



Mathematics
Mastery



Oak Hill Academy
West London
an Aspirations Academy

Parent workshop



What is our vision?

Intent

At Oak Hill Academy, our Mathematics Mastery curriculum has been developed to ensure every child can achieve excellence in mathematics. All children can experience a sense of awe and wonder as they solve a problem for the first time, discover different solutions and make links between different key areas of mathematics. It provides all pupils with a deep understanding of the subject through a concrete, pictorial and abstract approach.



Implementation

- Ensure children are engaged and enjoying their lessons.
- Ensure staff are secure with the Mathematics Mastery six-part lesson.
- Provide staff with tools to assess effectively throughout lessons using focused and targeted AfL
- Provide staff with tools to assess effectively using PITA judgements linked to end-of-year expectations from the National Curriculum.
- Support staff in planning and resources fun, engaging and purposeful mathematics lessons.
- Encourage an open culture for self-reflection, improvement and CPD.



Impact

- Closing gaps for children to make at least expected progress from KS1 to KS2
 - Evidence of high quality provision in Maths books
 - Opportunities to link to other curriculum areas if they arise
 - Opportunities for Maths Challenge days to develop Cultural Capital.
 - Provide opportunities for linking of content domain skills through reasoning and problem solving.
 - Ensure children have the opportunity to be immersed in problems and worded problems.
 - Provide tools to children to help them to break down questions throughout mathematics to pick out key themes and concepts.
 - Provide opportunities for **transdisciplinarity** where appropriate and when it can effectively link to the half term's assignment.
 - Encourage development of **cognitive load management** – giving all learners the ability to discriminate and filter information for importance. This involves all aspects of perception, thinking, reasoning, and remembering.
- Ensure learners are working **collaboratively** to build on previous knowledge and develop **communication**.



WHOLE SCHOOL CURRICULUM

YEAR 3	LOCATION, LOCATION, LOCATION	STONES AND BONES	AWESOME ANCIENT EGYPTIANS	AVENGERS ASSEMBLE!	PLANT POWER	ALL THE WORLD'S A STAGE
	Number sense and		Multiplication and division	Time	Areas and Shape	Securing multiplication
YEAR 4	DESTINATION EUROPE	THROUGH THE WARDROBE	TIME COP	I'M A CHILD, GET ME OUT OF HERE!	WELCOME TO HONEYDUKES!	ALL THE WORLD'S A STAGE
	Reasoning with large	Multiplication and division	Securing multiplication facts	Decimals	Solving measures and	Position and direction
YEAR 5	JOURNEY TO THE AMAZON	MISSION: SPACE	SAXON SETTLERS AND VIKING INVADERS	THE CIRCLE OF LIFE	THE GREAT OAKHILL SEWING BEE	ALL THE WORLD'S A STAGE
YEAR 6	RING OF FIRE	THE OLD TOY SHOP	WW 2 BRITAIN AT WAR!	AT THE HEART OF THE JUNGLE	THANK YOU, YOUR MAJESTY	ALL THE WORLD'S A STAGE
	<p><u>Integers and decimals</u></p> <ul style="list-style-type: none"> Represent, read, write, order and compare numbers up to ten million Round numbers, make estimates and use this to solve problems in context Solve multi-step problems involving addition and subtraction <p><u>Multiplication and division</u></p> <ul style="list-style-type: none"> Identify and use properties of number, focusing on primes Multiply larger integers and decimal numbers using a range of strategies Divide integers by 1-digit and 2-digit numbers representing remainders appropriately Illustrate and explain formal multiplication and division strategies 	<p><u>Calculation problems</u></p> <ul style="list-style-type: none"> Understand the use of brackets Use knowledge of the order of operations to carry out calculations Generate and describe linear number sequences Express missing number problems algebraically Solve equations with unknown values <p><u>Fractions</u></p> <ul style="list-style-type: none"> Deepen understanding of equivalence Order, simplify and compare fractions, including those greater than one Recall equivalence between common fractions and decimals Find decimal quotients using short division Add and subtract fractions <p><u>Missing angles and length</u></p> <ul style="list-style-type: none"> Compare and classify a range of geometric shapes Use angle facts to find unknown angles 	<p><u>Coordinates and shapes</u></p> <ul style="list-style-type: none"> Draw a range of geometric shapes using given dimensions and angles Describe, draw, translate and reflect shapes on a co-ordinate plane Recognise and construct 3-D shapes Name and illustrate parts of a circle <p><u>Fractions</u></p> <ul style="list-style-type: none"> Represent multiplication involving fractions Multiply two proper fractions Divide a fraction by an integer <p><u>Decimals and measure</u></p> <ul style="list-style-type: none"> Use, read, write and convert between standard units of measures; length, mass, time, money and volume as well as imperial units Calculate the area of parallelograms and triangles Calculate, estimate and compare the volume of cuboids 	<p><u>Percentage and statistics</u></p> <ul style="list-style-type: none"> Calculate and compare percentages of amounts Connect percentages with fractions Explore the equivalence of fractions, decimals and percentages Calculate the mean Construct and interpret lines graphs and pie charts Compare pie charts <p><u>Proportion problems</u></p> <ul style="list-style-type: none"> Use fractions to express proportion Identify ratio as a relationship between quantities and as a scale factor Unequal sharing involving ratio 	<p>REVISION OF KS2 CURRICULUM</p>	<p>REVISION OF KS2 CURRICULUM</p> <p>Problem Solving and Investigative skills</p>

What is Mathematics Mastery?



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Success for **all** pupils

Based on research and evidence

Problem solving is at the heart

Focus is on depth, not acceleration

Aligned to National Curriculum

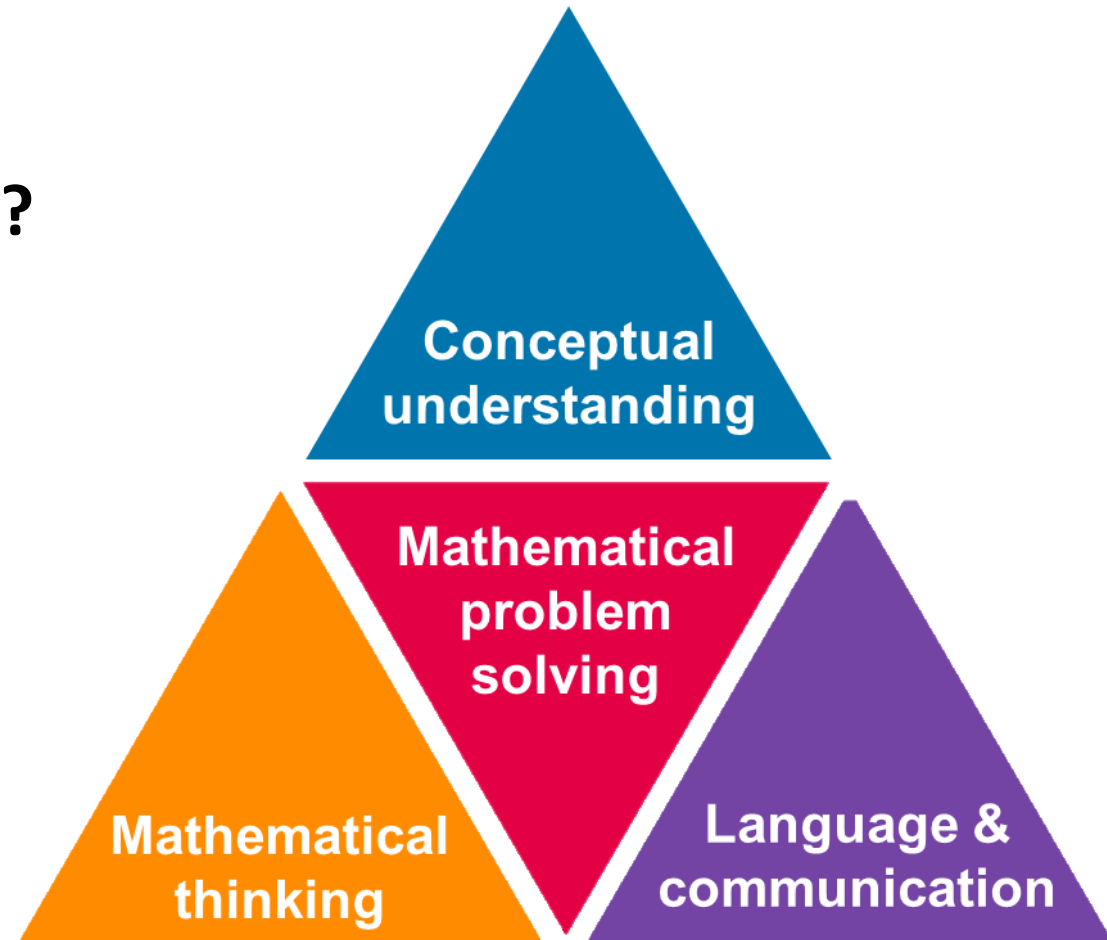
Focus on talk and reasoning about mathematics

Depth not acceleration



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What do we mean by depth?
How do we deepen understanding?

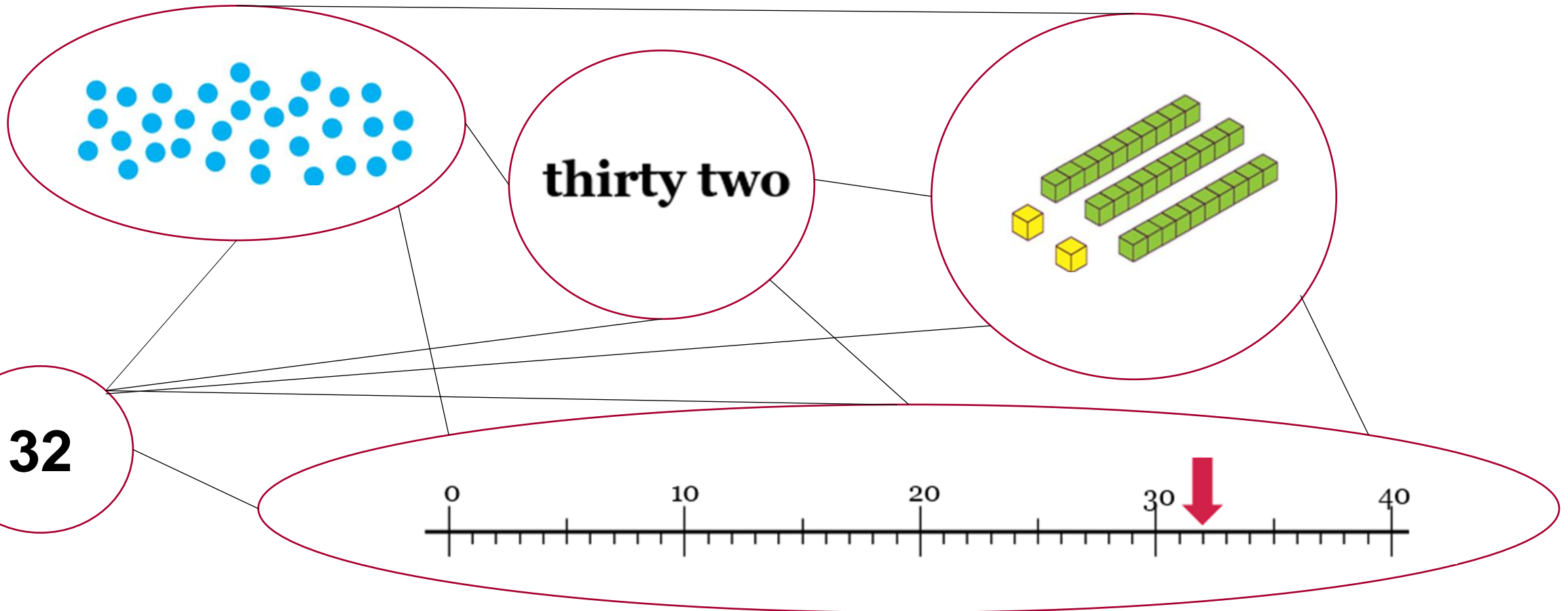


Conceptual understanding



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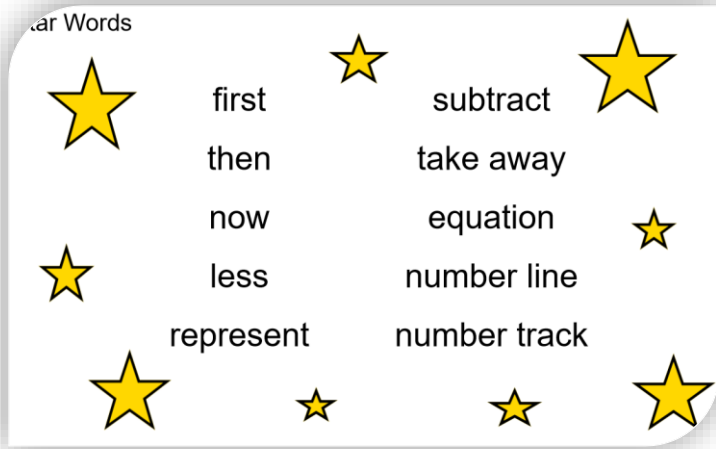
- Representing a concept in different ways
- Making connections between each way to deepen their understanding.



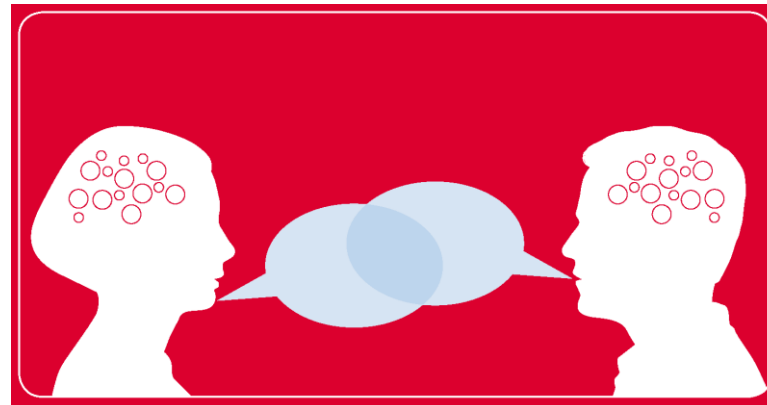
Language and communication



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Can you say that in a full sentence, please?



Mathematical thinking



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**What do you
think would
happen if...?**

**Do you think ...
would always
happen?**

**What's the
same? What's
different?**

**Can you see a
pattern?
What would
come next?**

**How do you
know that?**

**What else
could go in
this set? What
couldn't?**

Creating a positive attitude to maths



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- ✓ Talk to your children about everyday maths
- ✓ Play maths games with them
- ✓ Value mistakes as learning opportunities
- ✓ Recognise that there is more than one way to work things out
- ✓ Praise children for effort over outcome
- ✓ Avoid saying things like “I’m useless at maths”
- ✓ Playing Sumdog regularly

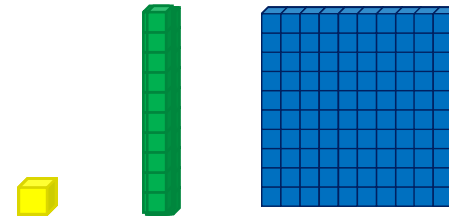
Representing 3-digit numbers



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245

hundreds	tens	ones



Representing 3-digit numbers



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Talk Task

Choose one of the three digit numbers below. Represent each digit of your chosen number with Dienes and say the value of each digit.

367	672
302	862
179	750

I have chosen _____.

Partner A



There is a _____ in the
hundreds column. It
represents ____ hundreds. It
has a value of _____.

Partner B



Hundreds tens ones digit numeral place value

Ways to help at home...



<https://ttrockstars.com/parents/>

Ways to help at home...

Log in and explore

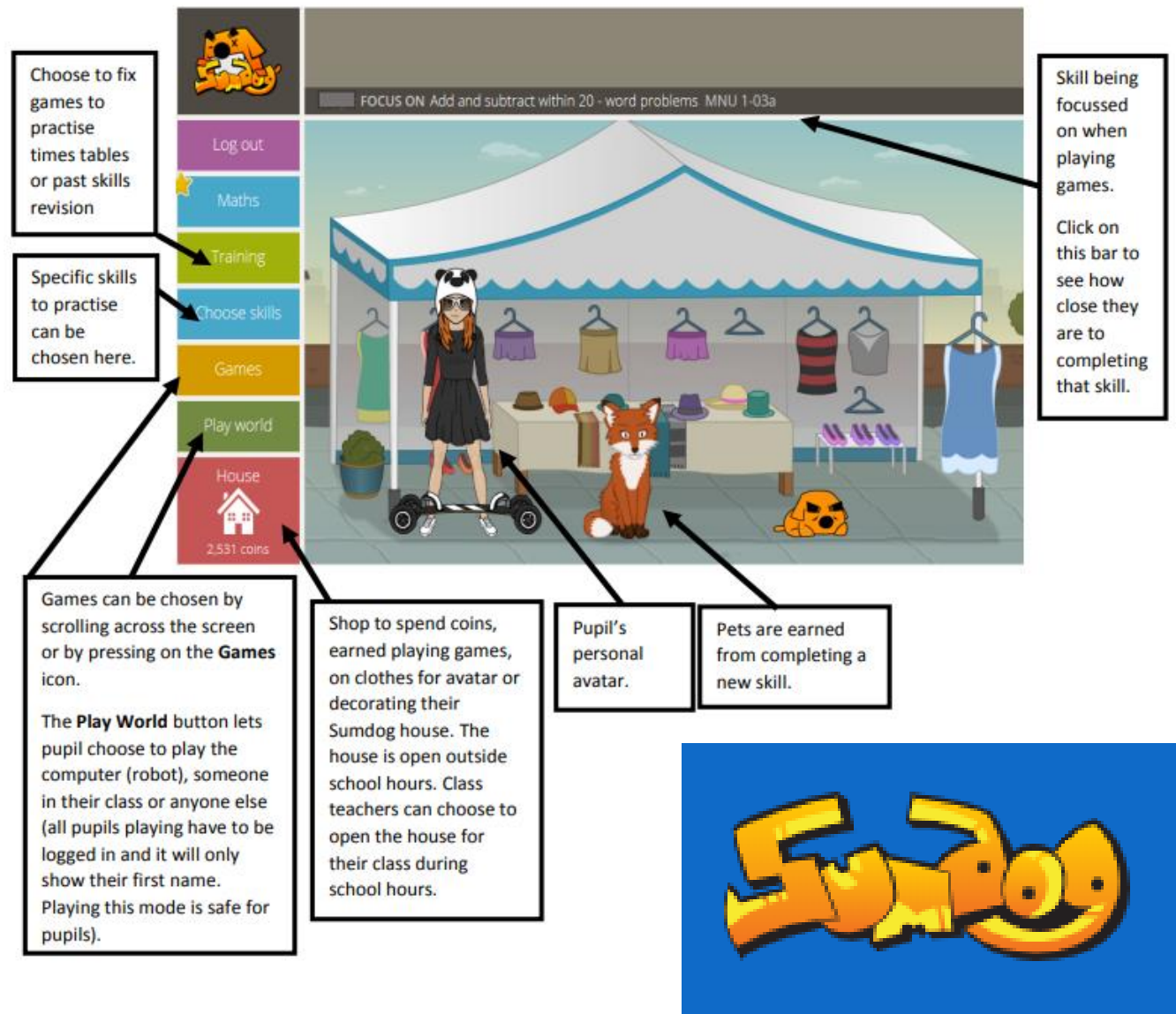
Each child has been given a unique username and password. This allows them to access their personalised home screen, which includes information about their animal level, earned coins and the Sumdog house. This is where they can scroll through and choose games to play or select which skill to work on.



How it works

Sumdog works to ask relevant questions at an appropriate level to each pupil. They will be challenged as well and can increase their level. Incentives are in place for completing skills and achieving targets. Incentives include Sumdog coins, pets and items for the Sumdog house.

If your child is just starting with Sumdog, the first few questions will be part of a diagnostic test. Some questions may be more challenging than others. This allows Sumdog to get a good understanding of your pupil's level so further questions can be tailored to suit them appropriately.





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Thank you

