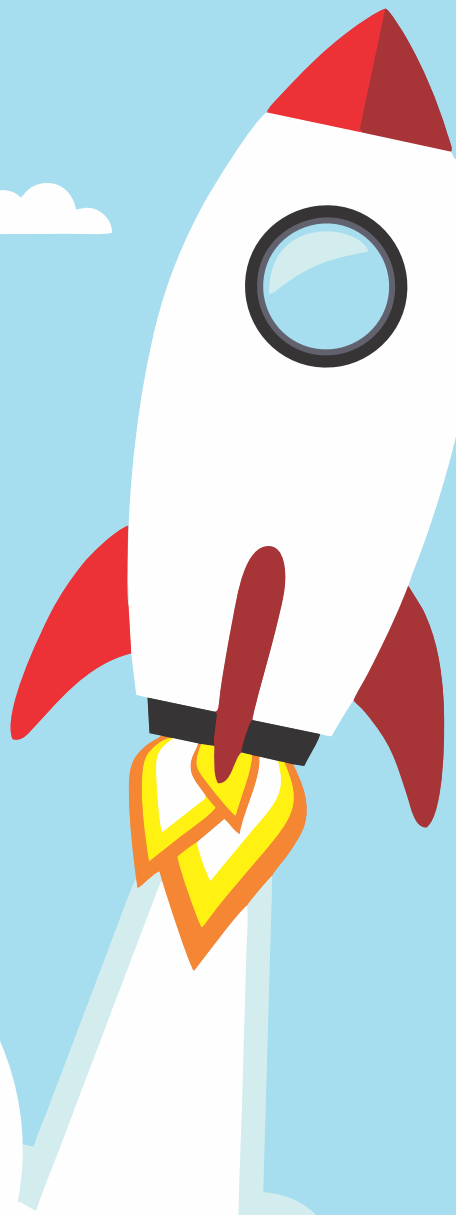
There are a lot of unknowns about space but it is still important that you learn some information about it. We know that you will only learn about planets in a later grade but if you read this issue you will already be ready with the knowledge when you get there. This issue has articles about our Solar System, Comets, a cool project for you to try and a special feature on a famous man called Elon Musk! Elon Musk was born close to home in South Africa and now he has his own spaceship building company and is sending people to space! Don't hold yourself back one bit, you could be just like him one day and change our world in a great way.

We hope that you enjoy this issue. Remember that the limits that you have are only set by yourself, so dream big and work hard.

Till the next issue kids,

NGN Team





IN THIS MONTHS ISSUE

CONTENTS

NGN PROJECT PARTNER

UNESCO

United Nations Educational, Scientific and Cultural Organization

UNESCO is responsible for coordinating international cooperation in education, science, culture and communication. It strengthens the ties between nations and societies, and mobilizes the wider public so that each child and citizen:

- has access to quality education; a basic human right and an indispensable prerequisite for sustainable development;
- may grow and live in a cultural environment rich in diversity and dialogue, where heritage serves as a bridge between generations and peoples;
- can fully benefit from scientific advances;
- and can enjoy full freedom of expression; the basis of democracy, development and human dignity.

UNESCO's messages are of increasing importance today, in a globalized world where interconnections and diversity must serve as opportunities to build peace in the minds of men and women.

Visits Our Website for more info: en.unesco.org/about-us/introducing-unesco

the Solar System

Our Solar System

The solar system is over 4 billion years old. The sun is at the middle of the solar system, it is really really hot, about 15 million degrees Celsius. It has 8 planets orbiting around it. In the past there used to be eight planets but in recent years we have discovered that Pluto isn't a planet! Can you name all the planets? They are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Pluto used to be the last Planet. If you need help remembering all these planets in their order just remember this sentence:

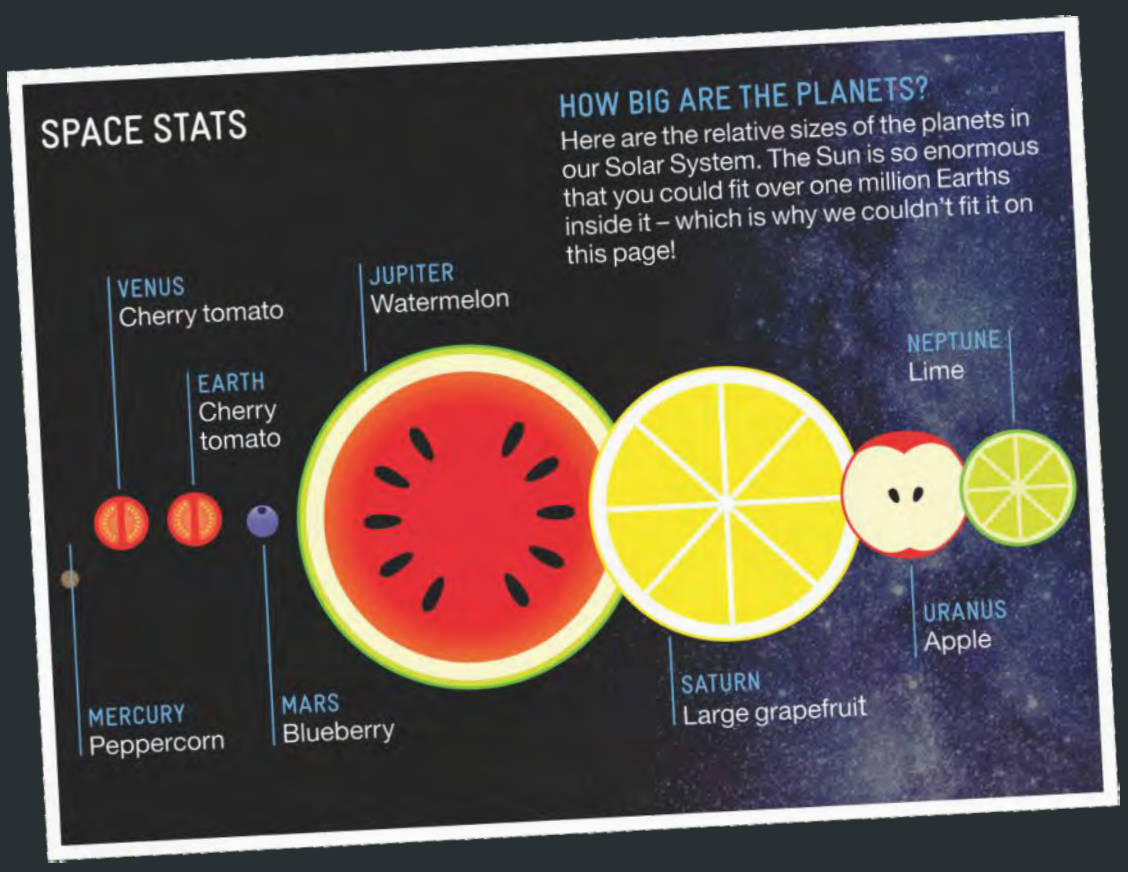
My Very Eager Monkey Jumped Sideways Under Nomsa's Packet.

The planets in our solar system all orbit around the sun, all while turning around on their own axes. This is why when some parts of the world have summer the other parts have winter. Saturn has a very long summer, it lasts 21 years and this is because it spins on its own axis much slower than earth does. Saturn is so light that if we put it in water, it would float. Do you know which Planet is the biggest planet in our solar system is? Of course, you are right! It is Jupiter. Even though we do not feel the earth moving around the sun because it is so big and we are so small, it zooms around the sun at 30 Kilometers every second. Now that's impressive!

All the planets have their own moons or none at all. How many do we have for Earth? Just one. But Neptune has 13! We know that Jupiter is the largest planet, Mercury is so small that 18 of them could fit inside earth. When things are the same, we like to call them twins. Do you have any twins in your class or at your school? Well the Earth and Venus are like twins because they are the same size.

There are lots of other things in space, both inside and outside our galaxy. There are other galaxies, other suns and moons and other solar systems. There are also other objects within our solar system that you should know about such as comets, asteroids and stars. Of course you know about the biggest star already, can you guess what it is? It is the sun! Comets are huge balls made of ice, dust and rocks, remember to read the article about comets to find out more. It has a quiz at the end so see how well you do compared to your class mates. The asteroid belt is between Jupiter and mars. Have you ever wondered why Mars is red? It is because there are lots of rusty rocks on the planet. When you look up at the sky at night, the sparkly dots up there are called stars, there are more than 200 billion stars in our galaxy.

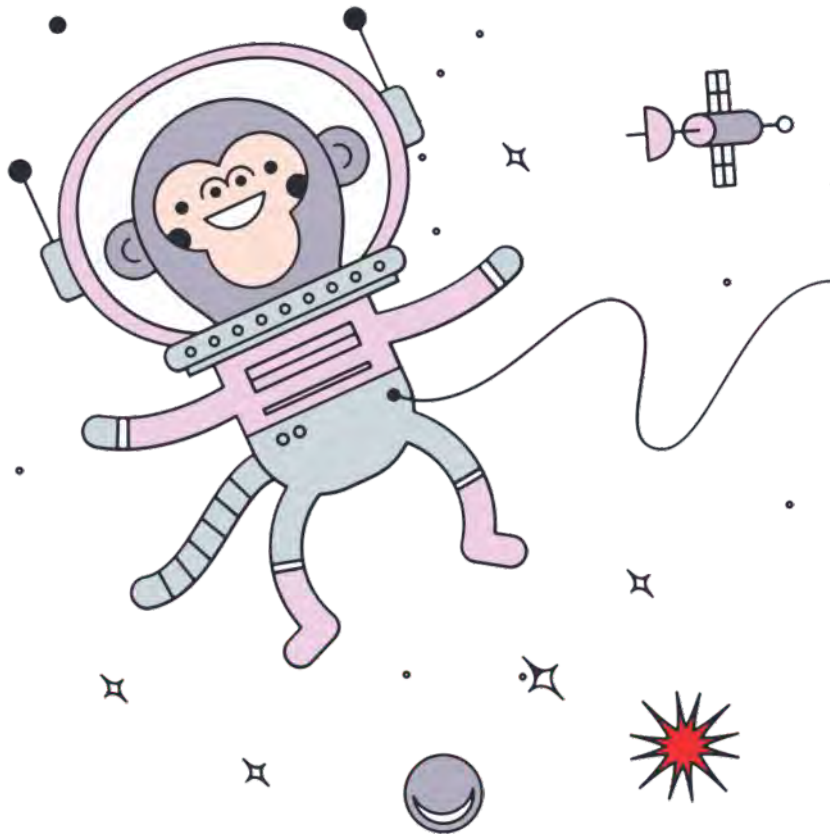
Do you know anything else about space or our solar system? Share this knowledge with your classmates and teacher! Also have a go at answering the questions below and compare your points to your classmates! Have fun.



SOLAR SYSTEM QUESTIONS

1. How many moons does Neptune have?
2. How long does summer last on Saturn?
3. How many planets are in our solar system?
4. What are comets made of?
5. Where is the asteroid belt located?
6. What is the biggest star in our solar system?
7. How old is our solar system?
8. Use the space provided on the back page to draw our solar system.

Have You Heard Of Me?



I am sure you have seen some monkeys running about in your area. What do you know about them? In this story you will learn all about monkey and even about the first monkey that went to space!

Monkeys are clever, social animals. They are known for running and leaping through trees with ease. Like apes and humans, monkeys belong to the group of mammels called primates. Monkeys look somewhat like apes such as chimpanzees, orangutans, and gorillas. But monkeys differ from apes in several ways. For instance, every monkey has a tail, even if it is just a tiny nub. Apes do not have tails.

Most monkeys live mainly in trees in rainforests. Baboons and some other kinds live mostly on the ground in grasslands or rocky areas. Monkeys vary greatly in size. The pygmy marmoset is only about 14 centimeters long, not including the tail. The largest baboons may grow to 45 inches 115 centimeters in length.

Most monkey species are active mostly during the day. The owl monkeys are active at night. They are also called night monkeys. Monkeys are intelligent animals that are good at solving problems. Almost all types live together in groups. A monkey group commonly includes several related females, their young, and one or more males. Monkeys use facial expressions, body movements, and various noises to communicate with each other.

Many types of monkey are endangered, or at risk of dying out completely. People have cut down the trees in large parts of the rainforests where monkeys live. People also hunt monkeys for their meat and fur. In addition, some monkeys are captured and sold as pets.

Since Monkeys are very intelligent animals they were chosen to take part in the very first space missions. The first monkey who went into space was Albert and the first chimpanzee launched into space was called Ham.

Glossary

Ape - a type of animal (such as a chimpanzee or gorilla) that is closely related to monkeys and humans and that is covered in hair and has no tail or a very short tail

Mammel - a type of animal that feeds milk to its young and that usually has hair or fur covering most of its skin

Primates - any member of the group of animals that includes human beings, apes, and monkeys

Rainforest - a tropical forest that receives a lot of rain and that has very tall trees

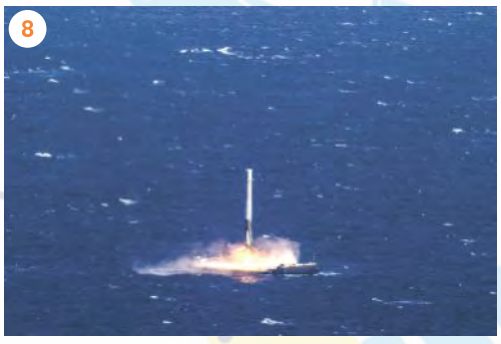
Endangered - used to describe a type of animal or plant that has become very rare and that could die out completely

SPACE X

BORN IN AFRICA LIVING IN SPACE

South African entrepreneur Elon Musk is known for founding Tesla Motors and SpaceX, which launched a landmark commercial spacecraft in 2012.

Born in South Africa in 1971, Elon Musk became a multimillionaire in his late 20s when he sold his start-up company, Zip2, to a division of Compaq Computers. He achieved more success by founding X.com in 1999, SpaceX in 2002 and Tesla Motors in 2003. Musk made headlines in May 2012, when SpaceX launched a rocket that would send the first commercial vehicle to the International Space Station.



(1) Falcon 9 Rocket ship at the Space X hangar. | **(2)** Space X rocket ship "Falcon 9 and Dragon" rolling off the pad. | **(3)** Long exposure photograph of Falcon 9 Rocket ship launching into space. **(4)** Interior of the Dragon spacecraft's crew deck. | **(5)** Liftoff of Falcon 9 carrying the DSCOVR Satellite. | **(6)** Dragon spacecraft in orbit in space. | **(7 - 9)** Falcon first stage after landing on Droneship "Of Course I Still Love You"

EARLY LIFE

Son of a Canadian mother and a South African father, Elon Reeve Musk was born on June 28, 1971, in Pretoria, South Africa. He spent his early childhood with his brother Kimbal and sister Tosca in South Africa, and at 10, the introverted Elon developed an interest in computers.

He taught himself how to program, and when he was 12 he made his first software sale—of a game he created called Blastar.

MUSK FOUNDS SPACE X

Musk founded his third company, Space Exploration Technologies Corporation, or SpaceX, in 2002 with the intention of building spacecraft for commercial space travel. By 2008, SpaceX was well established, and NASA awarded the company the contract to handle cargo transport for the International Space Station—with plans for astronaut transport in the future—in a move to replace NASA's own space shuttle missions.

PREPARING FOR LIFT-OFF

On May 22, 2012, Musk and SpaceX made history when the company launched its Falcon 9 rocket into space with an unmanned capsule. The vehicle was sent to the International Space Station with 1,000 pounds of supplies for the astronauts stationed there, marking the first time a private company had sent a spacecraft to the International Space Station. Of the launch, Musk was quoted as saying, "I feel very lucky. ... For us, it's like winning the Super Bowl."

In February 2015, SpaceX launched another Falcon 9 fitted with the Deep Space Climate Observatory (DSCOVR) satellite, aiming to observe the extreme emissions from the sun that affect power grids and communications systems on Earth.

CEO Elon Musk reported through Twitter about the soft vertical landing of the rocket in the ocean within 10 meters. That gives hope for a successful landing next time at sea in non-stormy weather. According to the entrepreneur, in 10-20 years from now, science fiction can become a reality.

In March 2017, SpaceX enjoyed another breakthrough with the successful test flight and landing of a Falcon 9 rocket made from reusable parts, a development that opened the door for more affordable space travel.

ELON - VISIONARY BUSINESSMAN, LEADER & DREAMER

Elon is also the co-founder, CEO and product architect of Tesla, which makes electric cars, giant batteries and solar products. He is the co-founder and chairman of OpenAI, a nonprofit research company working to build safe artificial intelligence and ensure that AI's benefits are as widely and evenly distributed as possible.

Previously, Elon co-founded and sold PayPal, the world's leading Internet payment system, and Zip2, one of the first internet maps and directions services, which helped bring major publishers, including the New York Times and Hearst, online.

The incredible life of Elon Musk is a great example of a man who has accomplished his childhood dream: he conquers space. Colonization of Mars will soon become a reality thanks to SpaceX's innovations in the space industry.

NUMBERS GALAXY

Have you ever dreamed about space travel or about becoming a rocket scientist? If you have then you have to make sure that you are good with numbers and time! Try out these fun exercises to test and improve your numbers and time skills...

Add the missing numbers to complete the numbers cross puzzle below...

1.

64	–	22	+	45	=	
–		+		–		+
22	+	60	–	38	=	
+		–		+		+
48	–	46	+	25	=	
=		=		=		=
	+		+		=	

2.

57	–	21	+	48	=	
–		+		–		+
21	+	36	–	31	=	
+		–		+		+
57	–	21	+	54	=	
=		=		=		=
	+		+		=	

3.

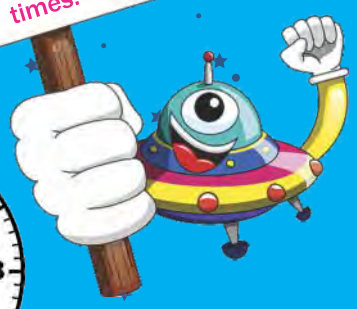
49	–	36	+	65	=	
–		+		–		+
36	+	46	–	45	=	
+		–		+		+
42	–	30	+	44	=	
=		=		=		=
	+		+		=	

4.

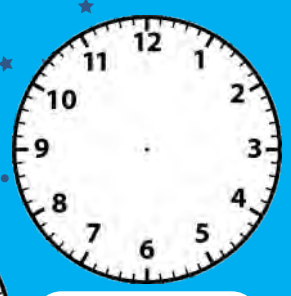
48	–	47	+	50	=	
–		+		–		+
47	+	64	–	32	=	
+		–		+		+
50	–	34	+	46	=	
=		=		=		=
	+		+		=	

DRAW HANDS ON THE CLOCK

Look at each of the times below and draw the hour and minute hands on the clocks to show the correct times.



10:00



5:25

8:05

12:45

NUMBER PATTERNS

Find the number patterns and complete the sequence...

1. 29, 38,47, 56, 65, 74, 83, _____
2. 97, 91, 85, 79, 73, 67, 61, _____
3. 60, 58, 56, 54, 52, 50,48, _____
4. 23, 30, 37,44, 51, 58, 65, _____
5. 32, 35, 38, 41, 44, 47, 50 _____
6. 22, 30, 38, 46, 54, 62, 70, _____
7. 3, 11, 19, 27, 35, 43, 51 _____
8. 1, 9, 17, 25, 33, 41, 49, _____
9. 91, 85, 79, 73, 67, 61, 55 _____

Class Act!

It will be Lights, Camera, Action for Jason as he is set to appear on the TV Show "Class Act"...read all about it here and answer the questions that follow.

Main Character

If he hadn't been strapped in, Jason would not be able to sit still. He wanted to tell everyone that he was going to be on TV. Every evening at 6:00 he watched his favorite show "Class Acts." Players answered questions for money. If they missed a question they had to act out the title of a song, TV show, or book. He knew most of the answers, so he sent in a letter to try to get on the show. Three weeks ago, his mother called him to the phone. He had been chosen to be a contestant. They even sent him two tickets so he and his mother could fly into the city.

Jason worked hard to get ready. He watched "Class Acts" every evening. His family would play against each other. Everyone made up all kinds of questions about science, music, movies, games, and books. His friends asked him questions on the playground at recess. Even his teacher took time to play the game in class. She asked questions about the subjects they were studying.

Jason could feel the plane getting ready to land. He looked out the window and saw the Statue of Liberty. He had butterflies in his stomach, but he couldn't wait for the game to begin.

QUESTIONS:

1. Who is the main character of the story? _____

2. Where is Jason during the story? _____

_____

3. Why is the main character so excited? _____

_____

4. What is one way Jason prepared for the show? _____

_____

5. What clue helps you know the name of the city where Jason is going?

_____

6. What do the words "butterflies in his stomach" tell you about Jason?

_____

Sequence of Events

Jason's mom paid the taxi driver. There was a large sign over the doors that said "The Howard Mann Theater" and below it "Class Acts – tonight at 6." A young man greeted them at the door and showed them where they should go. Jason entered a room with five other boys and girls and their parents. A woman came in and smiled at them as she went over the rules of the game. She told them who would be on each team.

Jason's teammates were Janelle and Steve. Janelle was a year older than the boys. She was reading a book called Amazing Facts. Steve was looking over a map of the United States. The three team members put on red jumpsuits. Then, they went in and a woman put make-up on them so they would look good on TV.

While they were waiting, people began to arrive and sit down. Janelle said, "Did you know that all rainbows are made up of the colors red, orange, yellow, green, blue, indigo, and violet?"

Steve said, "No, but did you know that Mammoth Caves in Kentucky are over 330 miles long?"

Jason gulped, "No, I didn't know either of those facts."

QUESTIONS:

1. How did Jason and his mother get to the theater? _____

2. What was the name of the theater? _____

3. How do you think Jason is feeling in the last sentence? _____

_____

4. Put these events in the order they happened.

(___) Steve read aloud a fact about Mammoth caves.

(___) People began to take their seats.

(___) A lady explained the rules.

(___) Jason and his mother were greeted at the door.

(___) Jason's mother paid the taxi driver.

(___) Jason found out who his teammates were.

(___) Janelle told her teammates the colors in a rainbow.

ALL ABOUT COMETS

What are comets?

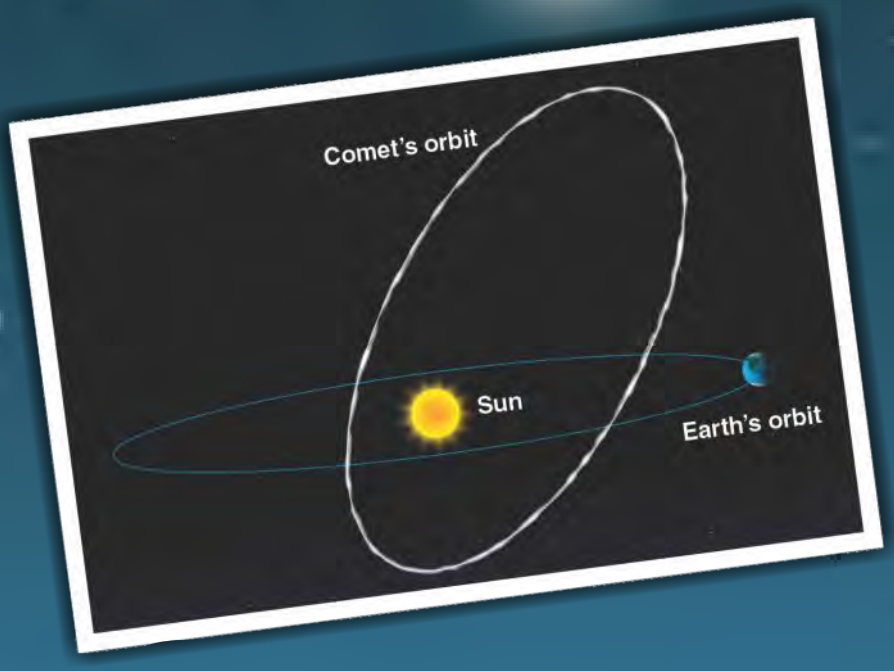
A comet is a small world which scientists sometimes call a planetesimal. They are made out of dust and ice, kind of like a dirty snow ball.

Where do they come from?

Comets come from two places: The Kuiper Belt and the Oort Cloud. They are leftovers from the beginning of the solar system. Imagine a place far, far away at the very edge of the Solar System. A place where millions of comets can be seen swishing around in every direction. These icy comets are orbiting the Sun in two different places, both of which are very distant. One place is called the Oort cloud, and the other is called the Kuiper Belt.

Why do Comets leave their home in the Oort Cloud or Kuiper Belt?

A comet will spend billions of years in the Kuiper Belt or Oort Cloud. Sometimes two comets will come very close to each other, or even crash into one another. When this happens the comets change directions. Sometimes their new path will bring them into the Inner Solar System.



This is when a comet begins to shine. Up until now the comet has been among millions of others exactly the same, but as they approach the warmer Inner Solar System they begin to melt leaving behind magnificent tails.

Unfortunately, comets don't live very long once they enter the warmer part of the Solar System. Just like a snowman melts in the summer, comets melt in the Inner Solar System. Although it is the most glorious part of their lives, traveling through the Inner Solar System eventually kills them. After several thousand years they melt down to a little bit of ice and dust, not nearly enough to leave a tail. Some even melt away completely.

Their Orbit

Most planets orbit the sun in a path shaped like a circle. On the other hand, a comet's orbit is shaped like a long oval. Most comets travel very far into the outer solar system as they orbit. Depending on the comet, it can take from several years to many thousands of years to complete one orbit.

Parts of a Comet

The main part of a comet is called the nucleus. It is made of frozen water and gases plus dust and rock. The nucleus usually measures a few miles across.

Most of the time a comet consists of only its nucleus. However, when the comet gets close to the sun, the sun's heat causes it to shed gas and dust. A huge cloud of gas and dust called a coma builds up around the comet with one or more tails when a comet sweeps close to the Sun

GLOSSARY

Distant – somthing that is far away

Nucleus – the middle

EPIC BOTTLE ROCKET

Create your own home-made rocket using easy to find materials that you can find at home.

PROJECT: EPIC BOTTLE ROCKET

Here is what you need to make one:

- A 2 liter soda bottle
- 3 pencils (unsharpened is best)
- Strong tape
- A cork that fits the soda bottle
- Paper towels
- Baking soda
- Vinegar – we went through an entire large bottle, so get a lot!

First, prepare your rocket. Build a stand for the rocket.

Once your rocket is ready, it's time to launch!

You need is a small square of paper towel (we used half of a select-a-size paper towel). Put in some baking soda (we didn't measure) and fold the paper towel around it. It needs to be narrow enough to fit through the mouth of your bottle.

Pour in some vinegar. We used about 15cm worth, but again we didn't measure.

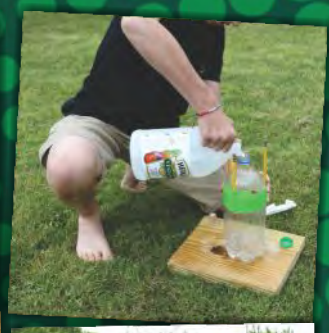
After pouring in the vinegar, quickly push in the baking soda packet and then push in the cork. Turn the bottle over and wait for it to launch! It can take up to 30 seconds.

Be careful not to push in the cork too tightly.

Be sure to stand back... It's starting to foam!

LIFTOFF! Even though you will not learn this for a long time: what you have just sean is Newtons 3rd law!

(Turn this into a science experiment by using different quantities of baking soda and vinegar and recording how high your rocket goes!)



Make Your Rocket Standout with cool & funky decorations

WHAT HAPPENS TO OUR BODIES IN SPACE?

The human body is conditioned to life on Earth. So when we leave our home planet, lots of weird stuff happens to us.

Eyes

Many astronauts suffer from some vision loss. Although it is not completely understood why, it is believed to be due to increased pressure inside the head. Cosmic rays, usually absorbed by our atmosphere, also create momentary flashes of light.

Brain

Cosmic radiation, stress, insomnia and trying to re-orient your body's balance system mean the astronaut's brain is constantly adapting while in space.

Spine

Astronauts are taller in space! On Earth, gravity compresses our spine. When gravity is weak, the space between the vertebrae in our spine is able to expand.

Heart

In space, hearts don't have to work as hard to pump blood around the body. So eventually they may shrink, which can cause problems for astronauts when they return to Earth.

Muscles

In space, muscles aren't really needed to hold up the body. Over time, they become weaker and deteriorate. Astronauts must exercise every day to prevent this from happening.

Blood

Blood is normally pulled towards our feet by gravity. But in space, the blood and fluid is pulled towards the head, giving astronauts puffy faces.

Bones

Like our muscles, bones aren't needed much in microgravity. Without exercise, they deteriorate and become weak and brittle.

WOULD YOU LIKE TO BE AN ASTRONAUT?

You do not have to be superman or superwoman to fly in space. Many men and women, from many different countries, have become astronauts. The European Space Agency (ESA), for example, now has 14 astronauts from eight different countries.

If you want to be one of the few people to experience the thrill of liftoff, see the Earth from on high and float in a spacecraft, then how do you go about it?

Well:

First: you must really want to become an astronaut as it takes many years of study and work before you even begin your training. Most astronauts begin when they are between 27 and 37.

Second: you need to be clever enough to attend a university to study engineering, medicine or one of the sciences. Many astronauts also learn to be pilots in their country's airforce.

Third: astronauts come from many different countries in Europe, and may share missions with astronauts from the USA, Russia and Japan. They need to speak English and Russian so that they can all talk to one another.

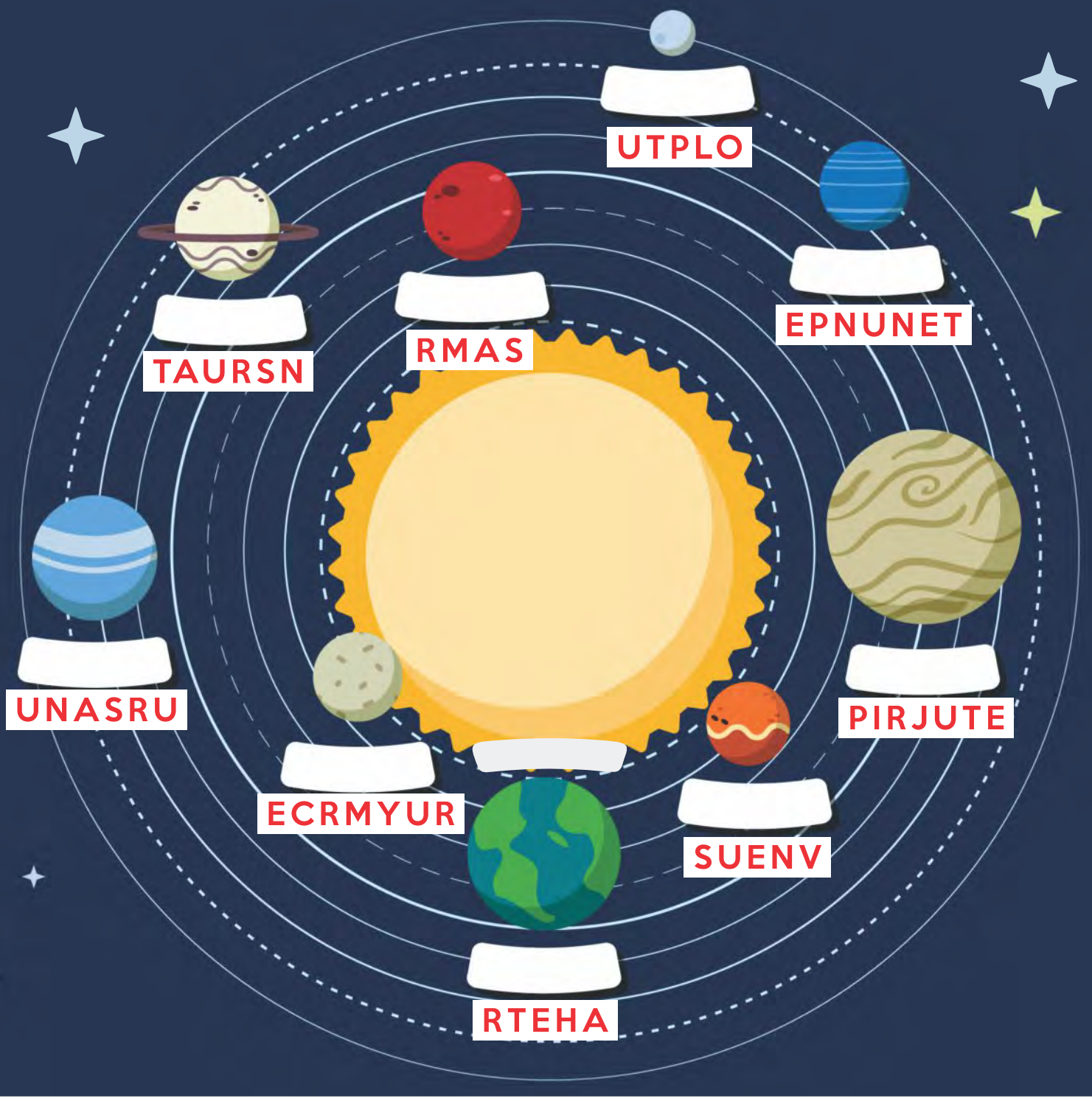
Fourth: you must be healthy, Since astronaut training and spaceflights can be very tiring.

Lastly: on a spacecraft, astronauts live and work in a very small space so you need to be good at getting on with people.

Are you still interested? If so maybe you will become one of the men and women who orbits the Earth in a spacecraft, walks in space or visits the Moon. See you in space!

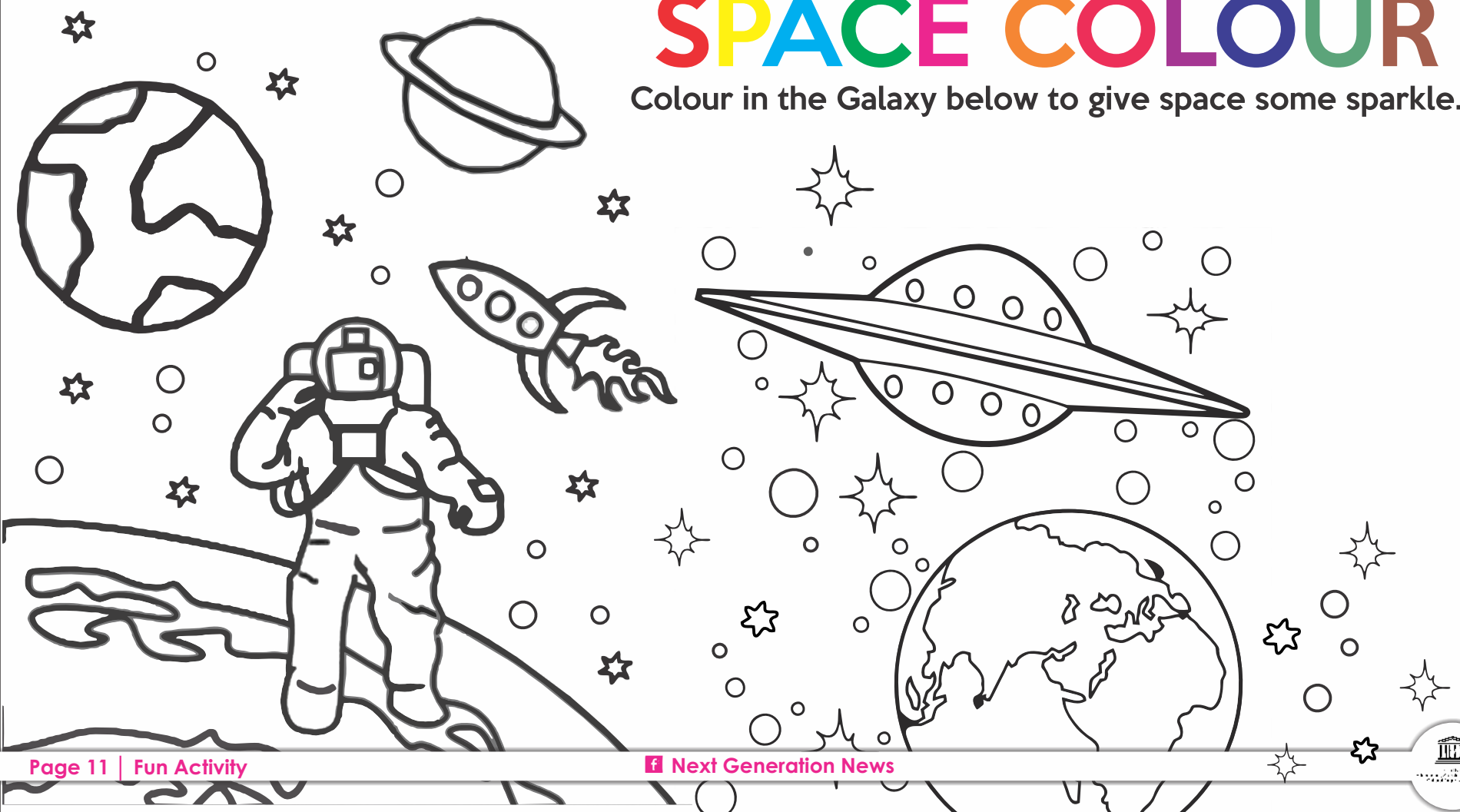
PLANET SCRAMBLE

Unscramble the names of the planets below.



SPACE COLOUR

Colour in the Galaxy below to give space some sparkle.



CREATIVE CORNER

Try our these fun word activities and then try drawing our Solar System as discussed on page 3...

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

Search for the planets in our solar system.
The names can be horizontal, vertical or backward.

• Jupiter • Uranus • Venus • Mercury •
• Earth • Neptune • Mars • Saturn •

THE EARTH HAS A SECRET MESSAGE

- Can you decode the message using the table below -

22 26 9 7 8 18 8 7 19 22 14 12 7 19 22 9 12 21

14 12 6 13 7 26 18 13 8 ' 5 26 15 15 22 2 8 ' 26 13 23

8 7 9 22 26 14 8

A	26	B	25	C	24	D	23
E	22	F	21	G	20	H	19
I	18	J	17	K	16	L	15
M	14	N	13	O	12	P	11
Q	10	R	9	S	8	T	7
U	6	V	5	W	4	X	3
Y	2	Z	1				

OUR SOLAR SYSTEM

Draw our Solar System in the space below