



TEDS DAY  
THURSDAY 2nd NOVEMBER 2023

WILLY WONKA'S SCIENCE FACTORY



# Welcome to Willy Wonka's Science Factory



**St. John's children, you are all such amazing scientists I hear. I desperately need your help. Something is happening in my factory and so many things are going wrong. Can you use your science skills to help me?**

Which enquiry type will you use today?

Research

Comparative/fair  
testing



Observation  
over time

Pattern seeking

Problem  
solving

Sorting and Classifying

Which of these science skills will use in your investigation today?



asking questions

making predictions

setting up tests

evaluating

observing and measuring

recording data

interpreting and communicating results

WE ALL NEED TO WORK TOGETHER. EACH CLASS HAS A PROBLEM TO SOLVE.

- Reception – Can you unfreeze the chocolate river?
- Year 1 – How can you grow a gummy bear?
- Year 2 – Which material is the “stretchiest” fabric to make dungarees for the Oompa Loompas?

## **KS2 - We can work together to solve these.**

- Year 3 – Willy Wonka wants to rebuild his Starburst wall. Which rock will be the strongest?
- Year 4 – How can Willy Wonka make ice cream without a freezer?
- Year 5 – Willy Wonka is designing a new suspension bridge across the river. He is using strawberry laces. Which is the strongest lace?
- Year 6 – How can we transport the chocolate eggs along the river?

## RECEPTION YOUR TASKS

Oh



Oh No! The chocolate river in the factory has frozen. Can you find out how to fix it?

## YEAR I –

Willy Wonka has made a new rule in his factory.



Only the tallest bears can travel in the boat along the chocolate river.

How can you grow the bears so that they can all travel along the river?





## YEAR 2



The Oompa Loompas have been a little bit naughty. They have been eating too many sweets and chocolates and they are putting on weight! Their dungarees are no longer fitting them and they need a new set. Can you find out which material will be the best to use?

It will have to be stretchy as they may continue to be naughty!

## YEAR 3

**Willy Wonka has heard that you are learning about rocks. He has donated some Starburst. He wants to build a wall out of these and would like you investigate how rocks are made and find him the strongest type of rock so he can make his wall.**

**Can you investigate and teach him? He doesn't even know that there are three main types of rock! He needs your help.**



## YEAR 4



Willy Wonka has decided to begin to make ice cream as well as chocolate and sweets. However, his freezer has broken. Can you find a way to help him make ice cream without the use of a freezer?



YEAR 5 -



Willy Wonka wants to make a new suspension bridge across the river. He wants to use Strawberry laces as cables.

Can you investigate how much force they can hold and also tell him which is the strongest?



## YEAR 6



Year 6, Willy Wonka needs a new way to transport his chocolate eggs along the river.



Can you design and test a boat that will do this?



TEDS DAY: Have we solve Willy Wonka's  
problems ?  
What have we learnt?

## End of day Review

- Let's review what each class did.
  - What have we found out?

# RECEPTION



We got to work solving Willy Wonka's problem and decided that we needed to melt the river. We knew that we would need heat for this - some of the suggestions were to use - lava, hot water, the sun, our hands, an oven or a microwave. We chose the microwave option! The children had a **solid** block of chocolate, they heated it in the microwave and it changed into a **liquid** then we left it in the classroom and it changed back into a **solid**. We knew how to melt the river and then discussed how to keep it as a liquid - our favourite solution was a heater under the river to keep it warm all the time!



# YEAR 1

We found that the gummy bears in the hot water melted!



We talked about how we could make our gummy bears bigger so that they could ride on the boat.







We talked about the seasons and thought that we could put of gummy bear in either hot water or cold water!



We found that the gummy bears in the cold water got bigger!

I predict that the stretchiest material will be \_\_\_\_\_.

Material	How far did it stretch?
 wool	2cm
 tin foil	0cm
 polyester	1cm
 nylon	5cm

What did you find out?

We measured the stretch of different materials and discovered that nylon was the stretchiest and might be the best material for the Oompa Loompas' dungarees!

At the end, we also measured how stretchy a mix of wool AND nylon was. The stretch we measured was 4 and a half centimetres!



YEAR 2





## YEAR 3

**We made Sedimentary, Metamorphic and Igneous rocks out of starbursts! We discovered that the Igneous starburst rock was the hardest, so would be best to build Mr Wonka's wall.**



## YEAR 4

We put cream, milk and sugar in a bag and sealed it up tightly. We then added salt as we knew it would make the temperature much colder and freeze the liquid faster.

We first compared two blocks of ice: one with salt and one without. We saw that the ice melted quicker with salt and it was also much colder.

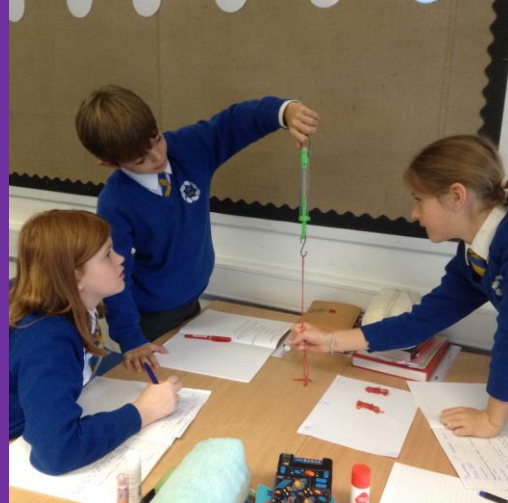
We put on our gloves to protect our hands from the cold and shook, and shook and shook!!!!!! Just as well we were in team!

Finally, we taste tested the result. We think Willy Wonka can make ice -cream without a freezer using ice and salt! The salt lowers the freezing point of water and makes it quicker to turn a liquid into a solid. Ice crystals form in the milk! We are going to investigate further at home!



# YEAR 5

In year 5 we were testing the strength of strawberry laces so we could tell Willy Wonka which one is best to use to build his bridges with.



Next, we used a force meter to measure the strength. We looped the lace around the force meter and pulled the end until it snapped and recorded the amount of force in a table.



We then did the test again to see if we had similar or the same results.

Finally, we gathered our results and evaluated them and told Willy Wonka that brand C was the strongest and recommended that he uses that brand for his bridges.



We first gathered 3 different brands of strawberry lace and labelled them A, B and C. We then made predictions about which one would be the strongest and which would be the weakest.

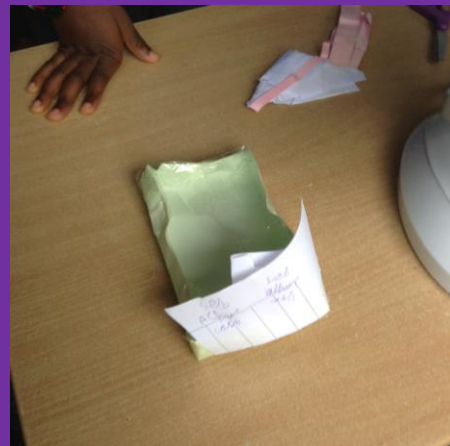
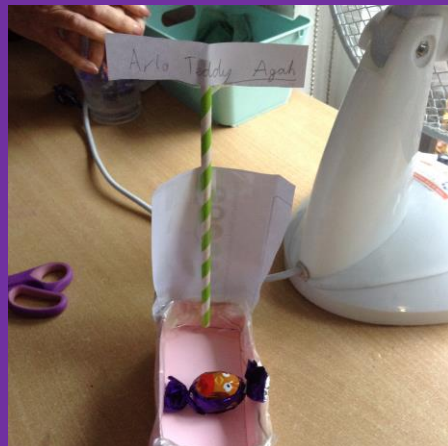
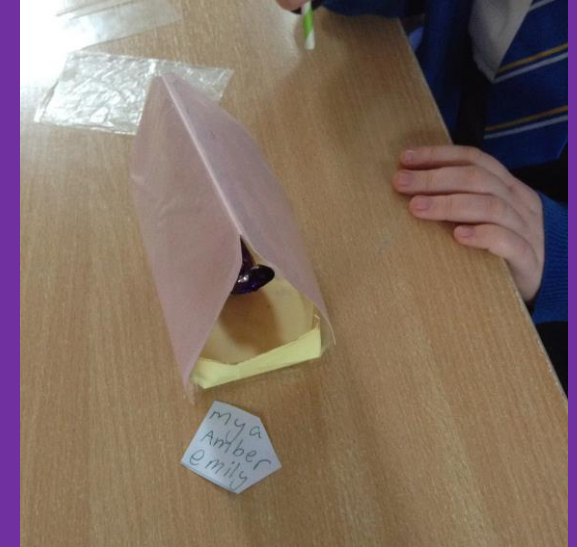


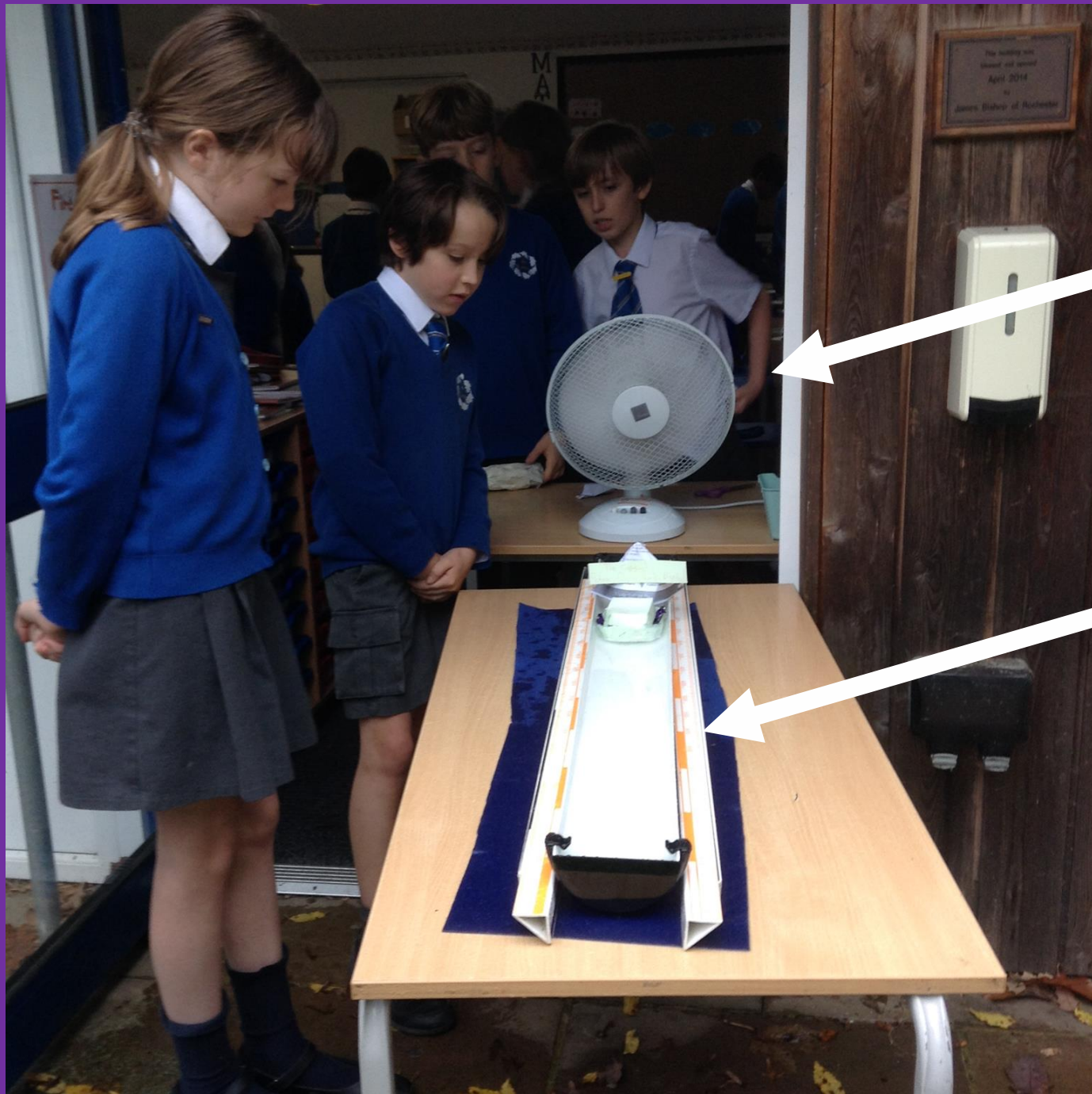
# YEAR 6

In year 6 we have been problem solving! How can we transport our precious cargo of Chocolate Robins down the river? We all had the same resources at the start of the investigation. We were allowed to make prototypes and load them with alternative cargo.

We then built our boats based on what we found out from our prototypes. One boat had a keel to keep it balanced on the river. We loaded the boat with precious cargo (chocolate) and launched them.

One design was able to transport 13 chocolate robins.





Fan  
Setting 1

Guttering  
containing water  
= OUR RIVER

And the winner  
was.....

Mei, Mysha and Violet with 13 chocolate robins!

