mini scientist

intel

School Name: Naas community National School

Student Names: 1. Candice Mahony

2. Robyn Browne

3. Griffin Voon

4. _____

Teacher Name: M. Colin Class: 4th class

Project Title: Mirrors

YouTube Link: _____

Short Explanation of Project: _____

We were doing are Project on Mirrors because we were intrested on The different Parts of a mirror

_____

_____

Do you have a signed photo release form for each student?

- Yes
- No

# Comments

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# Introduction

Why we chose this project...

What we hope to learn...

What is the problem/objective...

Are Pod would really like to learn about mirrors because we want to know more about mirrors. we are really intrested in learning and expirmenting on mirrors. we also want to know can mirrors be made of plastic. we hope to learn how mirrors work and how they are built and the diffrent parts of the mirror. and how does windows or gloss reflect aswell.

# Main Information

What we found out about our chosen topic.

How does a mirror work?

The key factor is a smooth surface because rough surface scatter light instead of reflecting it. A mirror is a smooth surface that shows images of the objects reflected. Most mirrors are a sheet with a shiny metallic coating on the back.

How mirrors are made.

Mirrors are made in factories with special machinery. First a sheet of glass is polished smooth and cleaned. Next the back of the glass is covered with a thin layer of silver, aluminum, or another metal. Then the metal is covered with copper, paint or varnish to protect it from scratches.

# Reflection.

The appearance of an image in a mirror is called reflection. Reflection reflects when light hits a surface. If the light cannot pass through the surfaces it bounces off, or reflects. Most surfaces absorb some light and reflect some light. Mirrors however reflect almost all the light that hits them. The metallic coating on the back causes the reflection. When you stand in front of a mirror, your body reflects patterns of a light to the mirror. Those patterns of light bounce off the mirror and go back to your eyes. Your brain then interprets, or reads, the patterns of light as an image of yourself in the mirror.

# Types of mirrors

Most mirrors are flat. They are called Plane mirrors. Images in a plane mirrors are reversed. For example if you raise your right hand while looking in a mirror you will appear to raise your left hand. People use plane mirrors to check their appearance. Other mirrors are curved. Convex mirrors curve outward like a dome. They make objects appear reversed and smaller than their actual size. Concave mirrors curve inwards like a bowl. At a distance they make objects appear upside down. Nearby however objects appear right side up and larger than their actual size.

# Experimental Methods

## Research Question:

If you put four fake candles in a 90° home made mirror would it show more than just one candle in the middle?

## Prediction/Hypothesis:

We think that if we put four fake candles in the middle of a home made 90° mirror that it would show more.

## Materials used:

For our first experiment we used Cardboard, glue, tin foil and a piece of Paper.

## Procedure:

First we cut a rectangle out of a Cardboard Shoe box. After that we ruled a piece of Paper then cut it out. Then we cut tin foil and glued it on the Cardboard. We tested it out by Putting our hand on the Paper.

## Observations:

We have learned that most mirrors have a sheet with a shiny metallic coating on the back. ~~We~~ have also learned that mirrors are made in factories with special machinery.

## Conclusion:

Our Pod had learned how mirrors work. Our Pod learned that you could make a mirror out of Cardbaord and tinfoil but obviously it doesn't work as good as a actual mirror.

## Diagram(s):

# Experimental Methods

## Research Question:

If you add more mirrors to the light maze would the light travel further?

## Prediction/Hypothesis:

Our Pod thinks that if you add more mirrors the light would travel further.

## Materials used:

For our second experiment the light maze we used alot of lego, small enough mirrors and play dough to stick the mirrors on the lego.

## Procedure:

We made lego into a maze and then we attached mirrors to the corners with playdough after that we shined a flash light through the maze and out the other side.

## Observations:

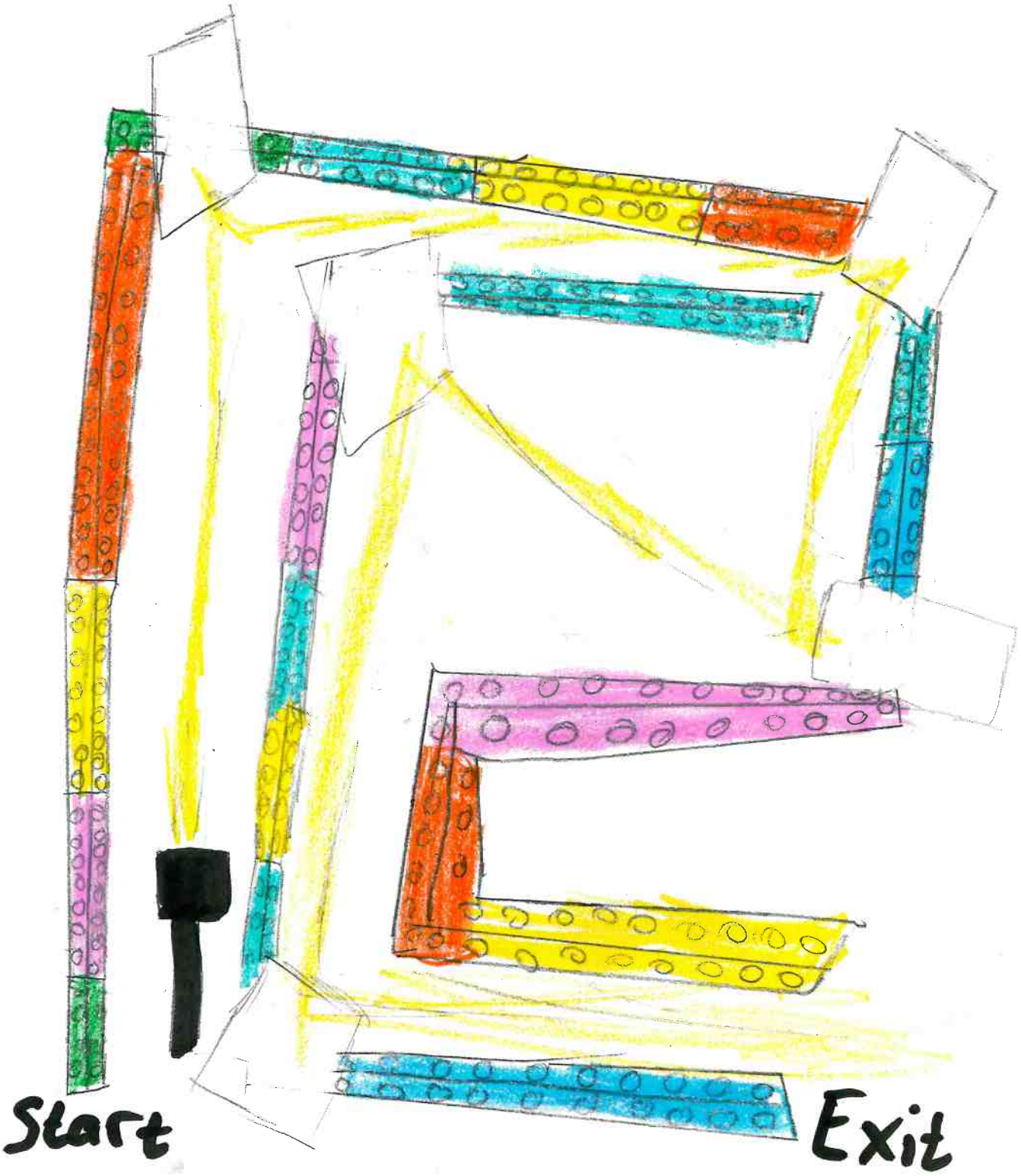
We have learned that light can travel through mazes when mirrors are in the corners of the maze.

## Conclusion:

Our Pod had learned how mirrors work. Our Pod learned that you can make light travel through a light maze. We used a light but it was not powerful enough. So we got a powerful light and it worked.

## Diagram(s):

# Light MAZE



# Mirrors

Diagram

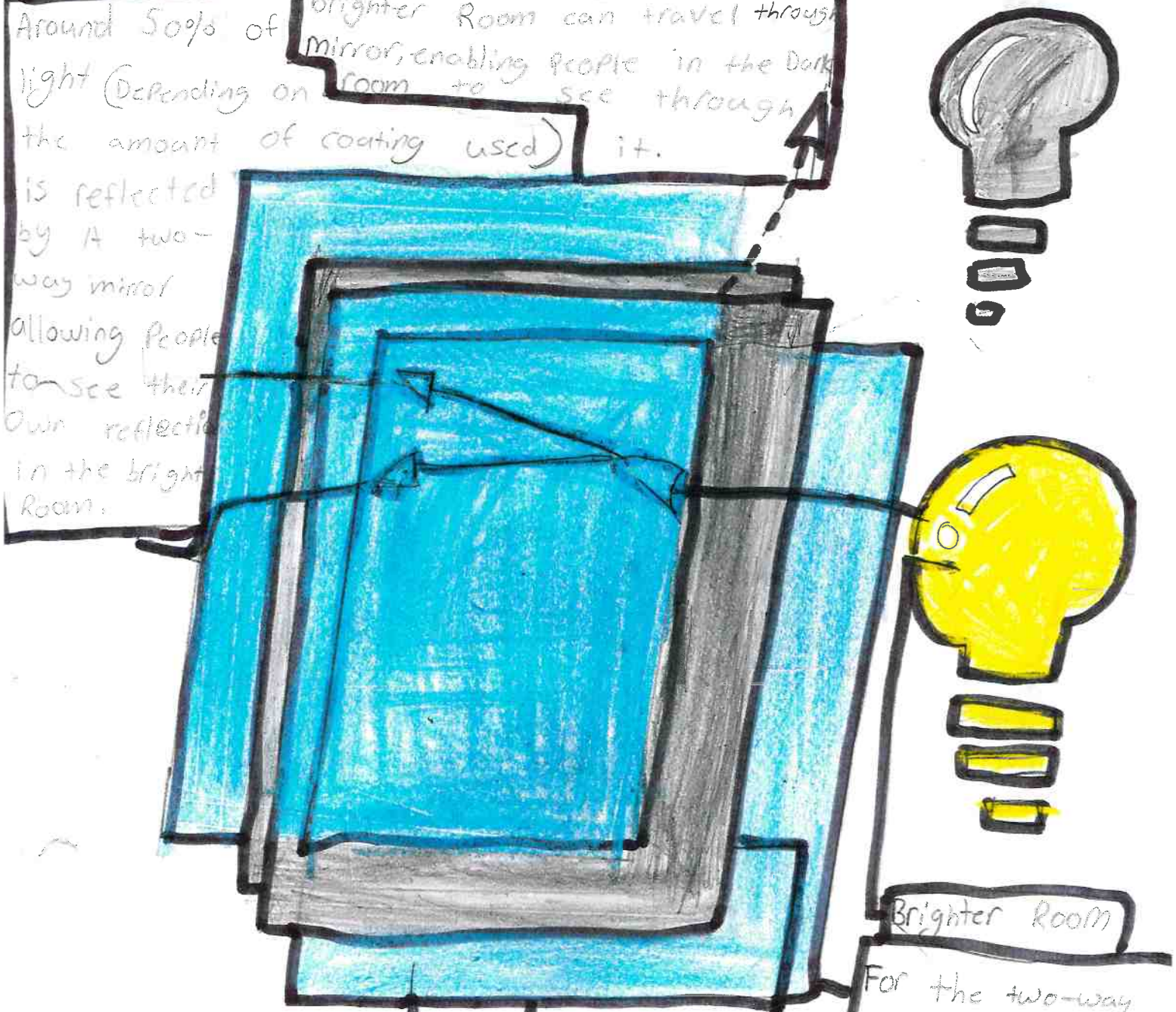
writing by Robyn Mirror
Drawing by Griffer

## Reflect light

Around 50% of light (Depending on the amount of coating used) is reflected by A two-way mirror allowing people to see their own reflection in the brighter Room.

## Transmitted light

Some of the light from the brighter Room can travel through mirror, enabling people in the Dark room to see through it.



## Glass

Any areas of the mirror not coverd in coating behave just like a window, allowing light to pass through

## Thin Reflective coating

This reflective metallic coating is key two-way mirrors function and is usually made of aluminium

## Brighter Room

For the two-way mirror to work, it is essential that the room you want to look into is brighter than the room you are standing in.

# Conclusions

What we learned.

The key discoveries that we made.

What we enjoyed most while doing the project.

What we found most challenging.

What we would do differently if we were to begin again.

our Pod learned how mirrors work, the different parts of the mirror and how light bounces off mirrors.

we discovered that if you make a maze and put mirrors in the corners of the light maze then it will bounce light so the light will travel through the light maze.

we enjoyed most was building the light maze and watching the light travel through the maze.

We found most challenging was sticking the mirrors to the corners of the light maze.

If we started again when we were doing our experiments for our mirror book we would change instead of using tinfoil and cardboard we would use a actual mirror. For our light maze we would of changed the size of the mirror and would of liked them to be smaller.

# Acknowledgements

Support we received with our project...

our teacher

our parents

# References

Books, websites, articles or other references that helped us with our project.

Kids.britannica.com

Youtube.com