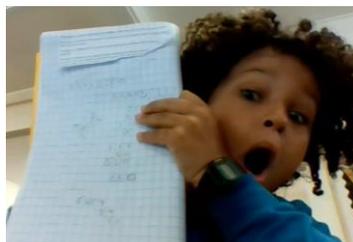


# A Journey into Maths



## Intent

In order to ensure that we provide all of the knowledge for pupils to access we use the Rising Stars objectives. These set out the national curriculum objectives, and we store them in medium term plans, split into 4 key areas “Number Sense”, “Additive Reasoning”, “Multiplicative Reasoning” and “Geometric Reasoning”. We give pupils the opportunity to access various areas of mathematics e.g. measurement and fraction, during the same thread, allowing for a more realistic exploration of maths.

Alongside teaching the 4 key areas we also have one discovery maths session per week where classes focus on investigations which support them with their problem solving and reasoning skills.

Not only do we expect children to learn the knowledge set out in the national curriculum, but also to have an awareness of maths in everyday life, along with being able to think for themselves about how to solve problems- drawing on a range of different strategies and techniques. Through our staff’s attitudes (this includes teachers and TAs) we hope to reverse the stigma around maths being “too hard” and instead enable children to see maths not just as a topic they learn in school but something which is applicable in life and is interconnecting.

## Implementation

Lessons are broken into 3-6 steps, dependent on age group and subject coverage.

**Step 1: Fluency, revision of a pre-requisite skill or basic practice**

**Step 2: Ramp it up- add in another mathematical element**

**Step 3: Reasoning and problem solving**

### ***Repeat***

This allows all children to have the opportunity to practice their problem solving and reasoning skills (step 3) as well as ensuring areas of maths are linked together and kept simmering (in step 2 specifically.)

Discovery maths sessions do not follow this structure and therefore support children in meeting the problem first and then needing to select which area of maths is appropriate to solve it.



# A Journey into Maths



Repetition is key to ensuring that children keep all areas of maths simmering, linked and long term. Step 2 of our daily lesson structure supports this, as do our discovery maths sessions as they do not necessarily link to the area which they have been studying that week.

Children are assessed every term against each of the national curriculum objectives for their year group. A summary score is then given following this, which shows whether the child is working below/towards/at the expected standard, or at greater depth. In addition to this, books are marked regularly and teachers and TAs are constantly assessing pupil's understanding during the lesson. We aim to recognise misconceptions quickly and address these for individuals, small groups or the whole class.

Our calculation policy demonstrates the manipulatives- images- abstract approach to learning and understanding, which is used in all classes with all ages. Teaching staff and TAs have received training on this in-house. We regularly have staff discussions about maths and strategies and resources which will support them further.

## Impact

Along with enabling all children to reach their potential with regards to the maths national curriculum, we also see many children **excited** about maths and positive about their attempts to tackle maths in everyday life. They are aware of it's place in the world and predominantly have the foundations they need in order to understand this. They have learnt that not being able to do something, or understand something, the first time, is more than just ok, but in fact a vital part of the learning process. They have shown resilience and perseverance and an ability to tackle problems themselves.

# A Journey into Maths

## Pupil Voice

- “I like maths because they help you learn and I like learning tables with my Dad” Year 2
- “I don’t like maths because they’re too hard and makes it hard for me to do learning.” Year 2
- “You need to practice to get better” Year 2
- “Often you do things and they work first time, but this is more of a challenge and it doesn’t always work. This way is much better.” Year 4

## An Example Progression of Skills

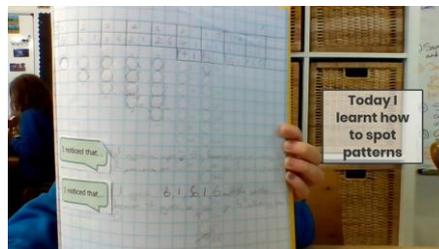
Skills develop across the school:

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count from 1 to 20	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	count in multiples of 6, 7, 9, 25 and 1000	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit

And within classes:

Year 1: to count in steps of 2		
To use a number line to skip count	To count without a visual aid whispering the numbers between the steps of 2.	To count in steps of 2.

## Examples of Learning Outcomes





## Our FAMILY Values

# A Journey into Maths



Maths is everywhere! Therefore, this is just a snapshot of how math has been incorporated into the FAMILY Values.

**Fairness:** Some classes looked at fair trade, they took part in the activity which shows the price of a banana and they then have to split that price between all the people and companies involved in its growing and distribution.

**Attitude to learning:** Children created a survey of what the class thought were the most important attitudes to learning.

**Making healthy choices:** We discussed that we should be spending 60 minutes exercising per day and created visual representations of 60 minutes which could be coloured in as the day progressed. Children monitored their own "active minutes" and completed their diagrams accordingly.

**International citizenship:** Children looked at how far apart different countries are, they also chose a country to explore, this included finding out about their currency.

**Living and learning safely:** This was at the start of our remote learning and therefore the focus was on e-safety as all maths work set by the school has been set online.

**Yearning for Success:** Summer Term- 2<sup>nd</sup> Half Term

## Cultural Capital

Cultural capital links well with our concept that maths is everywhere and that we want children to be able to make those real life links. They understand that they will need an understanding of maths beyond school, therefore maths will help them to be an educated citizen.

Examples of occasions where these links have been made explicit to children include: our school ski trip where they had to learn how to pay, budget and receive change in a new currency; considering time zones when communicating with other schools we have met through our ERASMUS projects and in the "Flying by the seat of your pants" webinars; and planning a route for the class to walk on a school trip- taking into consideration the distance they will have to walk.

## Our Multi-Disciplinary Approach

At times children themselves comment on when maths is present in other areas of our curriculum "Look Miss, maths really is everywhere", at other times it is so naturally embedded that they don't even notice. Our maths feeds into so many different subjects and areas of our school life it is definitely not limited to within the confines of a maths lesson. From looking at co-ordinates in geography, to timing laps in PE, looking at fractions of a healthy plate, creating a timetable for the day, cooking! Children enjoy being able to apply their skills to other areas of the curriculum and enjoy seeing the purpose for their learning.



# A Journey into Maths



## Last Year's Successes

Improved Year 6 SATS results- from 33% to 50%

Improved fluency across the school

Introduction of maths lesson structure to new staff

Increased awareness and use of the calculation policy

Took part on the goblin car racing for the first time.

## Priorities for this Year

For children to have access to, and use, a range of applicable resources. Embracing the progression between materials, visuals and abstract.

Better identification of dyscalculia and support for those pupils.

Stronger intervention for pupils at risk of not meeting the expected standard.