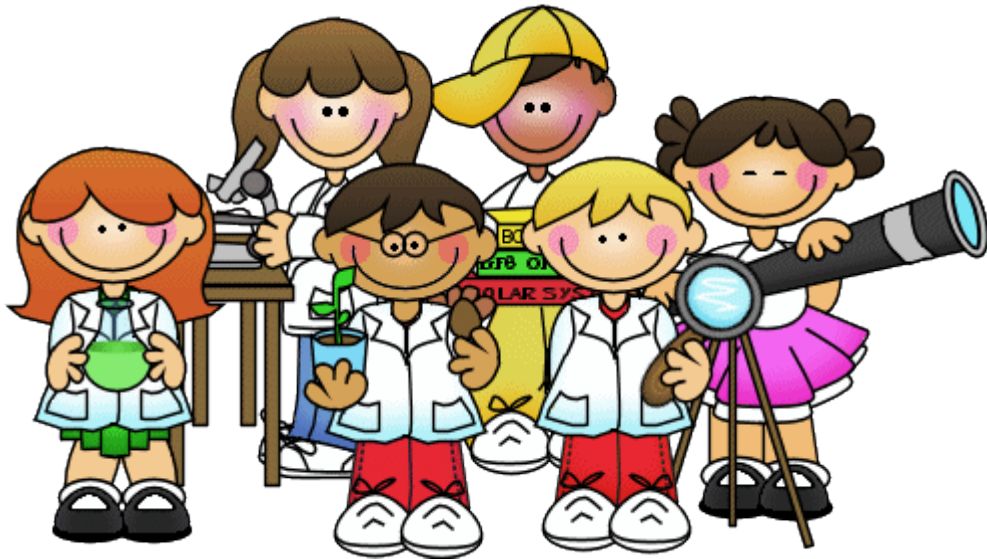


# Discovery Log



## Kilcoole Primary School

AoSME WW004

### Step 1: Science

1. Living things: How plants drink.
2. Energy and Forces: CD hovercraft
3. Materials: What material makes the best plane?
4. Environmental Awareness and Care:  
Global Citizenship and Energy and Saving Water
5. Living Things: Lung capacity
6. Energy and Forces: Paddle Boat Wars

# 1. Living things: How plants drink.



**Title:** How plants drink | Grace.f Name:

**Materials:**

White flowers

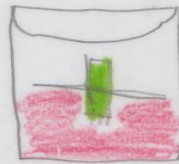
Celery sticks

Food colouring

2 glass jars

Water

A marker



**Method:**

1. First half fill the jars with water.
2. Then add red food colouring to each jar.
3. Next, cut the stem off each plant.
4. Place the 2 plants in different jars.
5. Lastly, mark the level of water in both jars.  
Leave for a few days.

**Result:**

Water moved in thin tubes up through plants.  
The flower stem will turn red. Thin red lines will run up the length of the celery.  
The water level drops.

## 2. CD Hovercraft (Energy & Forces):

5/11/17 Science: Make your own hovercraft 6/11/17 4<sup>th</sup> Green


Equipment: 1 old cd, 1 balloon, 1 pop-up top from a drinks bottle, glue or packing tape, ~~mineral oil to make it~~

Background information: push a cd across a flat table, what happens?  
The cd slows down and then stops.  
Why?  
The surface of the cd and the surface of the table rub against each other with a force called friction. Friction is a force that tries to stop objects sliding over each other. Smooth objects can slide over each other more easily than rough objects. You can slide across a timber floor more easily in your shoes.


What's happening?  
The hovercraft glides along the top of the table a much greater distance than the cd did on its own.

Why?  
The air escapes from the balloon out underneath the cd.  
The force of this air pressure pushes the cd up and out from under the bottle lid.

Put the lid of the bottle over a circle of the cd.




### 3. Materials: What material makes the best plane?



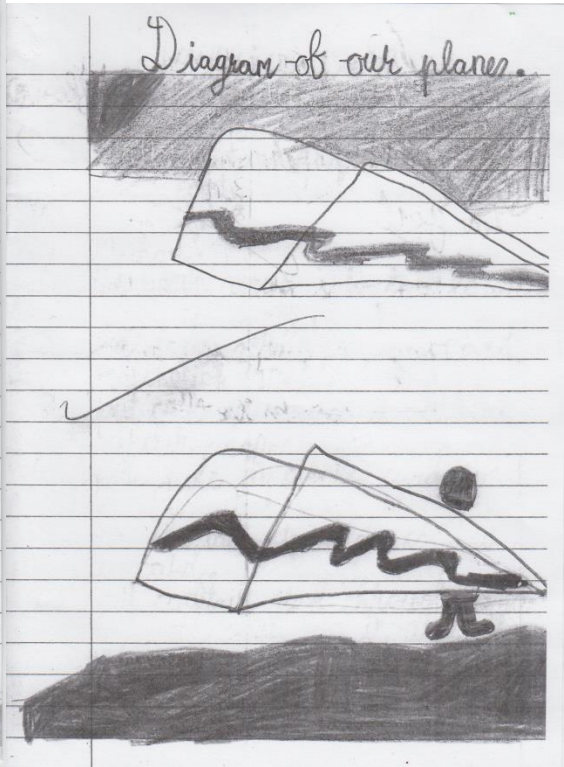
What material makes the best plane.

Equipment: A4 paper, A4 Card, A4 Sugar paper and tin foil.

Method:

1. Make one plane from each material.
2. Fold page in half like a mountain.
3. Fold back corners to the middle crease.
4. Fold back corners again.
5. Repeat the fold once more to make wings.
6. Hold the plane in the middle and launch.

	Material	Distance flown
1.	sugar paper	3m. 4cm
2.	A4 white paper	3m. 45cm
3.	Card	3. m
4.	tin foil	3m. 33cm



## 4. Environmental Awareness and Care:

### Global Citizenship and Energy

#### Action Day – Global Citizenship Energy

Our most recent action day was held on Tuesday 5<sup>th</sup> December. The Green Schools Committee created powerpoints and activities based on the theme of Energy. We used the results from our energy survey to create a powerpoint that was suitable to students' prior knowledge. We taught the classes about renewable and non-renewable energy, the effects of wasting energy and creating energy efficient schools and homes.

Each class was timetabled a slot during the day to take part in the interactive energy activities designed for the day. We had matching games, cut and stick and group games.

Classes designed and created signs for the school to remind us to save energy. Creative, colourful posters were created for the doors, lights and the windows.

A number of classes investigated different forms of renewable energy.

We announced that we were running an energy competition to raise awareness about saving energy in the home. Students were required to design their ideal energy efficient house. Entries flew in for this competition. The winners were announced two weeks later at a special assembly before Christmas, during which the students were reminded how to be 'Energy-Smart' during the Christmas period.

#### Step 3: Action Plan: 2017/2018

<b>Action/Target</b>	<b>Person/Group Responsible</b>	<b>Timeline</b>	<b>Progress Made</b>
Establish the Green-Schools Committee.	Ms Bowden	By mid September	Achieved
Conduct an Energy Audit	6 <sup>th</sup> Class	September 2018	Achieved

Create posters for rooms to remind students and staff to switch off lights when leaving the room.	Green Schools Committee	September 2018	Achieved
Inform parents of aims for the Green Schools programme and encourage energy conservation at home – Schools newsletter and website.	Ms Bowden	Christmas, Easter & Summer newsletter. Website – September onwards	Ongoing
Read electricity meter daily. Find the average electricity consumption per day.	6 <sup>th</sup> Class	September 2017	Ongoing
Appoint 'Door Detectives' to ensure doors in the school are closed as much as possible to reduce heat loss.	Green Schools Committee	October 2017	Ongoing
Research renewable energy sources	3 <sup>rd</sup> & 4 <sup>th</sup> Class	December 2017	Achieved
Inform classes how electricity is measured and what our average electricity usage is.	Green Schools Committee	December 2017	Achieved
Reduce our average electricity usage per day by 3kWh.	All classes	February 2018	Achieved
Create posters to remind people to close doors after them to reduce	Green Schools Committee	October 2017	Achieved

heat loss.			
Hold a 'Design an Energy Efficient House' competition. Winners posted on school website and on noticeboard.	All classes	December 2017	Achieved
Hold an 'Energy Information Day'. Energy powerpoints and activities will be timetabled and facilitated in each class.	Powerpoint & activities created by 6 <sup>th</sup> class. All classes participated in the information day.	December 2017	Achieved
Spread information about WOW Day. Record the amount of pupils travelling to school in a green way every Wednesday.	6 <sup>th</sup> Class	January 2017	Achieved
Increase the amount of people travelling to school in a green way by 40 before the 2 <sup>nd</sup> WOW Day.	All Classes	January 2017	Achieved
Create posters to remind people to close windows if the heating is on.	Green Schools Committee	January 2017	Achieved
Create a simple guide to show people how to turn off the radiators if needed.	Green Schools Committee	January 2017	Achieved
Interview a local business about energy saving measures they	6 <sup>th</sup> Class	January 2018	Achieved

may have adopted.			
Write a letter to retailers about the rising problem with single use coffee cups. Give suggestions for a resolution.	6 <sup>th</sup> Class	6 <sup>th</sup> Class	Achieved
Approach local shops about the rising problem with single use coffee cups.	6 <sup>th</sup> Class	January 2018	Achieved
Create posters for the local area to encourage people to use reusable flasks instead of single use coffee cups.	6 <sup>th</sup> Class	February 2018	Achieved
Contact 'Conscious Coffee Cup Campaign' for more information and advice	6 <sup>th</sup> Class	February 2018	Achieved – no reply to date
Run a recycling competition: Create something from one used plastic bottle.	Green Schools Committee	February 2018	Achieved
Contact a school outside Ireland(Spain) to share 'Green Schools ideas'.	6 <sup>th</sup> Class	February 2018	Sent but no reply
Inform all classes of the new recycling list in Ireland. Appoint bin monitors to ensure implementation.	Green Schools Committee & 2 <sup>nd</sup> Class	February 2018	Achieved

Remind all classes of the importance of following the guidelines in composting and recycling bins. Create new signs for compost bins.	Green Schools – Assembly	March 2018	Achieved
Commence a bin competition to encourage all classes to adhere to the recycling and compost lists.	Greens Schools Committee & Bin Monitors	March 2018	Ongoing
Interview students from other countries, in our school, about 'Green Ideas' in their home countries.	All classes	March 2018	Achieved
Organise a recycling workshop for people in our community to help launch the new recycling list in Ireland. Promote workshop through posters, website, twitter and school text system.	6 <sup>th</sup> Class & Parents	20 – March- 2018	In progress
Increase the amount of people travelling to school in a green way by 50 before the Easter Holidays.	All Classes	March 2018	In progress

## **Green Schools**

Our application for our current green flag 'Global Citizenship: Energy is in its final stages. A global citizen is someone who is aware of and understands the wider world and their place in it. Everybody can play a part in a green energy future. We have made great progress in saving energy right throughout the school. Our aim was to reduce our electricity usage by 3kWh a day. Last week our average electricity usage was down by 10 kWh a day! WOW day has also been a huge success this year. 92 more pupils now travel to school a green way compared to the start of the year. We have been reviewing our recycling habits in school. Information regarding the new recycling list in Ireland has been sent to each class. A competition is in progress to encourage responsible recycling. We also had a recycling workshop this term for students and parents to further explain the new recycling list in Ireland. Jim Callery, the Environmental Awareness Officer will have visited by end of term to audit our efforts. Well done and thank you to all who entered our Green Schools recycling competition this term.

## **Heritage in Schools: Patrick Hunt**

3rd Class have been extremely lucky to have had four visits from Patrick Hunt this term. On each visit, Patrick explored a different theme with us.

For the first session we looked at the **trees** in our local area. We learned the names of many different trees, many of which are growing on our school grounds. We learned to identify these trees by their various features, such as their buds, leaves / needles and bark. We walked around the school grounds and collected various twigs and branches. We brought our samples inside and completed some quick sketches.

For the second visit we looked at **flowers**. Patrick started by drawing a detailed diagram of the inside of a flower, which we copied and labelled. It was interesting to learn about the different parts of the flowers and the important jobs these parts do. We were then shown a variety of different flower samples that Patrick had picked from our school grounds. He told us how lucky we are to live in an area that is so mild, and that our ecosystem here is about 6 weeks ahead of other parts of the county and country. He was amazed at the amount of flowers on our school grounds in February.

We then went for a walk and collected some of our own wildflower samples. We learned lots of interesting facts about wild flowers and insects. Did you know that a bee can't see the colour red? And that the wildflower 'feverfew' can help ease the symptoms of migraines?

To finish the session, we took our flower samples into the classroom and drew them, while taking it in turns to look at a flower under a microscope.

For the third visit the theme was **birds**. We watched a very interesting video clip, where a crow had to solve a very intricate puzzle in order to get the food he wanted. It showed us how intelligent birds can be. Next we discussed the different types of birds in our area. Patrick had some teddy versions of three of the birds we mentioned (blackbird, house sparrow and goldfinch). When he squeezed the birds they made various chirping patterns. We played a 'Guess the bird' game, based on their chirping. It was very interesting.

Next, we crept outside to listen to all the birds. We had to stay very quiet. However, we were rewarded with a variety of birdsong. We used some binoculars to have a closer look at some Jackdaws, Blackbirds and Robins. Patrick taught us how to tame a Robin too.

The theme on the final week was **insects and mini-beasts**. We had a great time learning all about their various features and the different locations they prefer to live. We really enjoyed our mini-beast hunt outside and created some fantastic sketches and diagrams of the creatures we found.

## 5. Living Things: Lung capacity

### 4/11/17 Lung Capacity Experiment

Goal: To find out how much air your lungs can hold.

Equipment: Large

- A large basin of water
- A large plastic bottle with a cap
- Straws
- Cloth or towel

Method:

1. Fill the plastic bottle with water and put on the lid.
2. Turn it upside down in

4<sup>th</sup> yellow

## 11/17 Lung Capacity Experiment

the basin of water and remove lid.

3. Put one end of the straw into the bottle being careful not to let any air in.

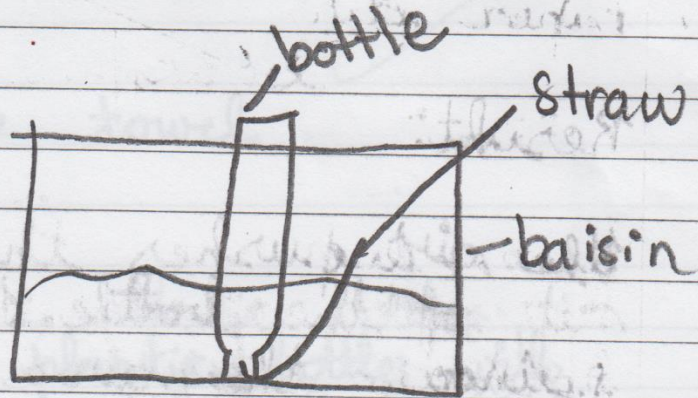
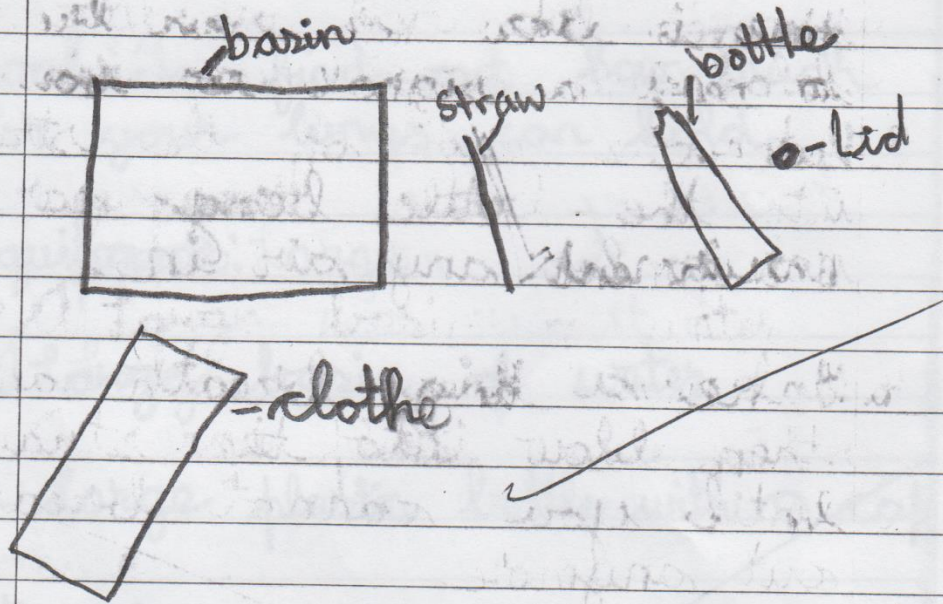
4. Take a big breath and then blow into the straw until you cannot breathe out anymore.

Result:

The air pushes the water out of the bottle. The space holding the air shows the capacity of the persons lungs.

7/11/17

# Lung Capacity Experiment



2. Turn it upside down in



## 6. Energy and Forces - Paddle Boat Wars

"7" MAKE your own paddle boat. 3rd Green.

Objective: To show how the use of the energy works to push the boat forward.

Materials: plastic bottle, 2 long pencils, elastic band and a basin of water.

Process:

1. tape to pencils opposite each other (extending 10cm past the bottom of the bottle)
2. cut a paddle from a plastic tub lid (2.5 x 5cm)
3. loop the elastic band around each pencil.
4. Insert the paddle between the elastic band.

5. turn the paddle round and around wards you.

6. place the boat in the basin of and release the paddle.

Result: the boat moves forward.

Conclusion: When you wind the elastic band you store energy, when you let go, this potential energy is changed into motion energy and the boat moves.

