Welcome to Maths at Holmesdale

Maths at Holmesdale

- At Holmesdale Infant school we follow a mastery approach to the teaching of mathematics. Maths Mastery is a teaching and learning approach that aims for pupils to develop a deep understanding of maths rather than being able to memorise key procedures or resort to rote learning.

- The end expectation is for all pupils to have acquired the fundamental facts and concepts of maths for their year group, so that by the end of it they have achieved mastery in the maths they have been taught. At this point they are ready to move confidently on to their next stage of maths.

- Mastery of a mathematical concept means a child can use their knowledge of the concept to solve unfamiliar word problems, and undertake complex reasoning, using the appropriate mathematical vocabulary.

White Rose Maths Scheme

At Holmesdale Infant school we have adopted the **White Rose Maths** scheme as our main approach to teaching our children. As part of this approach, we teach an overarching block of learning about a particular topic, such as place value and this is then broken down into small steps of learning. The yearly frameworks are aligned with the National Curriculum and plan out children's journey to mastery by ensuring they tackle learning objectives in a logical order.

Y1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

Autumn term

Number
Place value (within 10) FREE TRIAL
VIEW

Number
Addition and subtraction (within 10)
VIEW

Geometry **Shape**
VIEW

Consolidation

Spring term

Number
Place value (within 20)
VIEW

Number
Addition and subtraction (within 20)
VIEW

Number
Place value (within 50)
VIEW

Measurement
Length and height
VIEW

Measurement
Mass and volume
VIEW

Summer term

Number
Multiplication and division
VIEW

Number
Fractions
VIEW

Geometry **Position and direction**
VIEW

Number
Place value (within 100)
VIEW

Measurement **Money**
VIEW

Measurement
Time
VIEW

Consolidation

Year 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

Autumn term

Number
Place value
FREE TRIAL
VIEW

Number
Addition and subtraction
VIEW

Geometry
Shape
VIEW

Spring term

Measurement
Money
VIEW

Number
Multiplication and division
VIEW

Measurement
Length and height
VIEW

Measurement
Mass, capacity and temperature
VIEW

Summer term

Number
Fractions
VIEW

Measurement
Time
VIEW

Statistics
VIEW

Geometry
Position and direction
VIEW

Consolidation

Act
Go to

End of Year 1 Expectations

Working towards Age Related Expectations
Count, read and write numbers to 100 in numerals.
Count in multiples of 10.
Given a number, identify 1 more and 1 less (to 20).
Recall some number bonds to 10.
Recognise, find and name half of an object, shape or quantity.
Sequence events in chronological order.

Working at Age Related Expectations
Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any other number.
Read and write numbers from 1-20 in numerals and words.
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
Represent and use number bonds and related subtraction facts within 20.
Add and subtract one-digit and two-digit numbers to 20, including zero.
Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
Count in multiples of 2s, 5s and 10s.
Recognise, find and name half and a quarter of an object, shape or quantity recognising that it is one of 'x' equal parts.
Compare, describe and solve practical problems for lengths and heights, mass/weight, capacity and volume and time.
Recognise and know the value of different coins and notes.
Recognise and use language relating to dates, including days of the week, weeks, months and years.
Tell the time to the hour and half past the hour.
Recognise and name common 2D and 3D shapes.

Working at Greater Depth
Begin to solve simple problems involving money.
The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties.
Solve one step problems involving addition and subtraction, reasoning about their methods and thinking.
Solve one step problems involving multiplication and division, reasoning about their methods and thinking.
Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, times using non-standard measures, moving to standard units.
Able to reason, at an age-appropriate level, about numbers to 100 (and some beyond).

End of Year 2 Expectations

Working towards Age Related Expectations
The pupil can read and write numerals up to 100.
The pupil can partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them.
The pupil can add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus.
The pupil can recall four of the six number bonds for 10 and reason about associated facts.
The pupil can count in twos, fives and tens from 0 and use this to solve problems.
The pupil knows the value of different coins.
The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties.

Working At Age Related Expectations
The pupil can partition two-digit numbers into different combinations of tens and ones explaining their thinking verbally, in pictures or using apparatus.
The pupil can add and subtract any 2 two-digit numbers using an effective strategy, explaining their method verbally, in pictures or using apparatus.
Recall all number bonds to 10 and within and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.
The pupil can recall multiplication and division facts for the 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary.
The pupil can identify one half, one quarter, two quarters, one third and three quarters of a number or shape and know that all parts must be equal parts of a whole.
The pupil can use different coins to make the same amount.
The pupil can read scales in divisions of ones, twos, fives and tens.
The pupil can read the time on the clock to the nearest 15 minutes.
The pupil can name and describe properties of 2-D and 3-D shapes including number of sides, vertices, edges, faces and lines of symmetry.

| Working at Greater Depth |
|---|
| The pupil can read scales where not all numbers on the scale are given and estimate points in between. |
| The pupil can recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts. |
| The pupil can use reasoning about numbers and relationships to solve more complex problems and explain their thinking. |
| The pupil can solve unfamiliar word problems that involve more than one step. |
| The pupil can read the time on the clock to the nearest 5 minutes. |
| The pupil can describe similarities and differences of 2-D and 3-D shapes, using their properties. |

How has Maths Changed since I was at school?

- Maths hasn't changed, we are still teaching mostly the same methods you were taught at school but what has changed is how we look at the **different representations** of maths e.g. 10 frames / bar models and place value counters and now we teach them **multiple methods**

Why Teach multiple methods?

- My teaching them multi methods we are encouraging flexible thinking so that children can start to choose the most efficient method which may not always be the same

- Research has shown that multi representations help children to grow a deeper understanding of the methods behind the maths

- By teaching them different ways to solve problems each individual method/representation shows something slightly different which then provides them with a toolkit to help solve more complex problems later on

Representations
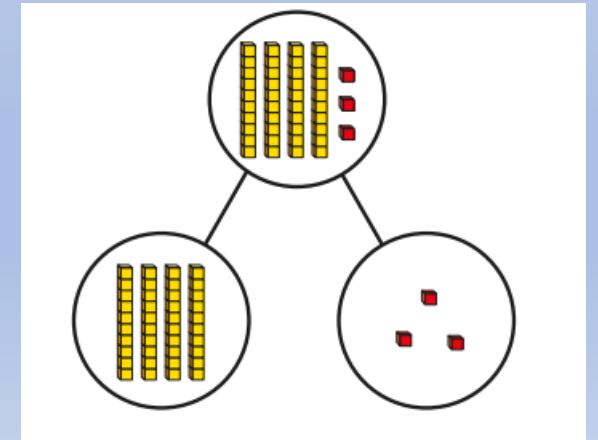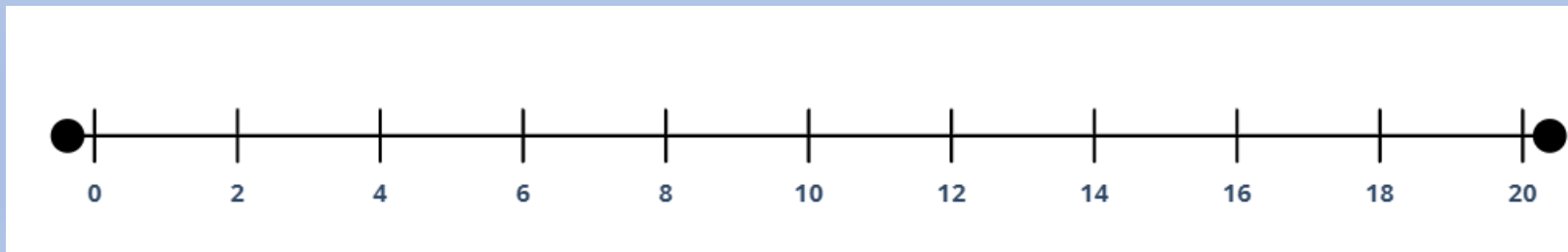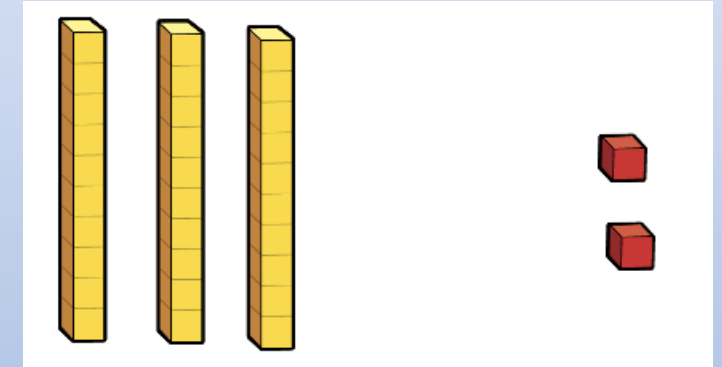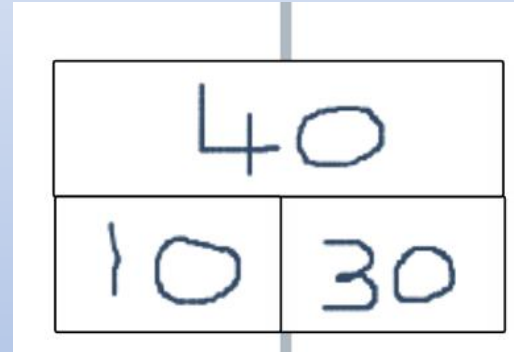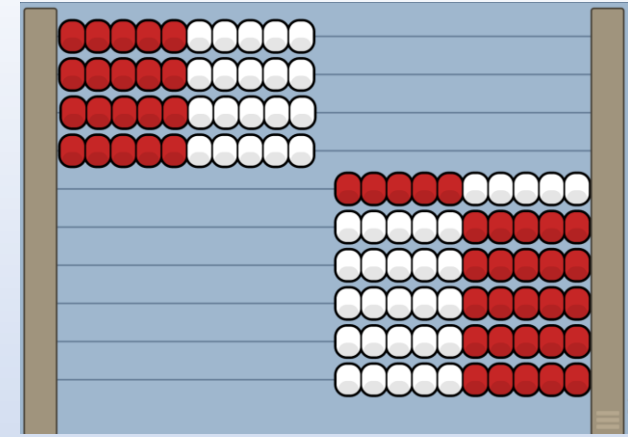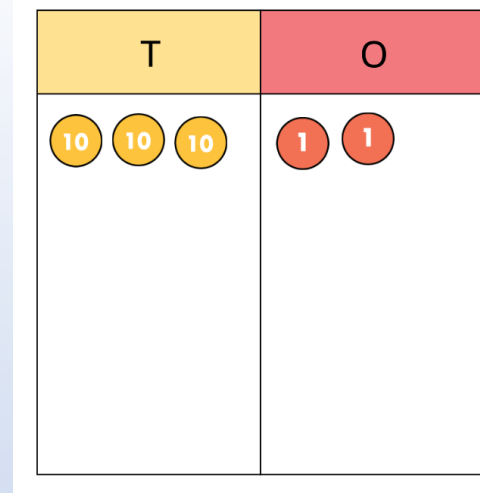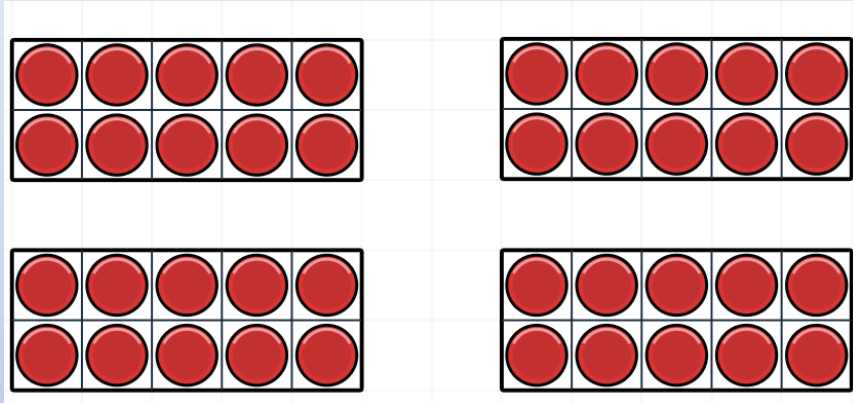
Why do we spend so long teaching the basics?

- Focusing on building the blocks of maths such as place value, addition, subtraction, multiplication and division equips children to access maths across the curriculum more quickly

- Firm foundations are crucial to building up on their previous skills and knowledge enabling them to access other areas of maths more quickly. As you can see subtraction is taught in each year group and in each year we deepen the skills.

- A significant amount of time is spent reinforcing number in order to build fluency and competency and to make sure children can confidently access the rest of the curriculum. Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing. Alongside concrete resources, children should work with pictorial representations, making links to the concrete. Visualising a problem in this way can help children to reason and to solve problems. With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

What is CPA?

Concrete – Pictorial – Abstract (CPA)

Research shows that all children, when introduced to a new concept, should have the opportunity to build competency by following the CPA approach. This features throughout our schemes of learning.

Concrete

Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing.

Pictorial

Alongside concrete resources, children should work with pictorial representations, making links to the concrete.
Visualising a problem in this way can help children to reason and to solve problems.

?

| 5 | 7 |

Abstract

With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

5 + 7

Every lesson begins with Flashback 4
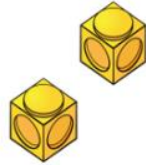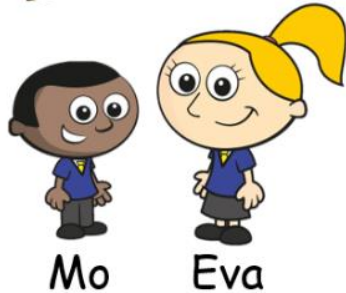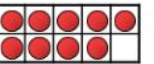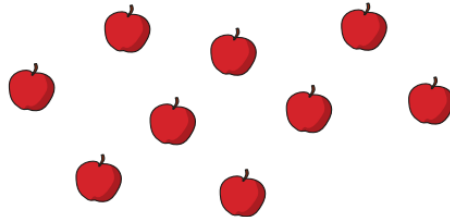
Here is what a Y1 maybe expected to complete

Count objects from a larger group

1 Circle 7 apples.

2 Circle 6 flowers.

3 Circle 5 buttons.

4 Colour 6 stars.
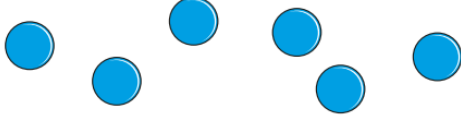
Compare answers with a partner.

5 a) Circle 4 bees.

b) Circle 5 counters.

6 Take 10 pencils or other objects.
Give 8 pencils to a partner.
How many pencils do you have left?

Children once secure with the learning will continue to deepen their understanding through problem solving and reasoning activities

Complete the number tracks.
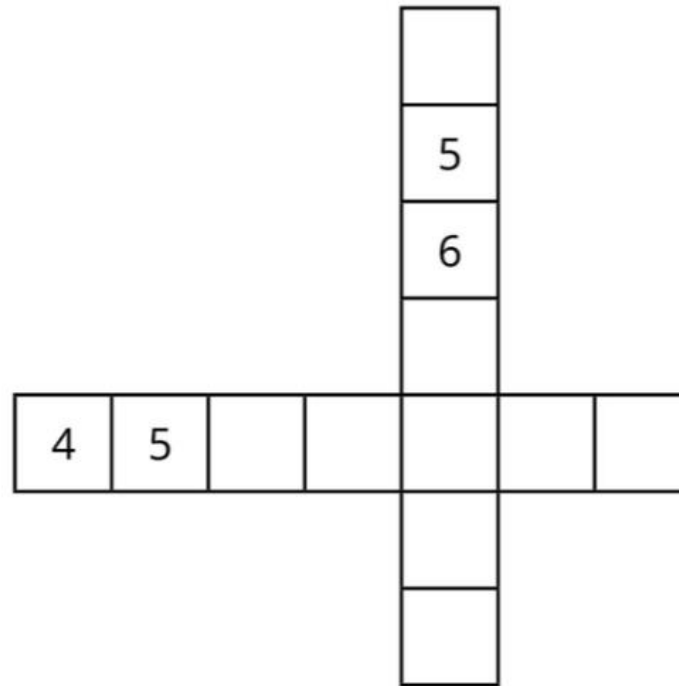
What do you notice where the tracks cross each other?
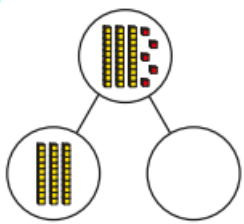
Count on from any number
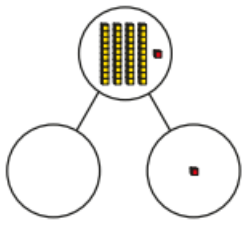
Here is what a Y2 maybe expected to complete
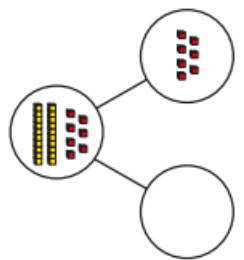
Y2 problem solving and reasoning activities
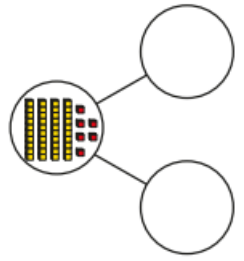
Partition numbers to 100

Exploring learning practically

Prior learning is revisited in provision challenges within classrooms
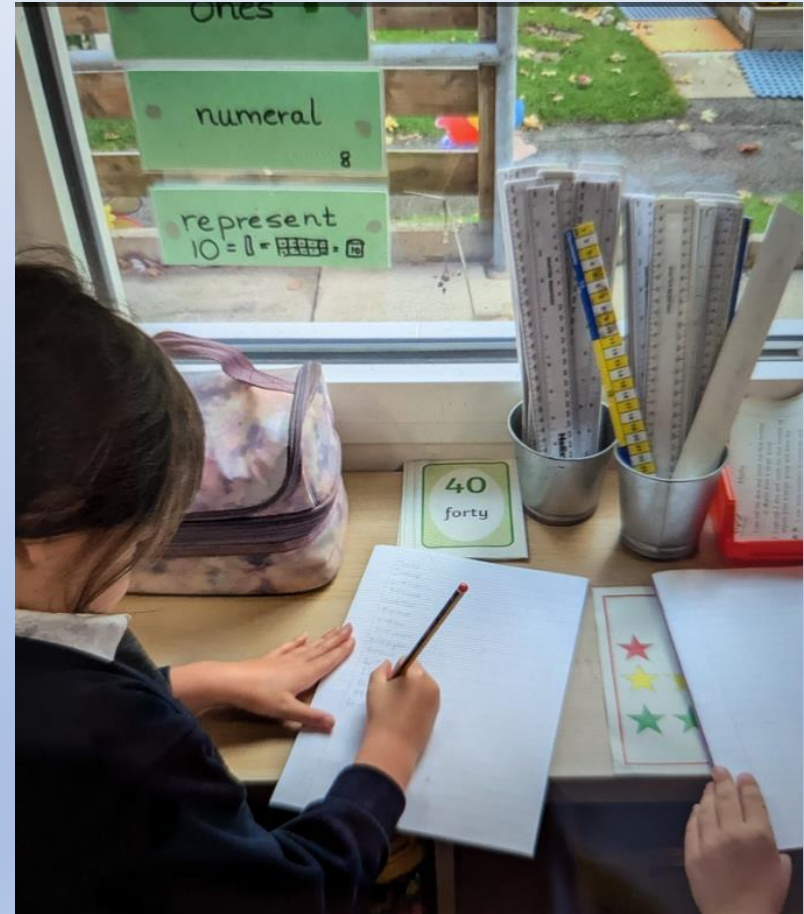

Maths challenge

⭐ (red star) I can count objects and match it to the numeral

⭐⭐ (yellow stars) I can roll the dice and count out that number of objects from a larger group.

⭐⭐⭐ (green stars) I can write numbers in words.

How can you help your child with becoming secure maths at home?

Follow the link to Maths with Michael to access the parent guidance for the different units of maths such as Place Value.

Maths with Michael

We've teamed up with TV presenter, teacher and parent Michael Underwood to bring you a mini-series called Maths with Michael.

A Guide to **Place Value**

Maths Equipment
In this guide we use ten frames, counters, straws and a mini-whiteboard.

If you don't have these you could:
- draw a ten frame on poster paper or the back of a cereal box
- make your own counters using card
- use other objects such as dried pasta or small toys
- use pencils or strips of paper instead of straws.

4 x ten frames

40 x plain counters

40 x straws

4 x base 10 tens

10 x base 10 ones

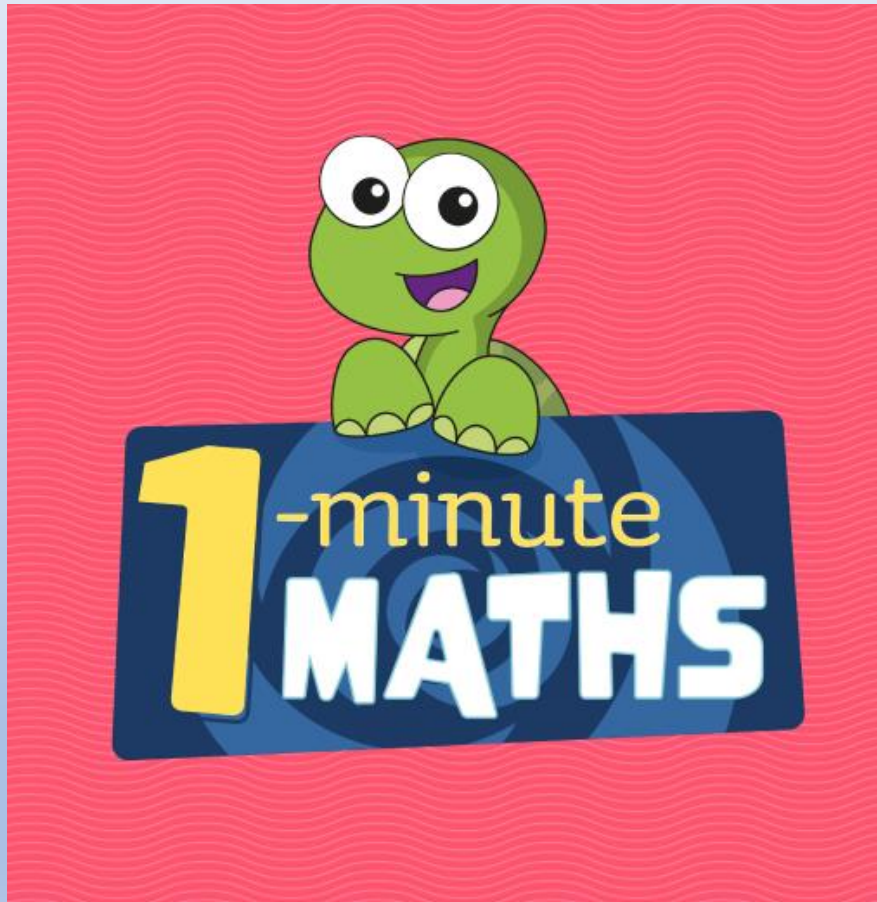4 x ten counters

10 x one counters

Maths with Michael

This is a supporting document for episode 1 in our mini-series 'Maths with Michael' which has been produced in collaboration with TV presenter, teacher and parent Michael Underwood.

White Rose Maths

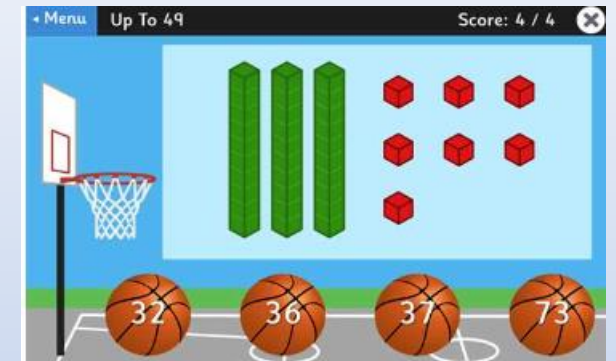# Download the 1 minute White Rose Maths app

- Model and reinforce key vocabulary which will be sent home to support each unit we have taught with homework

- Support them to complete homework using the methods and representations they have been learning and using at school

- Have fun with maths at home – Maths monkey will be sent to your child within the year

- Speak to your child's class teacher if you need any further support

- Thank you for attending this evening and supporting your child's maths journey at Holmesdale and helping them to *'Be the Best Me I can Be'*

Useful free online maths games

- https://www.topmarks.co.uk/maths-games

- https://ictgames.com/mobilePage/index.html

- KS1 Maths - BBC Bitesize