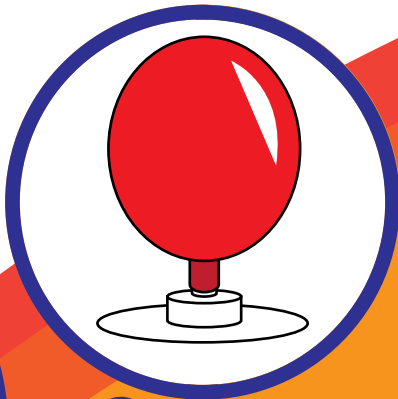


Inspiring  
the next  
Generation

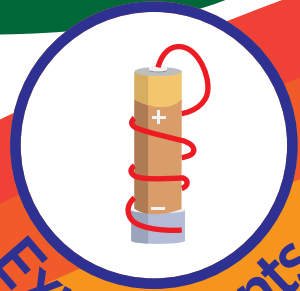
# SFERA KIDS



Drawing



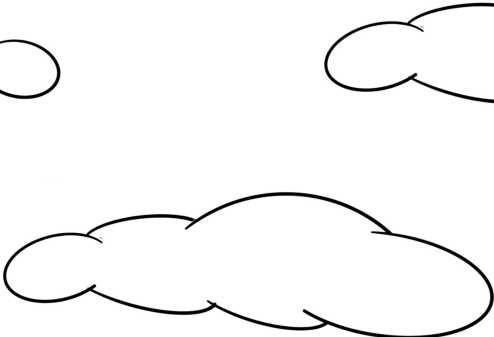
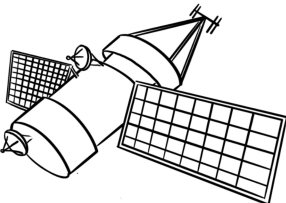
Crafts



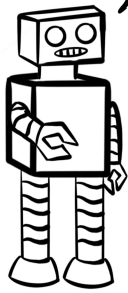
Experiments



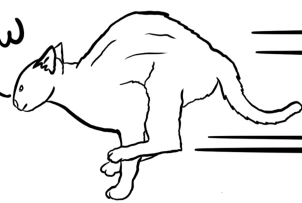
esplora®



stop!



mrow



Come here furr ball!



# What are these used for?

Read the sentences below and guess which item does what task.

- 1) Take a picture \_\_\_\_\_
- 2) Take a video \_\_\_\_\_
- 3) Type on your computer \_\_\_\_\_
- 4) Stores Digital information \_\_\_\_\_
- 5) Shows the Time \_\_\_\_\_
- 6) Plays music \_\_\_\_\_

Video Camera	Pendrive	Camera
Earphones	Watch	Keyboard

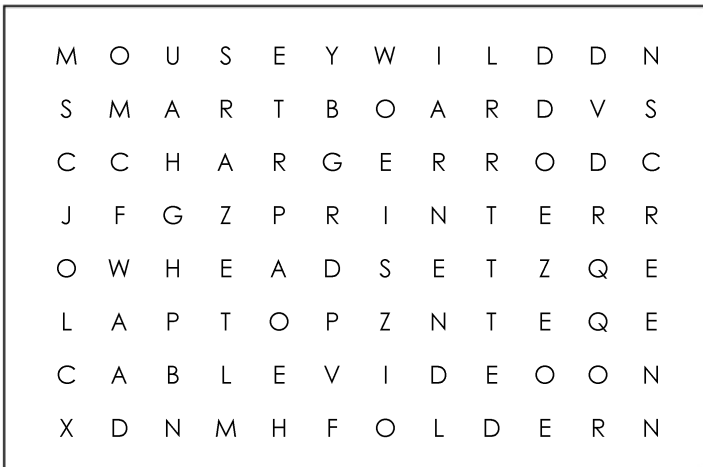
## Binary alphabet

Try writing your name in Binary using the alphabet below.

A= 01000001, B= 01000010, C= 01000011, D= 01000100,  
 E= 01000101, F=01000110, G=01000111, H= 01001000, I= 01001001,  
 J= 01001010, K= 01001011, L= 01001100, M= 01001101, N= 01001110,  
 O= 01001111, P= 01010000, Q=01010001, R= 01010010,  
 S= 01010011, T= 01010100, U= 01010101, V= 01010110, W= 01010111,  
 X= 01011000, Y= 01011001, Z= 01011010

## Word Search

Technology

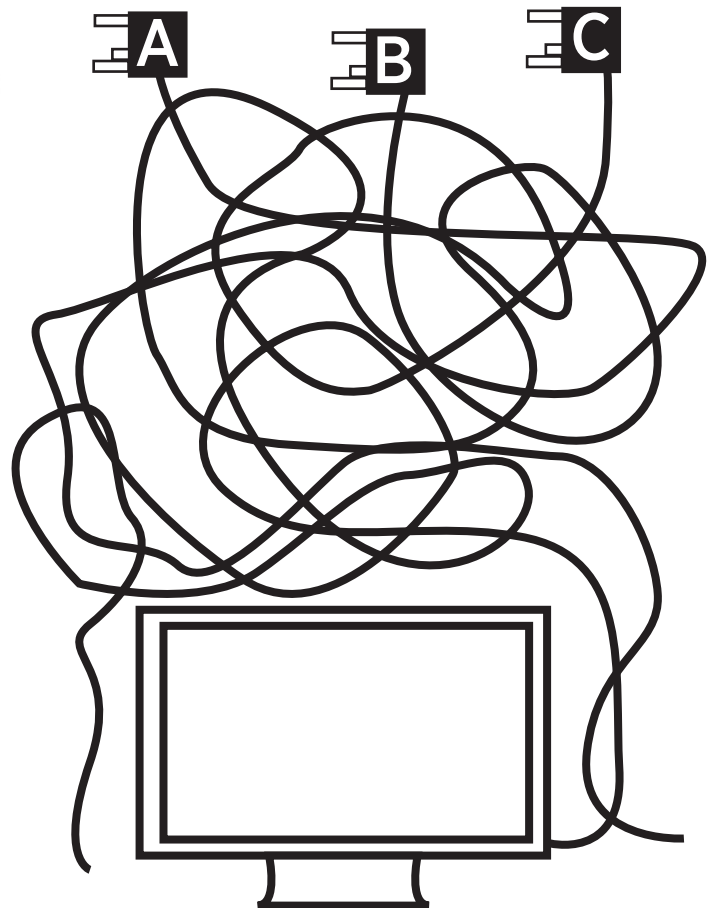


Find the following words in the puzzle.  
 Words are hidden → and ↓ .

- |         |         |             |
|---------|---------|-------------|
| CABLE   | HEADSET | SCREEN      |
| CHARGER | LAPTOP  | SMART BOARD |
| DVD     | MOUSE   | VIDEO       |
| FOLDER  | PRINTER |             |

## Path way

Which cord is attached to the monitor?

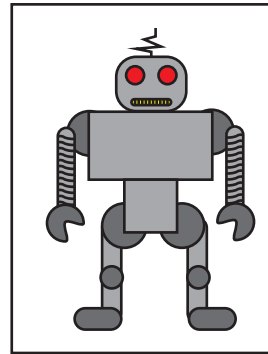


# Fact!

There are approx. 3.5 billion Google Searches per day.



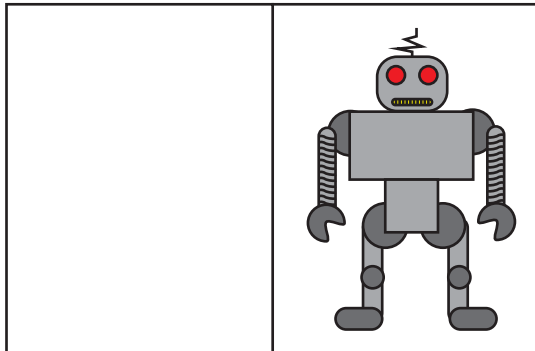
# Robot Card



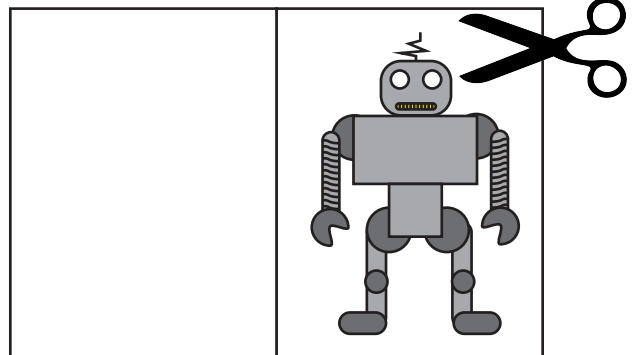
## Materials:

- A4 paper
- Colour pencils
- LED lights
- Coin Button Cell Battery
- Tape

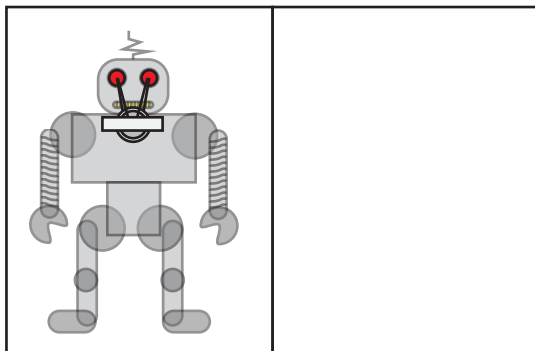
1) Fold the paper from the middle then use the coloured pencils to draw your own robot.



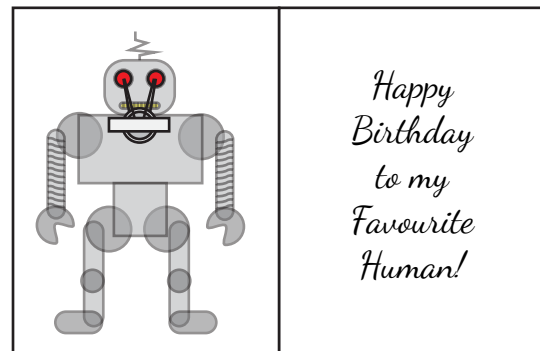
2) Cut out the eyes on your robot and insert 2 LED lights, one in each hole and bend the metal legs flat.



3) Turn the card around and follow this diagram. Attach the legs to the battery. Make sure the legs are connected to the right side then attach them with tape.



4) Write something on the inside and give to someone special.



Note: A battery has 2 sides one flat and one rounded, an LED has one short leg and one tall leg. The Long leg has to touch the flat side of the battery while the short leg has to touch the round side.

# 4-6 years

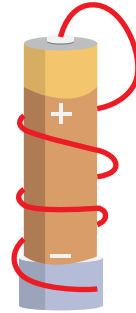


Adult Assistance  
Needed

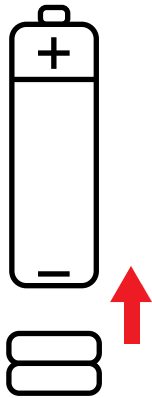
# Homopolar Motor

## Materials:

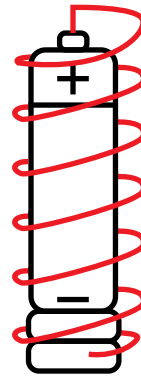
Neodymium magnets  
Battery  
Copper Wire



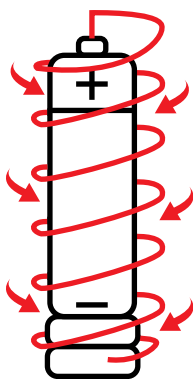
1) Attach the neodymium magnets to the bottom of the battery.



2) Bend the copper wire in a spiral shape and place it on top of the battery.

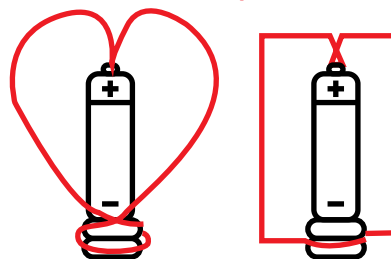


3) Release the copper wire and see what happens



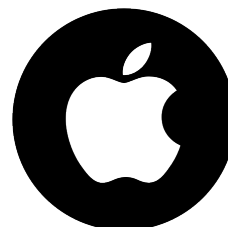
Try to experiment by flipping the magnets upside down and see what happens. You can also experiment with different shapes for the copper wire.

### Additional Shapes:



## Fact!

In every advertisement for an Apple iPhone, the time is always set as 9:41. This is the time that Steve Jobs announced the very first iPhone in 2007.



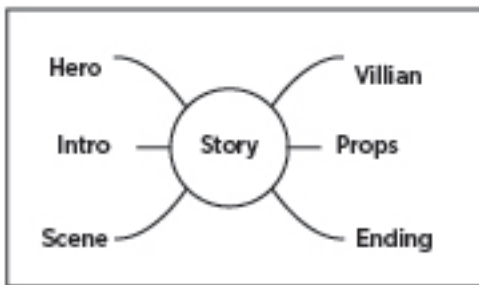
# Stop motion

## Materials:

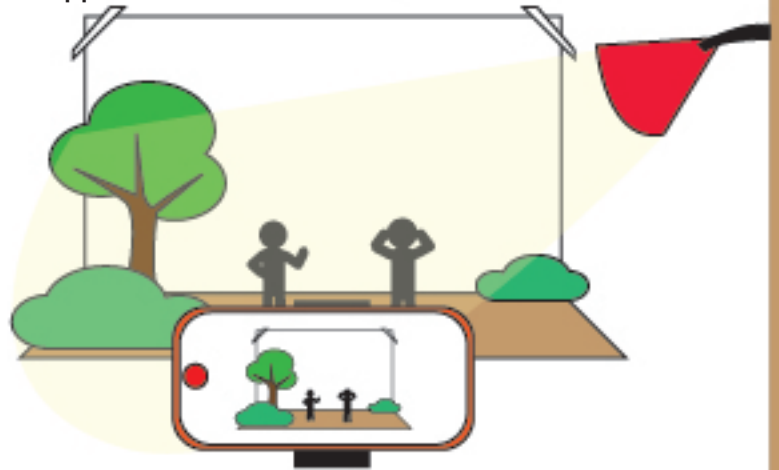
- Lego toys
- White sheet
- Smart phone/ tablet
- Stand or tripod
- A free stop motion app
- Light source (lamps)



1) Start creating your story by making up characters and other items that you think you require to make it fun.



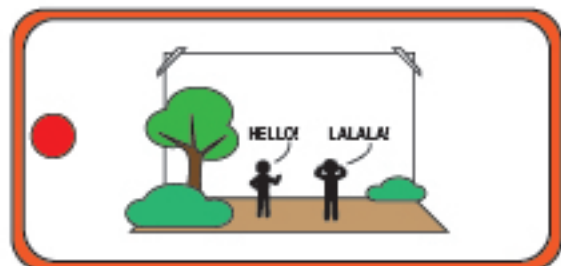
2) Let's start the story in one, two... Place your phone/tablet at a distance, mounted on a tripod or stand. Then start the stop motion application.



3) Move your characters little by little and take pictures of each movement. Then add the effects on the application.



4) Add sound and voices to your animation.



Send us what you created on our Facebook page @esploramalta.

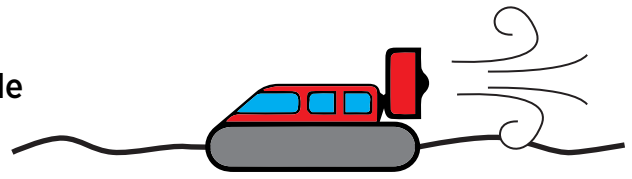
# 7-9 years



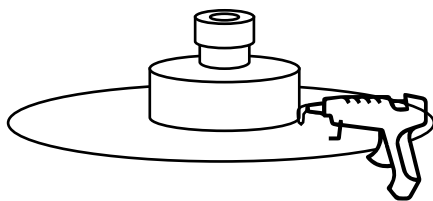
# CD Hovercraft

## Materials:

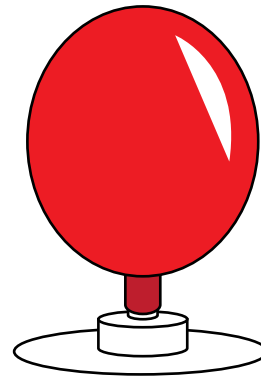
CD or DVD disc  
Pop-top cap from a washing-up liquid bottle  
Duct tape or hot glue  
Balloon



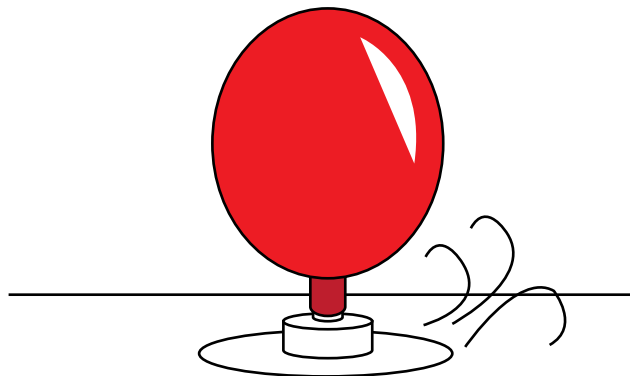
1) Position the top cap on the centre of the CD and use tape or hot glue to secure it in place.



2) Make sure the pop-top cap is closed then stretch the mouth of the balloon around it and leave it in place.



3) Place your CD hovercraft on top of a hard surface then open up the pop-top cap and release the balloon. See what happens.

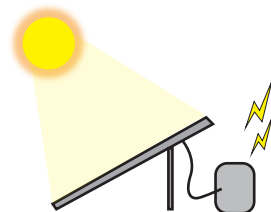


### How Does It Work?

When the balloon deflates, the air escaping it creates a space between the table and the hovercraft which has less resistance. As it is flowing out of the balloon, the air pushes down on the table and creates a lifting force which allows the CD to hover slightly above the table. This small version can only glide for a few centimeters if it is placed on a smooth surface, but real hovercraft can be used to travel over rough land, snow, water and even mud!

## Fact!

Solar energy is the most powerful source of energy used on our planet as it is obtained from radiant light and heat coming directly from the sun.



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