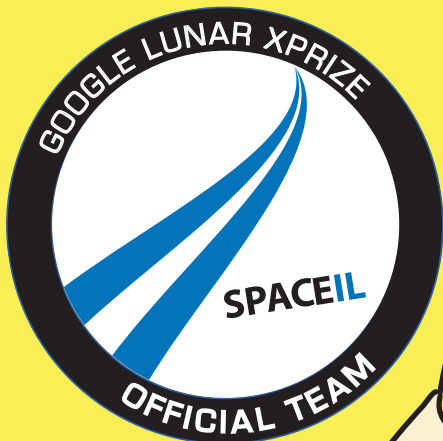
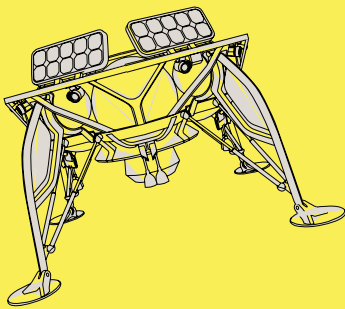


WHO WANTS TO GO TO THE MOON?

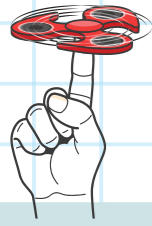
SpaceIL Kids Magazine | Issue no.3

WE CAN DO IT!



A Special Issue - Women in Space

News from space



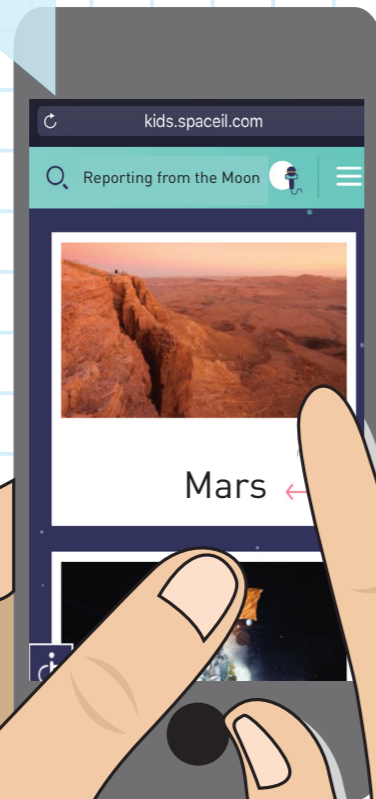
NASA launched a spinner to the International Space Station and the astronauts onboard played with it. There is no difference in the way a spinner spins on the International Space Station and on Earth, however, if an astronaut spins the spinner as one body in vacuum and leaves it to float in space, the spinner will continue to spin for several billions of years.

Russia and the USA reached an agreement on full collaboration on an initiative led by NASA for building the first space station to orbit the Moon.

This initiative is part of a long-term project for deep space exploration and sending people to Mars.

About 45 years after the last American landed on the Moon, the US has announced on its intention to send astronauts to the Moon again, for laying the foundations for sending Americans to Mars.

For more news and updates from space visit: www.spaceil.com



A marshmallow filled cookie was launched into space from Scotland with a big Helium balloon. The cookie reached the Stratosphere – the Earth’s atmospheric layer that starts at the height of roughly 33000 ft. and spans up to 164000 ft. high. It took the cookie one hour and 29 minutes to reach a height of 121,414 ft. and additional 40 minutes to land safely in a forest near the city of Glasgow. The marshmallow filled cookie remained almost intact!

Data from Selene, the Japanese lunar orbiter that orbited the Moon, indicate on the existence of 164000 ft. deep and 330 ft. wide cave on the Moon. Scientists speculate that this cave’s walls are made of hardened lava. If this is true – it could be used by astronauts on the Moon as a base for protection against radiation.

NASA issued an open public invitation to include your name in a microchip that will be launched with the InSight – the Mars Lander which is scheduled to fly this year to Mars.

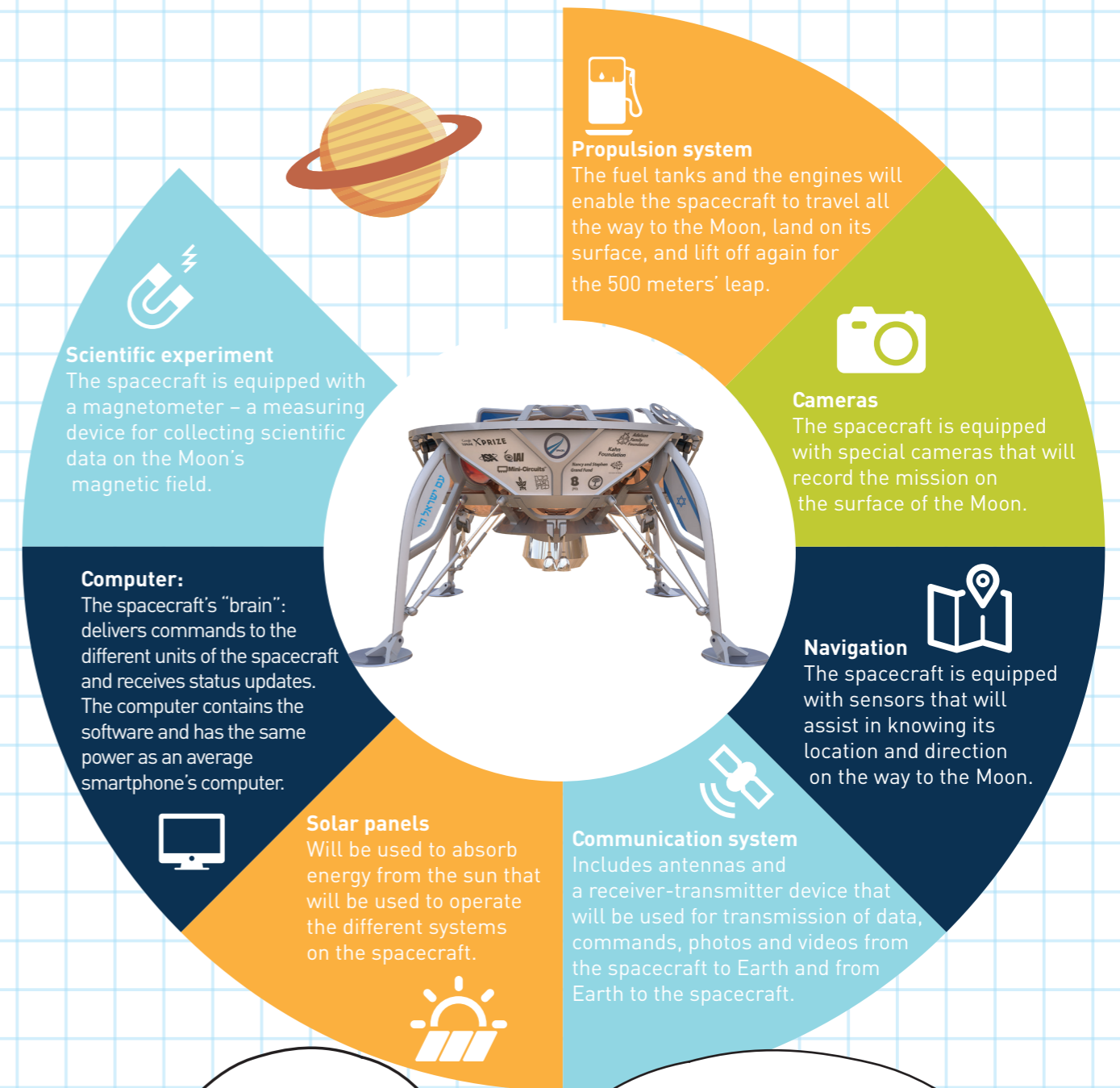
The sensation of partial floatation when diving in the ocean is somewhat similar to gravitation on the Moon. Therefore, the European Space Agency (ESA), conducts deep sea experiments to test methods for evacuation of injured astronauts.

SpaceIL



The spacecraft

SpaceIL’s spacecraft will soon be reaching the Moon. Every system on the spacecraft has a function:



If we fly to space and I break my leg, will you know how to help me?

If we practice, I’m sure I could. But yelling for help won’t help at all. Sound waves don’t travel in vacuum, and that’s why you can’t hear anything in space, even if you scream out loud.

Cryptogram

How can we stop a spacecraft that travels in a speed 10 times faster than an airplane?
Solve this cryptogram - and find out how!

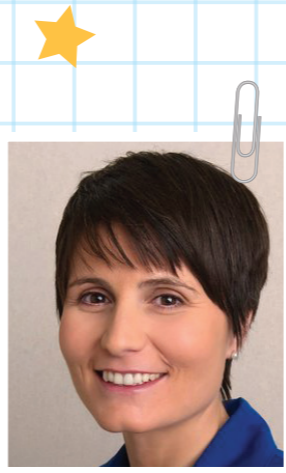
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



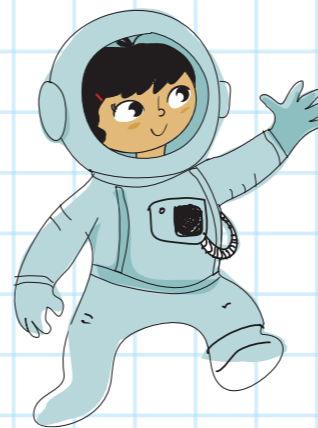
A large dashed box containing a cryptogram puzzle. The puzzle consists of 15 rows of icons. Each row contains a sequence of icons that correspond to a word. The first row contains 15 icons: a rocket, a satellite, a moon, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, a satellite, and a satellite. Below each row is a dashed line for writing the word. The puzzle is designed to be solved by matching the icons to the letters in the alphabet key at the top.

An interview with the astronomer Samantha Cristoforetti

Samantha Cristoforetti is a woman who holds many records. She is the first Italian woman in space and the first person who made espresso in space. She has a Master's degree in Chemical Engineering and was among the first female pilots in the Italian Airforce. Cristoforetti's first flight to space was in 2014. She speaks many languages, including Italian, German, French, Russian, and English, and currently, she is studying Chinese.



Maybe I'm the next Samantha Cristoforetti?



When did you know you would become an astronaut?

I began dreaming of flying into space when I was a child, however at that time I had a very vague idea of what that actually meant. I was equally fascinated by Star Trek and Space Shuttle missions. Then, growing up, I developed more mature passions for science, technology, aviation and all of those interests kept me on a path to become an astronaut.

What difficulties did you encounter along the way?

I worked very hard in everything I did, be it studying or flying training. I was very demanding on myself and one might say that all those things were difficult. On the other hand, I chose my path myself: it demanded a lot of effort, but it was also very fulfilling and I wouldn't have wanted it any different.

How did being a woman influence your career?

I am not sure, I can not really recognize any obvious influence, except for the fact that, as a female astronaut, I usually attract more attention from the public and the media. It's reasonable to assume that my gender had an influence in subtle ways, that are hard to pinpoint. Probably in some cases it was a help, in other cases it was a hindrance. Lacking a more objective way to measure, I'd say that overall it was probably roughly neutral.

Please share with us a moment that you will never forget

There are many, of course. For example the moment when I entered the International Space Station after a perfect launch, rendez-vous and docking, hugged my friends who were already on-board and caught a first glimpse of the Earth through a small, downward-looking window, with the oceans and the continents slowly and majestically flowing beneath.

How would you characterize yourself as a girl? What were your interests and hobbies?

I was a girl full of energy and I was pretty much interested in all kinds of things. I participated in all kinds of optional, after-school activities, from Latin to piano, karate and diving. I had a need of trying out everything, which is probably why I never became really good at anything. I guess that served me well as an astronaut as well: in our job, we need to be able to learn many different things in a short time.

What advice would you give to girls who want to follow your path?

There are many ways to become an astronaut and it is also a bit hard to say how things will look when today's girls will be adults and young professionals. I'd say that a solid background in science, technology and/or aviation will still be the best bet, but maybe at that point we will also have journalist-astronauts or historian-astronauts, who knows?

The first and only female South Korean astronaut to date.



Yi So-yeon
Profession: Dr. of Biotechnology
Mission: Soyuz - the Russian Space Agency's spacecraft
Date: April 8, 2008
The road to space: At the time, Yi So-yeon was one of two women only who studies Mechanical Engineering in university in South Korea.
Interesting fact: Yi So-yeon was selected to the position of an astronaut in a TV show similar to American Idol.

The first African-American female astronaut



Dr. Mae Jemison
Profession: Physician and engineer
Mission: Endeavor space shuttle
Date: September 12, 1992
The road to space: From a very young age she had two talents – Ballet and science, and always dreamed about traveling to space. After graduating her engineering studies, she had to decide between a dancing career and medicine studies. She decided to study medicine. After completing medical school, she continued to study towards a Master's degree in engineering and at the same time applied for an astronaut position and was accepted.
Interesting fact: Dr. Jemison participated in a chapter of the TV series Star Trek – The Next Generation and also as a scientific consultant to this series.

The first female European astronaut (French) on-board the International Space Station



Claudie Haigneré
Profession: Physician and Scientist
Mission: Soyuz – to Mir, the Russian Space Station
Date: August 17, 1996
The road to space: Claudie Haigneré studied medicine and science and specialized in Sport Medicine and in Space Medicine.
Interesting fact: Claudie took to space her young daughter's teddy bear as a mascot.

The first American woman in space



Sally Ride
Profession: Professor of Physics
Mission: Challenger space shuttle
Date: June 18, 1983
The road to space: Sally Ride became an astronaut by sheer chance after she saw a NASA advertisement for astronauts' recruitment in a students' newspaper. She applied – and the rest is history.
Interesting fact: Sally Ride was an exceptional tennis player.

First Women in space

The first female space shuttle pilot commander



Eileen Collins
Profession: Space Systems Pilot Commander
Mission: Discovery space shuttle
Date: February 3, 1995
The road to space: Early on in her life, when she was a girl scout, she announced her wish to become an astronaut. She studied mathematics and sciences in university, and at the same time completed training as a US Airforce pilot, where she served as a training pilot and a mathematics lecturer.
Interesting fact: Eileen's crew members called her "Mom" because during the flight, two computers crashed and a Hydrogen leak was detected and Collins solved these problems on her own.

The first female of Indian origin in space



Kalpana Chawla
Profession: PhD. Space Engineering
Mission: Columbia space shuttle
Date: November 17, 1997
The road to space: Kalpana Chawla was born in India and moved to the USA where she pursued a PhD in Space Engineering. She died on her second space mission, in January 2003, alongside the Israeli astronaut Ilan Ramon, when the space shuttle disintegrated upon return to the Earth's atmosphere.
Interesting fact: After her death, Chawla became a national heroine in India. Young girls perceive her as an inspiration and a role model for excellence in science and technology.

First: The first Jewish female astronaut



Dr. Judith Arlene Resnik
Profession: PhD. Electrical Engineering
Mission: Discovery space shuttle
Date: August 30, 1984
The road to space: As a child, she studied in a Jewish school and celebrated Bat Mitzva in synagogue. She applied to NASA after seeing a newspaper advertisement and was selected to the astronauts training program with five other women out of 1,000 applicants. In January 1986, she was killed in the Challenger Disaster – the space shuttle that exploded during its launch to space.
Interesting fact: In one of her photos in space she is holding a sign that says "Hi, Dad".

The first female Taikonaut (Chinese astronaut)



Liu Yang
Profession: Combat Pilot
Mission: Shenzhou 9 spacecraft
Date: June 16, 2012
The road to space: When Liu Yang applied for an taikonaut position, the very unusual criteria of the Chinese Space Agency were: a married woman – which, according to them, was proof of physical and mental maturity; a woman who underwent natural childbirth – proof of the body's ability to cope with a challenge; and a general fresh look, white teeth, and no body odor.
Interesting fact: Liu's early training were as transport pilot and during one of her first flights she remained calm and cool headed when a flock of birds hit her plane's engine. She successfully landed the broken plane.

Moon Race - who will be first on the Moon?



You will need one die and playing pieces.

- If you don't have a die, you can prepare small notes numbered from 1 -6 and pick a note before each turn.
- If you don't have playing pieces, you can use pebbles or coins.

The Goal: To be the first to land on the Moon.

Instructions: Take turns rolling the die and moving accordingly.

If you land on Spacell's spacecraft - move 3 steps forward.

If you land on a timeline square - you win another turn.

If you land on a challenge square - follow the instructions.

Winner: The first player that lands on the Moon!

On this day the founders met in a bar and scribbled the spacecraft's first draft

2010 (November)

Yariv Bash publishes the post "Who wants to go to the Moon?" which was followed by the foundation of Spacell

2010 (November)

First flying test, testing the navigation system

2011

Due to low temperature of the fuel tanks, the upcoming maneuver has been postponed. **Go 4 steps back!**

You have developed an algorithm that predicts with precision the engines' performance. Now, the spacecraft's maneuvers are more efficient! **Take 3 steps forward!**

A launch agreement was signed

2015 (October)

A group of scientists is working on the spacecraft's planning and design

2012-2015

You have succeeded in taking a photo of Israel from space! **You win another turn!**

Will this be the year of the Moon landing?

2018

The magnetometer experiment arrives to Israel

2016 (November)

The spacecraft is in advance integration (assembly) stages and testing of the different systems

2016-2017

The ground antenna malfunctioned, you must contact the spacecraft via an alternate antenna. **Wait one turn**

Spacell is selected as a finalist in the competition with four other groups from different countries

2017 (January)

You have entered the Earth's shadow (eclipsed). You must wait until your battery is fully charged. **Wait one turn!**

First women in space

To date, there are only 60 female astronauts out of 554 astronauts. In other words, there is one woman for every nine men who flew to space.

Different studies found that women under 30 years old are more fitting than men to fly to space. This is thanks to their physical structure that makes them less vulnerable to heart diseases and poisoning.

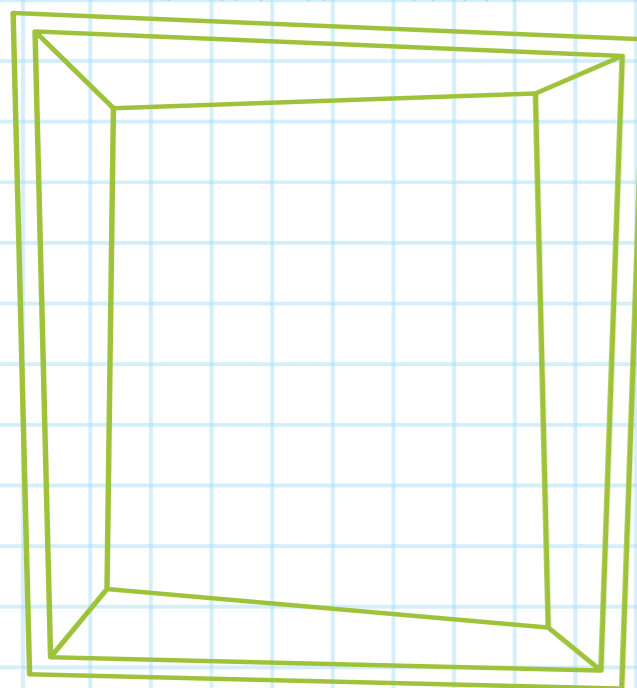
The American Toy Company, Mattel, has issued in 1965 a Barbie doll in a spacesuit, as a response to the public discourse on the lack of female astronauts. The first American astronaut flew to space only twenty years later.

Peggy Whitson holds the record for the longest period of time spent continuously by a woman in space. She spent 289 consecutive days in space and returned to Earth in September 2017.

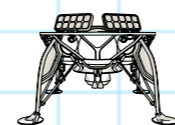
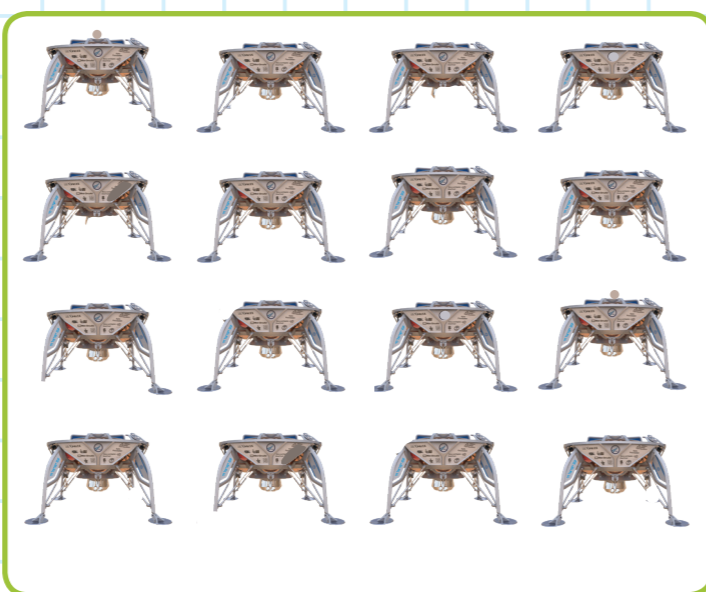
LEGO released this year a new Women of NASA set, featuring four women: Sally Ride and Mae Jemison – the astronauts; Margaret Hamilton – a computer scientist in the Apollo 11 mission, and Nancy Grace Roman – NASA's first astronomer and the first woman that served in a management position in NASA.



If you were asked to design a new space-related toy, what would it be? Write and draw.

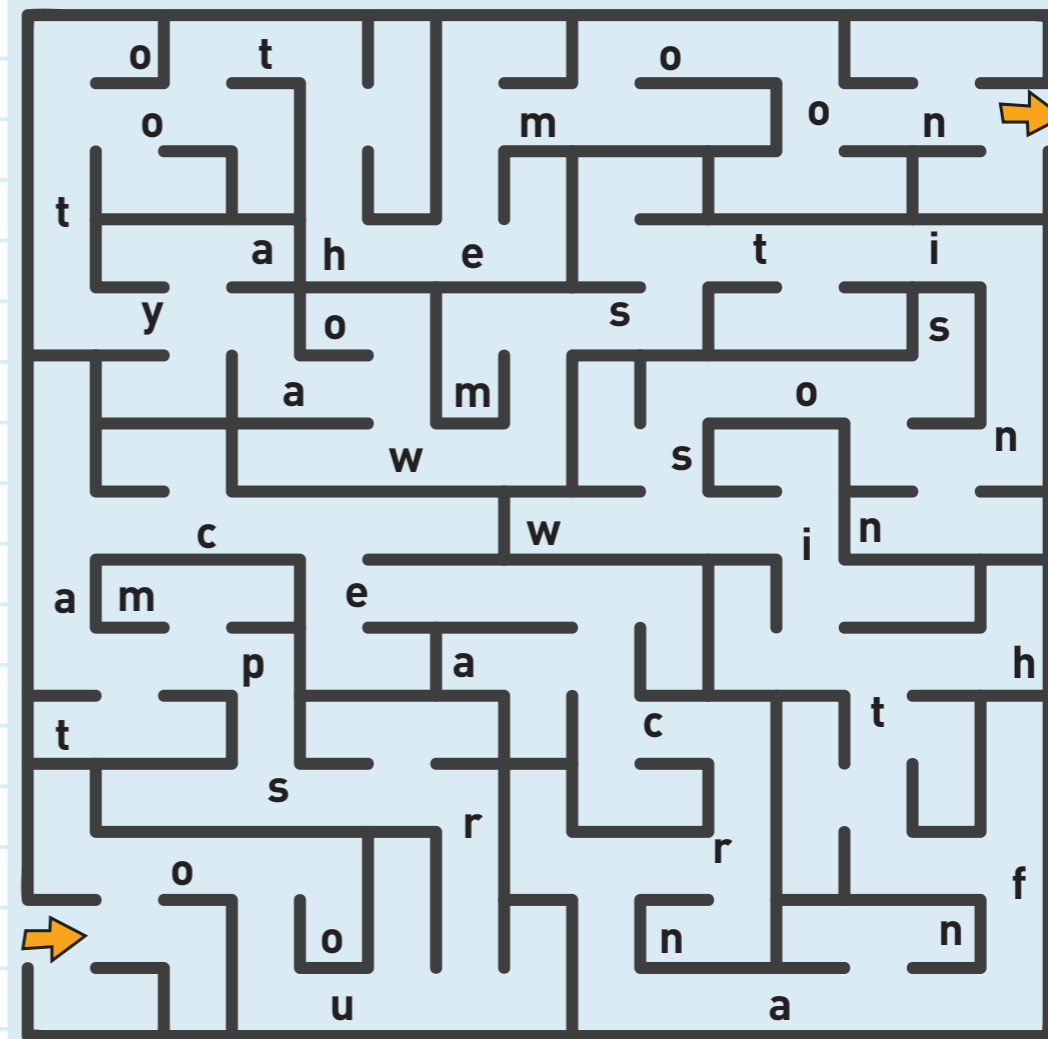


Draw a line between the pairs of identical spacecrafts



Maze in Space

First solve the maze and find the spacecraft's way to the Moon. Then fill in the letters on the way in the order they appear. What does the message say?



Odd One Out – Explain why?

- Aeronaut • Cosmonaut • Taikonaut • Spationaut _____
- Atmosphere • Stratosphere • Troposphere • Mesosphere _____
- Apollo • Colombia • Discovery • Endeavor _____
- Ride • Tereshkova • Earhart • Chawla _____
- The Fifth Element • Frozen • A Trip to the Moon • Avatar _____

I heard that because there is no gravity in space every person is 2 inches taller.

Great! I always wanted to be taller! Just remember that when you return to Earth – you go back to your original height...



Which one is an astronaut?

- Someone who studied astronomy in university **B**
- Someone who traveled above an altitude of 62 miles **A**
- Someone who spaces out a lot **C**

How many women traveled to space until today?

- 60 **S**
- 93 **T**
- 12 **R**

The first woman in space was:

- Emilia Earhart **R**
- Valentina Tereshkova **T**
- Christina Aguilera **A**

Who said – “That’s one small step for man, one giant leap for mankind”

- Neil Armstrong **R**
- Yuri Gagarin **N**
- Donald Trump **A**

What is Space Adaptation Syndrome?

- Sleepwalking **H**
- Motion sickness and dizziness that passes after adapting to the lack of gravity in space **O**
- Sudden loss of balance **T**

What is the difference between a “cosmonaut” and a “taikonaut”?

- There is no difference, both are space pilots **S**
- A cosmonaut is employed by the Russian space agency and a taikonaut is employed by the Chinese space agency **A**
- All the above **N**

The name of the first space shuttle in space is:

- Enterprise **V**
- Apollo **N**
- Colombia **A**

The first spacecraft that was launched to space was:

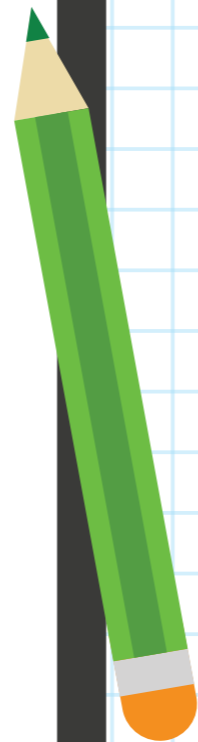
- Sputnik 1 **U**
- Shenzhou 5 **T**
- Apollo 11 **S**

A space station is:






































- The spacecraft’s launch device **A**
- A children’s play space at the mall **O**
- A spacecraft that allows people to live in space a long period of time **T**

Copy the letter next to the right answer.
What word did you get?

What do we know about the Moon?



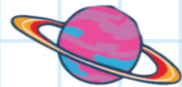
Crossword

They'll make the 1st Israeli Moon landin ↓	Used for space flying ↻		24 hours ↙		In this place ↙			Many vehicles ↙		That one ↙	Locating the way with tools ↓			
										Started a moon landing contest ↓		Friend ↓		
			Peak ↓		Used for spacecraft flying & landing [6,6] ↓			Break or hole →						
		1st woman in space (surname) →												
		Star in center of a solar system ↓							Grease →					
	3D area containing the universe →						Globe ↓	laid by a chicken →						
		Short for Ocean Pacific ↓	Having knowledge →							Short for laboratory →				
	Memo →						Short for North East ↑	Dog or cat →						
	Palace in India "...Mahal" ↓													
Blocks water on rivers →		Cookware →							Start moving ↓					
		4th planet from Sun ↓					Toy comp. that made women in space dolls →							
							Model ↓		1st American woman in space (surname) ↓					
Asian country with space research center →														
American Space Agency →							Short for directory →				↑	The first number ↗		
							Prep. ↓		Writing liquid →				Short for Oregon ↓	
					River in Burma →									
Measures magnetic power →														





Word Search



Search up, down, forward, backwards, and on the diagonal to find these hidden words.

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

Atmosphere, Astronaut, Taikonaut, Cosmonaut, Spacell, Magnetometer, Tereshkova, Ride, Resnik, Cristoforetti, Gagarin, Armstrong, Ramon, Colombia, Apollo, NASA, Spinoff, Space, Moon, Mars

Recently, NASA decided to redesign its spacesuits. Top designers and fashion houses were recruited for this mission. We are inviting you to try to design the new spacesuit too. The requirements: Easy to put on and off – preferably back opening and plenty of room for accessories.



Answers to the activities

Page 11 – Maze: Our spacecraft is on its way to the Moon

Page 11: Odd One Out – and why?

Aeronaut – not a space pilot

Atmosphere – not one of the atmospheric layers

Apollo – Not a name of a space shuttle

Earhart – Did not fly to space

Frozen – not a film about space

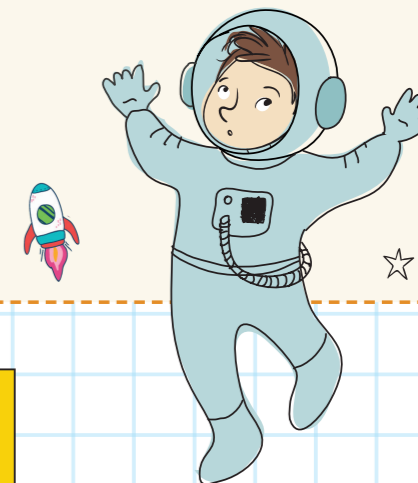
Page 12 Trivia – Astronaut

Page 4 – cryptogram:

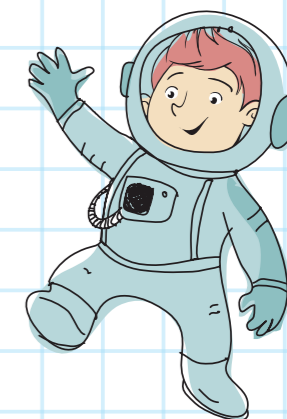
How to stop the spacecraft's flight with no breaks and land on the Moon?

To stop a car, we use breaks. To stop a spacecraft, we fly in reverse.

The spacecraft's super speed is stopped by the big rocket engine that spins in the opposite direction. The small rocket engines direct the spacecraft until landing on the Moon.



If you have an idea for a topic for our next issue, email it to us: education@spaceil.com



They'll make the 1 st Israeli Moon landing ↓	Used for space flying ↙	D	24 hours ↙	H	In this place ↙	C	Many vehicles ↙	I	That one ↙	Locating the way with tools ↓		
S	P	A	C	E	C	R	A	F	T	Started a moon landing contest ↓	N	
P		Y	Peak ↓	R	Used in spacecrafts for flying & landing (5,6) ↓	R		Break or hole →	G	A	P	
A		1 st woman in space (surname) →	T	E	R	E	S	H	K	O	V	A
C		Star in center of a solar system ↓	O		O			Grease →	O	I	L	
E	3D area containing the universe →	S	P	A	C	E	Globe ↓	laid by a chicken →	E	G	G	
I		U	Short for Ocean Pacific ↓	Having knowledge →	K	N	O	W	Short for laboratory →	L	A	B
L	Memo →	N	O	T	E	Short for North East	R	Dog or cat →	P	E	T	
Blocks water on rivers ↙	T	Cookware →	P	O	T				Start moving ↓	I		
D	A	M			E		Toy comp. that made women in space dolls →		L	E	G	O
Asian country with space research center →	J	A	P	A	N		Model ↓		1 st American woman in space (surname) ↓	O	N	E
American Space Agency ↙		R			G	Short for directory →	D	I	R	↗	The first number	
N	A	S	A		I	Prep. ↓	E	Writing liquid →	I	N	K	Short for Oregon ↓
				River in Burma →	N	A	M		D			O
Measures magnetic power →	M	A	G	N	E	T	O	M	E	T	E	R

Our new website is now live!
Visit us at
kids.spaceil.com

   #SpaceIL



The poster with the slogan "WE CAN DO IT" was designed in the year 1942 and was based on a photograph of a young woman that represented women doing roles that have been considered masculine until that time. This poster represents a stage in the feminist revolution and fight for equal rights for men and women.