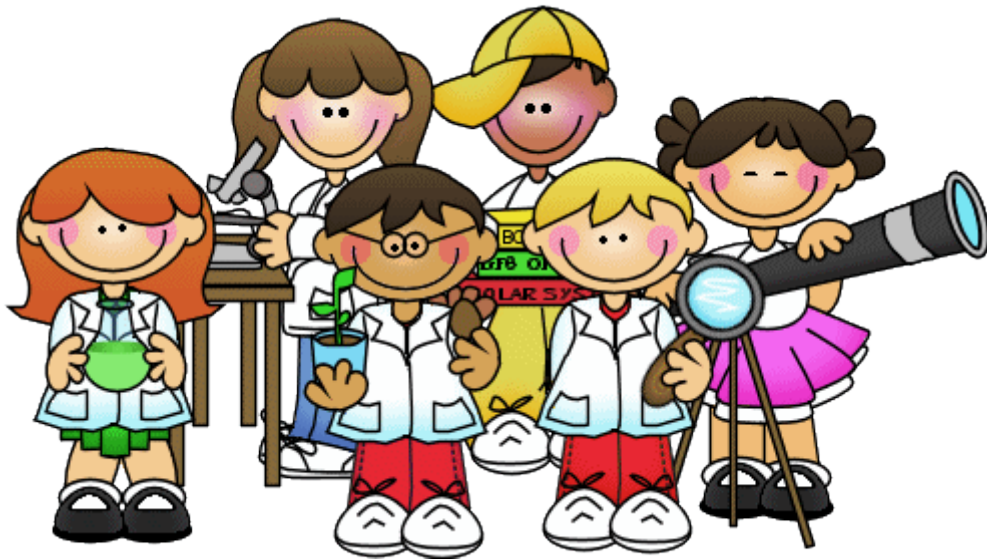


# Discovery Log



Kilcoole Primary School

AoSME WW004

## Step 4: Maths

- Maths Eyes
- Maths Trail
- Maths Bee
- Mathletics
- Data
- How to make a clinometer and measure the height of a tree

## **Maths Eyes**

As part of Maths week in November, each class in St Anthony's building was asked to put on their 'maths eyes' to examine their school environment. Pupils photographed elements of their environment and each class created a poster which highlighted some of the maths concepts they had observed. The senior pupils presented these posters to the pupils in 2<sup>nd</sup> class and the posters were swapped and discussed among the classes in the senior building.

The pupils really enjoyed the process and it reinforces how integral to our environment and lives maths is.

## **Maths Trail (example 4<sup>th</sup> Class)**

In Term 1 2017, all classes in KPS completed maths trails, age appropriate to the class group, around the school grounds. These incorporated many different maths strands and skills, promoting the language of maths while appreciating that maths is an integral part of our environment.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

(Stick this page into your copy and write the answers into your copy)

Maths Trail:

1. How many cars can you see in the carpark?
2. Order them into colour and makes.
3. Make a bar chart to represent this data.
4. What is the oldest/ newest car in the carpark?
5. Estimate how many steps it would take to walk from the fire assembly point to the far end of the yard. Measure.
6. Write down 7 symmetrical things that you can see in the yard/field.
7. What time is it?
8. List the odd numbers on the clock.
9. How long did it take you to do this maths trail?
10. What time will it be in 45 minutes?
11. Write the names of 5 objects you see that has a right angle.
12. Write the names of 6 2D and 3D shapes that you can see.

Extended Work:

Multiply the number of silver cars with the black cars.

Write questions using the words multiply, divide, fraction and decimal and percent. Answer them.

## **Mathletics**

During the second term, 3<sup>rd</sup> and 4<sup>th</sup> classes were given a fantastic opportunity to engage in **Mathletics** which is a series of activities that combine maths and PE. During relays, javelin, hurdles, shot put, sprinting and obstacle relay activities, the children were challenged with problem solving and critical thinking involving a variety of maths strands (time, money, shapes, place value and multiplication). In addition, during the team challenges, interpersonal skills, communication and collaboration skills were developed. Many different curricular areas were integrated during these activities; SPHE, Literacy, Maths and PE. Most importantly, the children were engaged and having fun while learning which is always a win win.

Earlier on in Term 1, all classes in KPS completed maths trails, age appropriate to the class group, around the school grounds. These incorporated many different maths strands and skills, promoting the language of maths while appreciating that maths is an integral part of our environment.

## **Maths Bee**

This year's annual Maths Bee took place in St Anthony's building on the 23<sup>rd</sup> of November. Each class was represented by two students. This

was a knock out competition where the pupils were asked to solve a variety of computational problems. The standard was extremely high with a number of pupils remaining in the competition for at least six rounds. The eventual winner was Cayden Elliot from 6th class with Daniel Walsh from 4th class coming a very close second. In the 3rd class competition the winner was Joseph Dempsey.

The pupils who represented each class were:

6th O - Cayden Elliott, Josh Devlin

6th Y - Lee Kelly, Nathan Keane

5th Y - Chloe O Reilly, Dale Van Dalen

5th O - Ethan Poland, Cillian Goff

4th Y- Ava Devlin, Daniel Walsh

4th O - Louise Mc Donald, Eolann Mackay

4th G - Sophie Camlin, Jack Ryan

3rd Y - Louise Keville, Aaron Keane

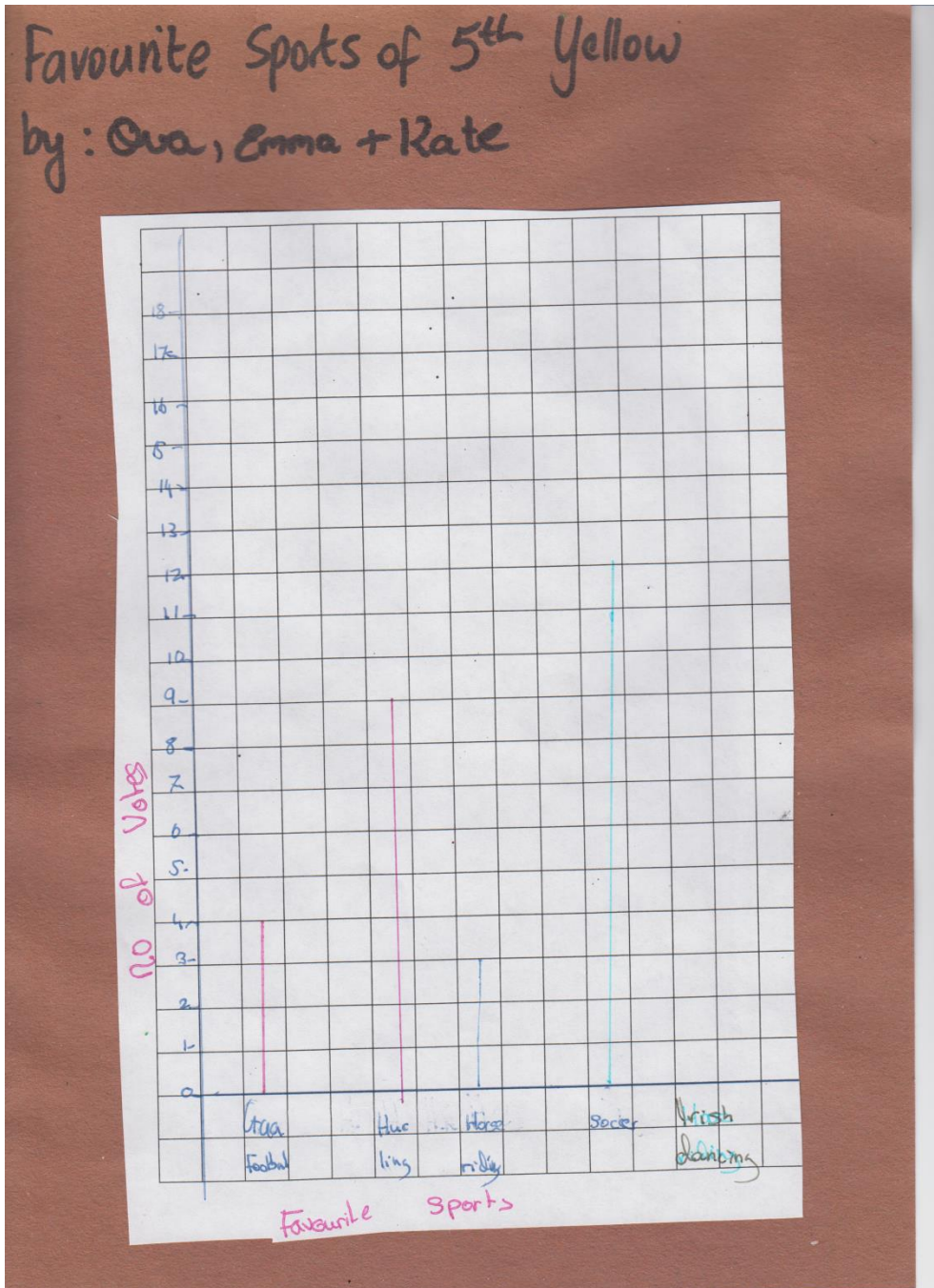
3rd G - Dylan Hyland, Timofei Hrapelman

3rd O - Joseph Drumgoole, Joseph Dempsey

## **Data**

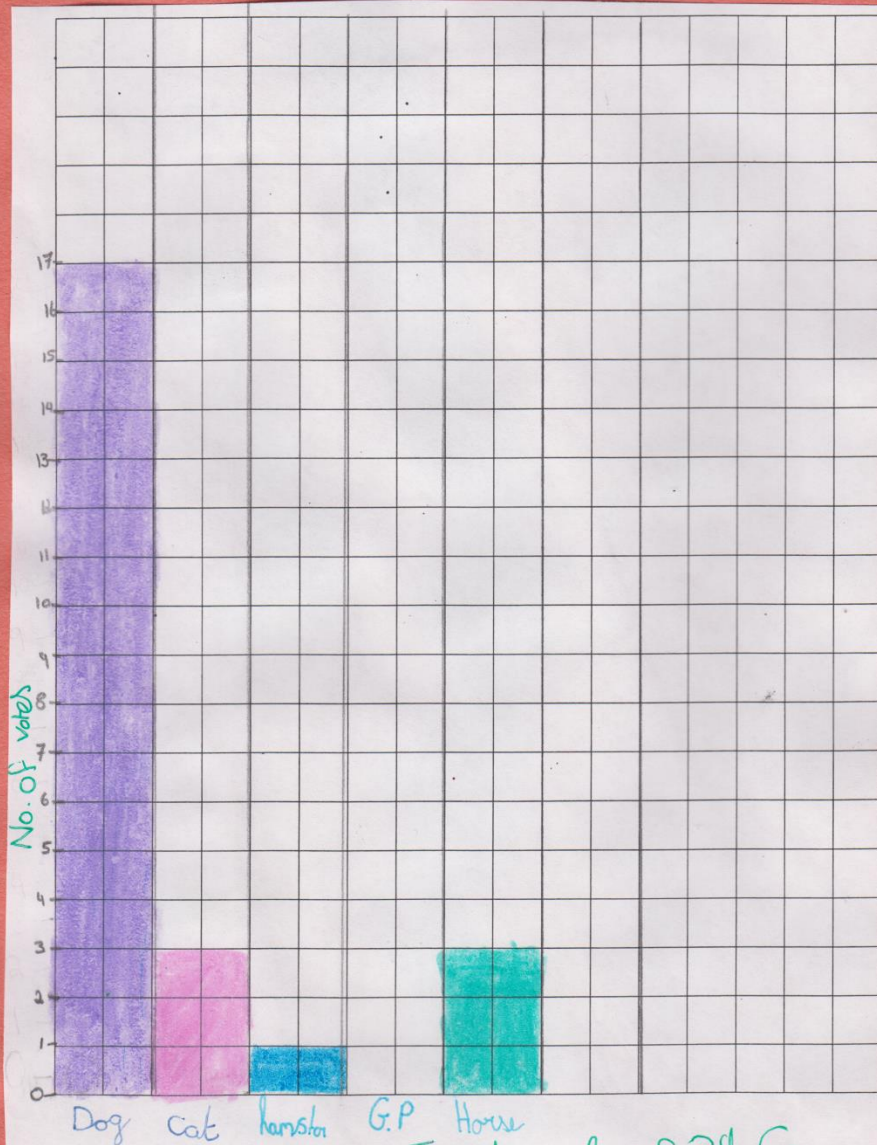
To further consolidate learning about the strand Data, 4<sup>th</sup> Class Yellow conducted surveys to collect data in all of the senior classes in St. Anthony's. Once the data was collected, the groups decided how they

would represent the information. They chose from pictograms, bar charts or bar line graphs.



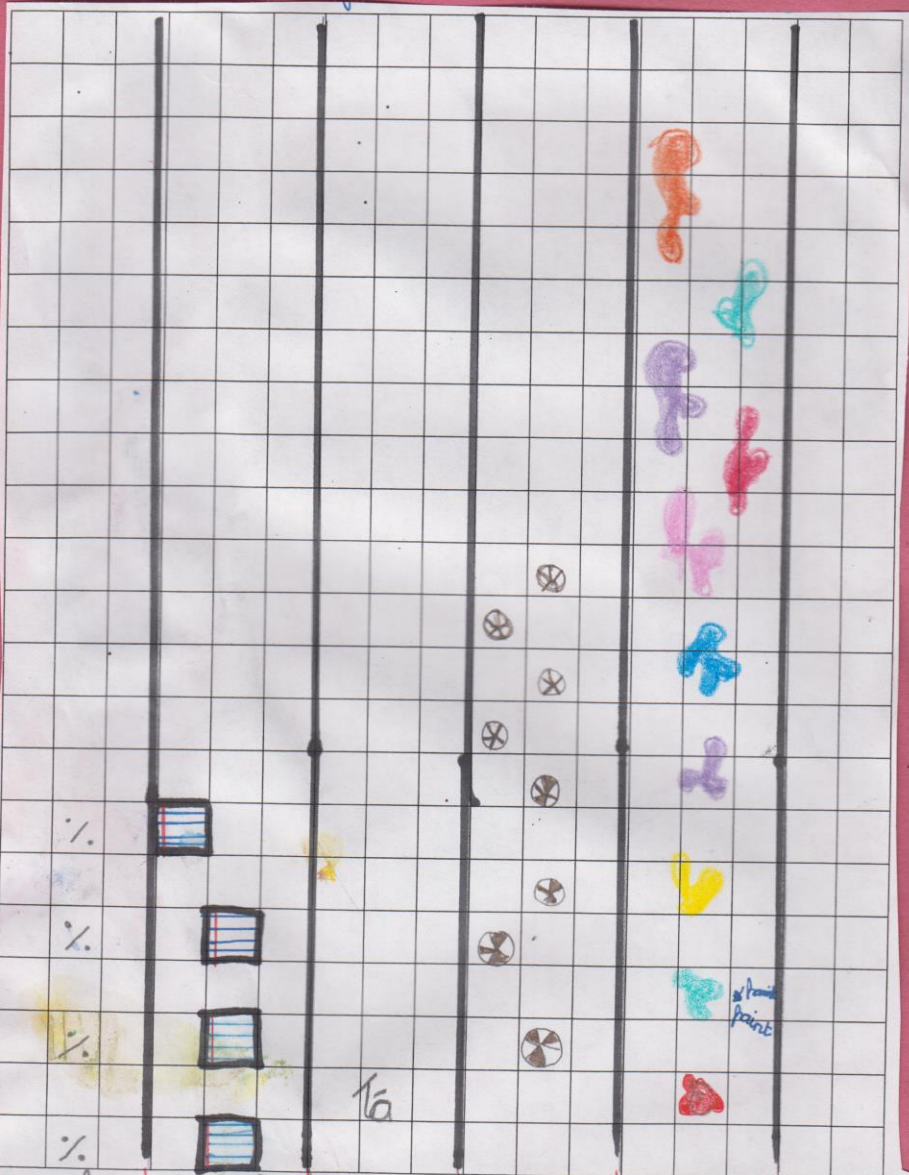
# Favourite Animals of 3<sup>rd</sup> Green

by: Skawa, Jenny + Emily



Name: Emily, Jenny, Skawa Fav. Animals of 3<sup>rd</sup> Green Date: 12/1/17

Favourite Subject of 3<sup>rd</sup> Orange  
 by: Chloe + Meabh



subject	maths	english	irish	P.E	Art
votes	4	4	1	8	10

1 picture = 1 vote

Name: meabh williams Date: \_\_\_\_\_

## How to make a clinometer and measure the height of a tree.

5<sup>th</sup> Yellow

### How to make a clinometer and measure the height of a tree!

~~What is a clinometer?~~  
A clinometer is a piece of equipment for measuring angles and calculating approximate height. It is often used in forestry, engineering and aviation.

Can you think of how it might be used in these areas?

~~Plants trees animals~~

Because they absorb Carbon dioxide from the air produce Oxygen for us to breathe (Photosynthesis). Trees also become the habitat of food for many animals/Birds.

~~Making the clinometer~~

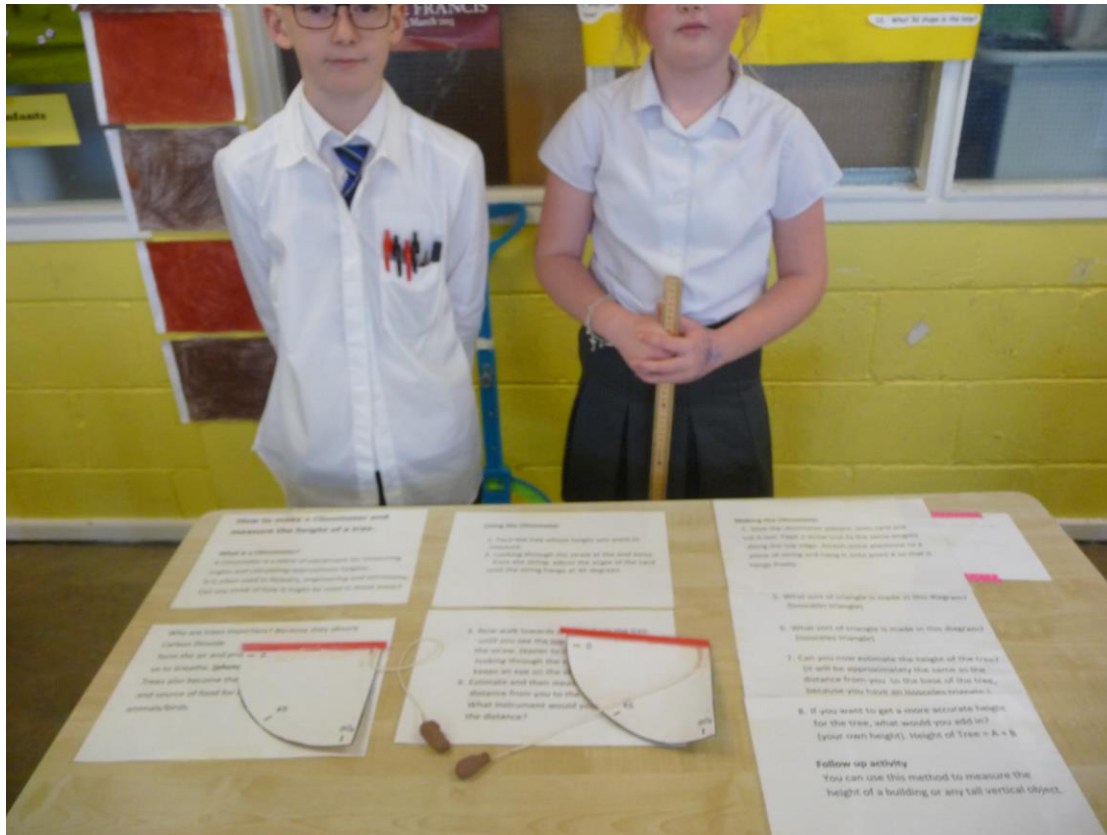
- 1 Stick the clinometer pattern onto card and cut it out. Tape a straw (cut the same length) along the top edge. Attach some plasticine to a piece of string and hang it onto point X so that it hangs freely.

~~Using the clinometer~~

- 1 Face the tree whose height you want to measure.
- 2 Look through the straw at the end away from the string. Adjust the angle of the card until the string hangs at  $45^\circ$ .
- 3 Now walk towards or away from the tree until you see the top of the tree through the straw. Ceases to do with 2 people - one looking through the straw while the other keeps an eye on the string.
- 4 You can then estimate the height of the tree. It will probably approximate answer because it is an isosceles triangle.
- 5 If you want to get a more accurate height for the

5<sup>th</sup> yellow

tree how would you do it? your own height  
at tree level you can use this method to measure  
the height of a building or any tall vertical object



**Why do we use a clinometer to measure the height of a tree?**

**What is a clinometer?**  
 A clinometer is a device for measuring the inclination (angle) and the height of an object. It is often used in forestry, engineering and agriculture. How can you use it to measure the height of a tree?

**Why are trees important? Describe their structure.**

Trees are important for many reasons. They provide oxygen and absorb carbon dioxide. They also provide shade and shelter for many animals. The structure of a tree consists of the trunk, branches, leaves, and roots.

**Using the clinometer**

1. Place the tree about 10m away from you.
2. Looking through the hole at the top of the tree, note the angle of the top of the tree from the string.

**Measuring the height**

1. Draw the right-angled triangle on the grid paper. Label the vertical side 'h', the horizontal side 'd', and the angle at the bottom 'θ'.
2. Measure the distance 'd' from the base of the tree to the point where you are standing.
3. Can you now estimate the height of the tree? It will be approximately the same as the distance from you to the base of the tree, because you have an isosceles triangle.
4. If you want to get a more accurate height for the tree, what would you add to it? (your own height).  $\text{Height of Tree} = h + s$

**Follow up activity**  
 You can use this method to measure the height of a building or any tall vertical object.