

Where is the Maths?

Mathematics Parent Workshop

Watling Park School

October 2019



Aims of the Workshop:

- To share the aims of the National Curriculum.
- To outline what is meant by 'Mastery'.
- To increase your confidence and understanding on how to support your child at home.



Aims of the National Curriculum:

How does the National Curriculum influence the way Maths is taught at Watling Park?

The national curriculum for mathematics aims to ensure that **all** pupils:

- become **fluent** in the fundamentals of mathematics, including through **varied and frequent practice** with increasingly complex problems over time, **so that pupils develop conceptual understanding** and the ability to **recall and apply knowledge** rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can **solve** problems by applying their mathematics to a variety of **routine and non-routine problems** with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- The expectation is that the **majority of pupils** will move through the programmes of study **at broadly the same pace**. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage.
- Pupils who grasp concepts rapidly should be challenged through being offered **rich and sophisticated problems before any acceleration** through new content.
- Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through **additional practice, before moving on**.

All pupils
develop...

I know
why...

I know
that ...

I know
how ...

Aims of the School Curriculum:

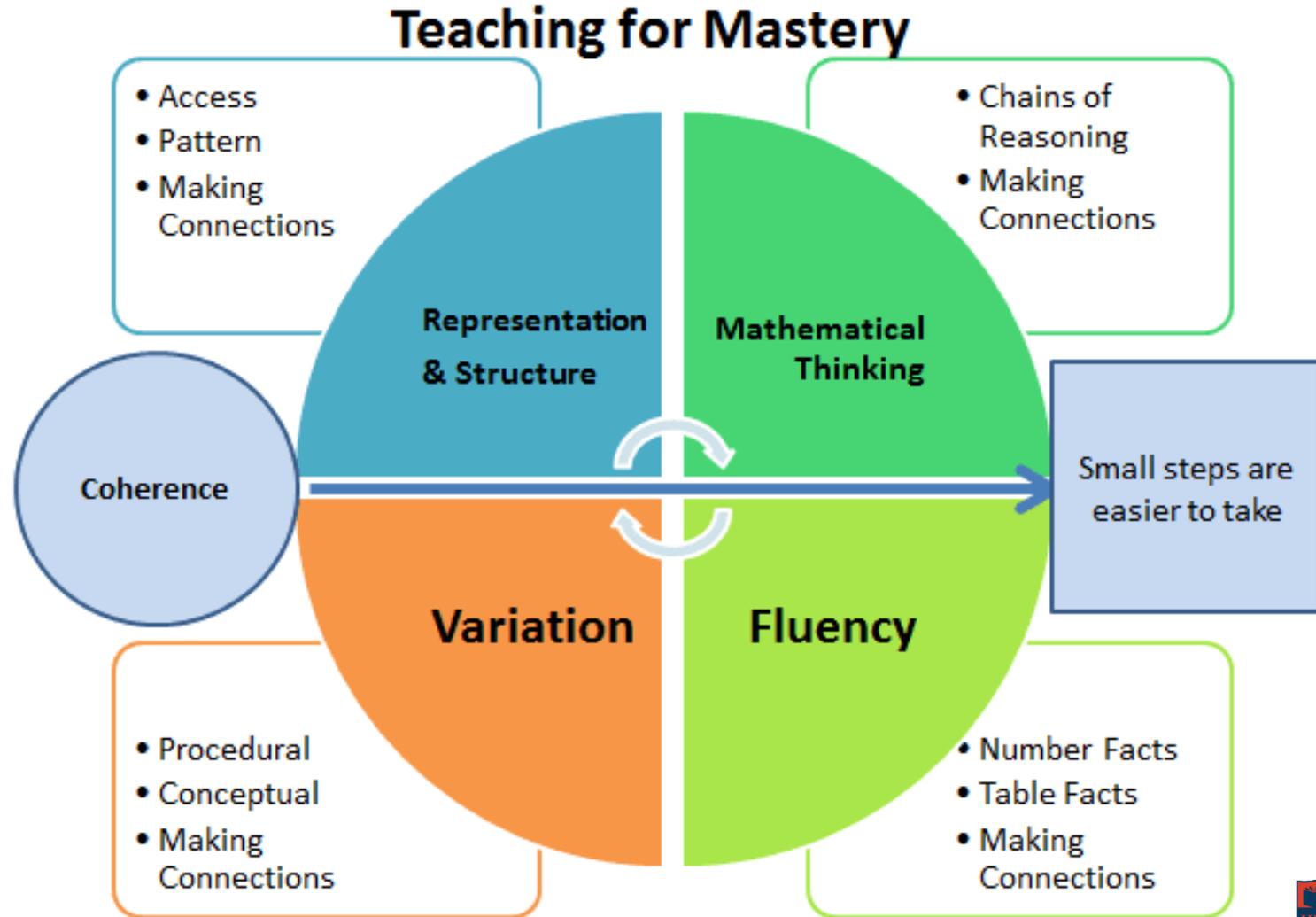
To develop mathematicians who:

- Take risks.
- Ask questions.
- Explore alternative solutions without fear of being wrong.
- Enjoy investigating mathematical concepts to solve problems.
- Explain their thinking, and present their solutions in a variety of ways.
- Reason logically and creatively through discussion of mathematical ideas.
- Become fluent, flexible thinkers who are able to see and make connections.

What is 'Teaching for Mastery'?

What are the 'Five Big Ideas'?

Acquiring a deep, long-term, secure and adaptable understanding of maths.



Baking: Where is the Maths?

~ A Real Life Context ~



What shapes do you see?

What do you notice about the door numbers on this side of the street compared to those on that side? **Why?**

What numbers do you see?

Let's see how many multiples of two we can say before we reach the high street.

How many footsteps do you think we will make before we reach the end of the road? Let's find out if you are correct?

What will the door number be in ten houses? **How do you know?**

What time is it? If it takes us 15 minutes to get to the shops, what time will we get there?

How many cars are there?

Please get two bags of sugar.

If we need 8 eggs, how many boxes do we need to buy?

Why?

Which packet of flour has more/less?
How do you know?

How many cupcake cases are in one packet?

How much does the flour cost?

Which one of these products is cheaper?

Why?

If this costs £1 and this £2, how much will we spend?

If we need 500g, is this enough?

Why?



If we need 2 eggs to make 12 cupcakes, how many eggs do we need to make 24 cupcakes?

How do you know?

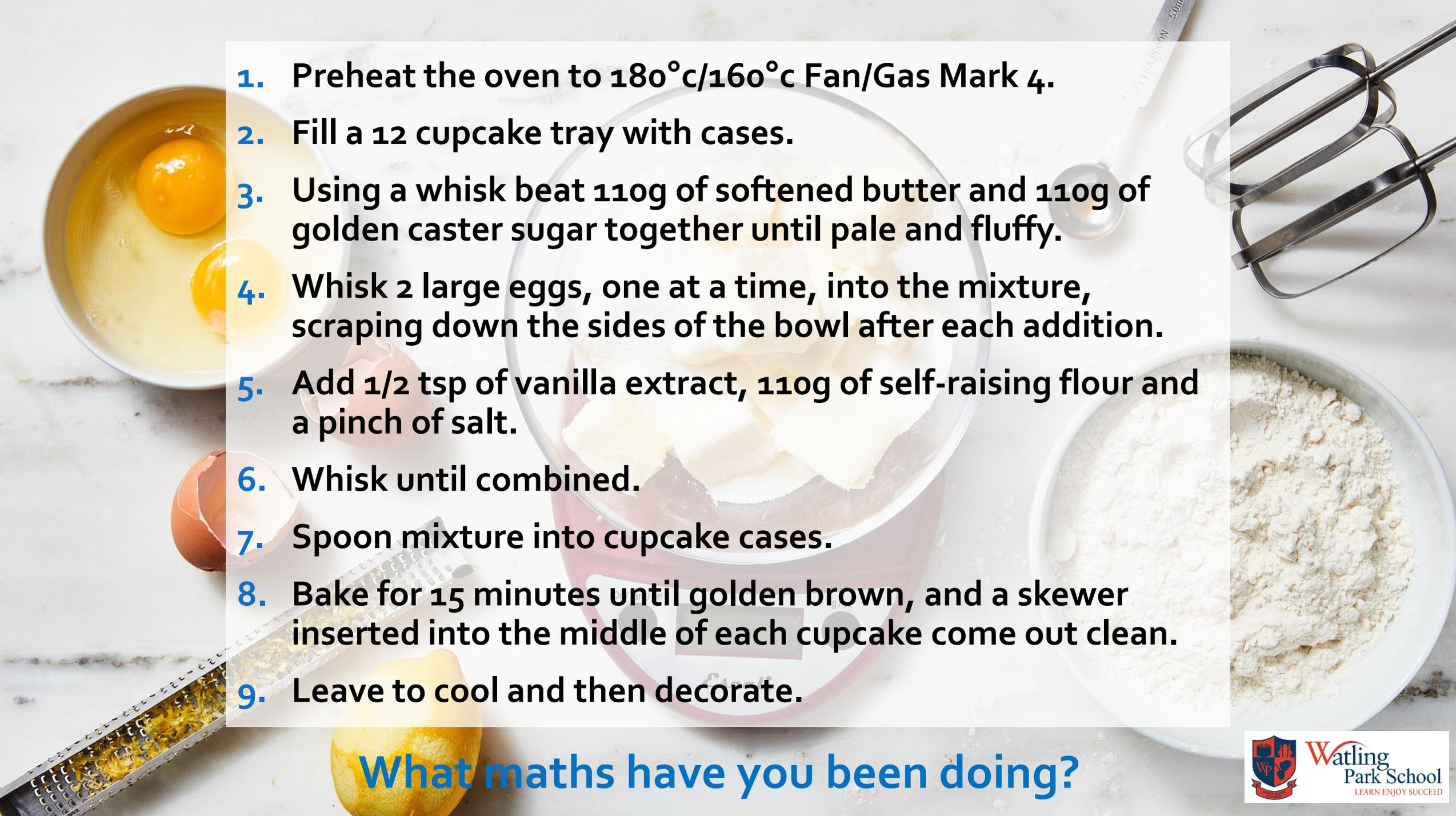
What numbers do you see within the recipe?

The oven takes 10 minutes to heat up, at what time can we put the cupcakes in?

If I have 10 cases, how many more do I need?

Why?

How many cupcake cases do we need to fill this tray?

- 
1. Preheat the oven to 180°C/160°C Fan/Gas Mark 4.
 2. Fill a 12 cupcake tray with cases.
 3. Using a whisk beat 110g of softened butter and 110g of golden caster sugar together until pale and fluffy.
 4. Whisk 2 large eggs, one at a time, into the mixture, scraping down the sides of the bowl after each addition.
 5. Add 1/2 tsp of vanilla extract, 110g of self-raising flour and a pinch of salt.
 6. Whisk until combined.
 7. Spoon mixture into cupcake cases.
 8. Bake for 15 minutes until golden brown, and a skewer inserted into the middle of each cupcake come out clean.
 9. Leave to cool and then decorate.

What maths have you been doing?



How many cupcakes have we made?

Cut your cupcake in half.

There are 12 cupcakes per tray and we have made 5 full trays, how many cupcakes altogether?

If we have 12 cupcakes and 4 people, how many cupcakes each?
How do you know?

How many cupcake cases are left? **Why?**

Home Learning Advice



- 1. Encourage children to play maths puzzles and games.** This will help children enjoy maths, and develop number sense, which is critically important.
- 2. Always be encouraging, and never tell children they are wrong** when they are working on maths problems. Instead find the logic in their thinking – there is always some logic to what they say.
- 3. Never associate maths with speed.** It is not important for children to work quickly, as it can trigger maths anxiety. Just because a child works slowly doesn't mean they are not able to do it!
- 4. Never share** with your children the idea **that you were bad at maths at school or dislike it.**

Home Learning Advice



5. **Encourage number sense.** What separates high and low achievers is number sense – having an idea of the size of numbers and being able to separate and combine numbers flexibly.
6. **Encourage a “growth mindset”.** Let students know that they have unlimited maths potential and that being good at maths is all about working hard. When children have a growth mindset, they do well with challenges and do better in school overall. When children have a fixed mindset and they encounter difficult work, they often conclude that they are not “a math person”. When they tell you something is hard for them, or they have made a mistake, tell them: “That’s wonderful, your brain is growing!”

Any
Questions?

