Toolkit 4 Maths

THE TOOLKIT4MATHS™

www.toolkit4maths.com

CPD College
INSPIRING TEACHERS EVERYWHERE

Powerful tools to support the teaching of maths

INTRODUCTION

The Toolkit4maths ™ is an online portal containing a suite of powerful tools to help teachers build conceptual understanding in Mathematics for all students. In order to develop every student's mathematical proficiency, teachers must systematically integrate the use of concrete and virtual manipulatives into classroom instruction at all class levels. Virtual manipulatives can be used as a part of the Concrete-Representational-Abstract (C-R-A) learning cycle, which is a key and successful part of the mathematics approach in Singapore. The Toolkit4maths™ contains important mathematics tools for teacher modelling and demonstration of concepts, supporting more effective teaching and pupil learning in mathematics, right across the primary school.

THE TOOLKIT4MATHS™ - ESSENTIAL FEATURES:

- Dynamic mathematics tools to enable better teaching and learning
- Target Boards covering a range of topics
- Facility to easily create your own fully interactive Target Boards
- Home access for all to assist lesson preparation
- Information guides included for all tools
- Suggested activities and applications for each tool
- Cloud delivery – no installation required
- Full technical support
- Immediate access
- Access anywhere, anytime

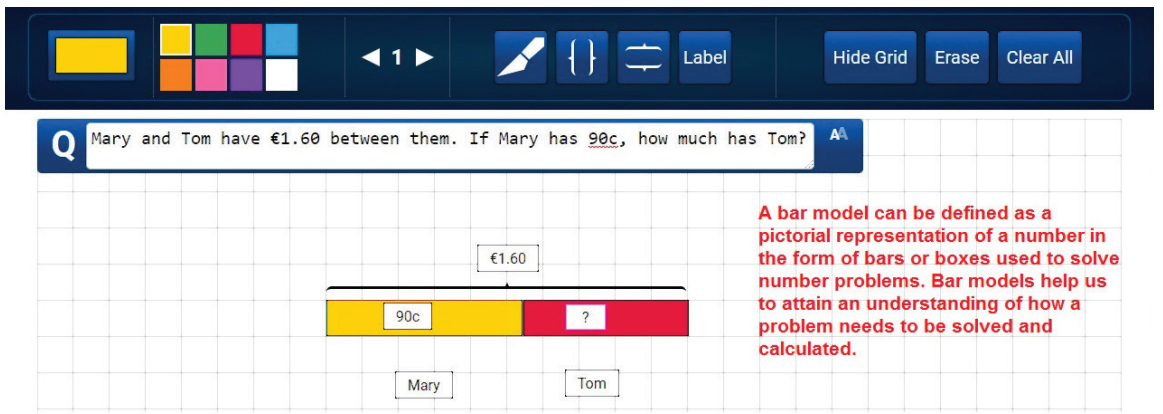
WHY USE THE TOOLKIT4MATHS™?

1. The Toolkit4maths™ strengthens the teaching and learning of mathematics through facilitating meaningful mathematical discourse between student/student & student/teacher, helping build a shared understanding of mathematical ideas.
2. The Toolkit4maths™ empowers the teacher to render and work through important concepts using the tools & manipulatives on the interactive whiteboard at the front of the classroom.
3. Utilising the Toolkit4maths™ should be a key strategy and part of the Whole-School Maths Plan in every school.
4. The Toolkit4maths™ contributes immeasurably to the effective teaching and learning of mathematics across the classes; driving thinking deeper, achievement higher and progression further.
5. Difficult ideas are made more understandable when the Toolkit4maths™ makes them more visible e.g. regrouping using Dienes Blocks. By using the Toolkit4maths™ to show difficult concepts in a visual way, teachers can improve the learning experience for all.
6. The Toolkit4maths™ help students to learn better when used in well-designed teaching sequences, tasks and activities.
7. The Toolkit4maths™ holds pupil attention, prompts thinking and stimulates learning.
8. The Toolkit4maths™ can allow teachers present information in multiple new ways which help students to understand, assimilate and use it more readily.
9. The Toolkit4maths™ enables teachers to better teach, illustrate and interrogate a range of concepts across the many areas of mathematics.
10. Interactive mathematics manipulatives and Target Boards to incorporate into instructional sequences to effectively illustrate mathematics concepts, illuminate thinking and deepen children's conceptual understanding.
11. The Toolkit4maths™ is a teacher driven toolkit, used on the interactive whiteboard, while at the same time the students are using the equivalent physical manipulatives at their desks.
12. TheToolkit4maths™ graphing tool removes the chore of processing data manually and frees students to concentrate on its interpretation and use.
13. Providing teachers across the whole-school with easy/always on access to the Toolkit4maths™ encourages and improves the use of IT in the curriculum.
14. The Toolkit4maths™ will assist teachers to take a fresh look at how they teach and the ways in which students learn.
15. The INFO page for each tool in the Toolkit4maths™ provides a detailed explanation on how to operate the tool and ideas on how best to apply it in the classroom, thus building teacher competence in operating it and confidence in utilising it within curriculum.
16. The Toolkit4maths™ is a dynamic, cloud-based resource which will grow and expand year on year.

The tools include the following:

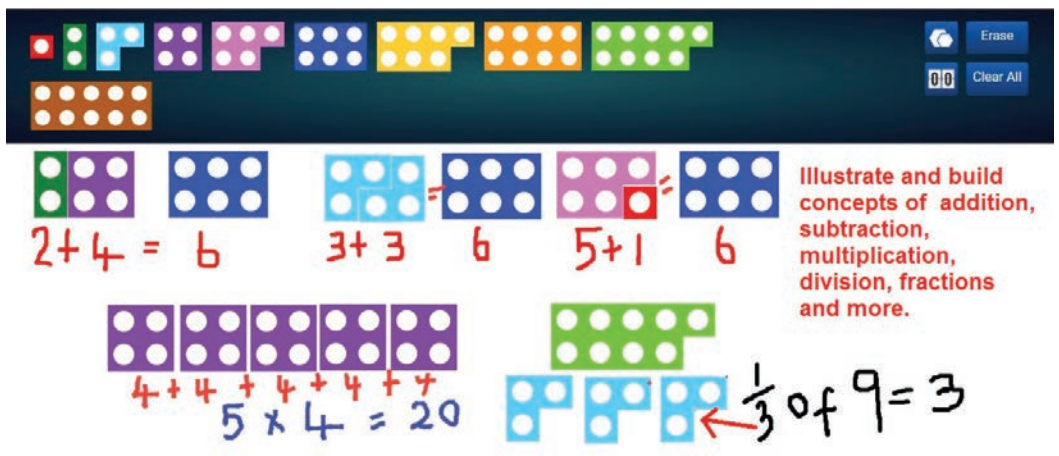
BAR MODEL MAKER

Use bar models to help pupils gain a better understanding of how a problem needs to be solved.



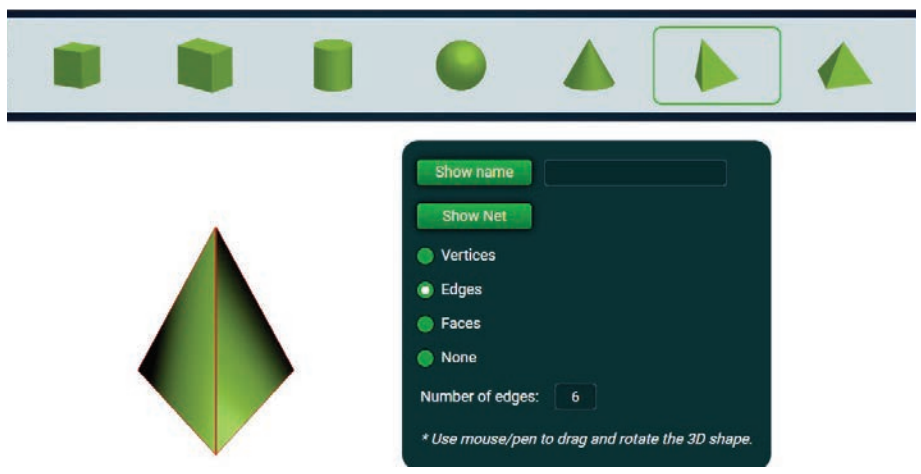
NUMBER FRAMES

Model the 4 rules of number, sequences, properties & concepts with these structured manipulatives.



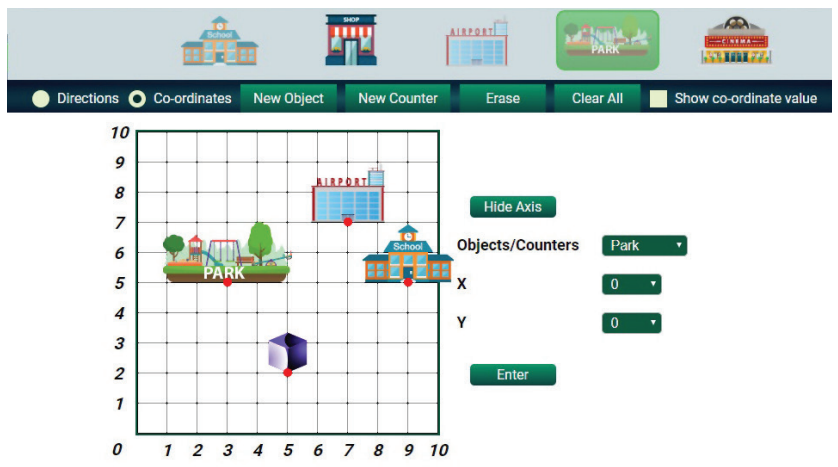
GEOMETRY

Explore the properties of 2D and 3D Shapes, to include vertices, sides, faces and nets.



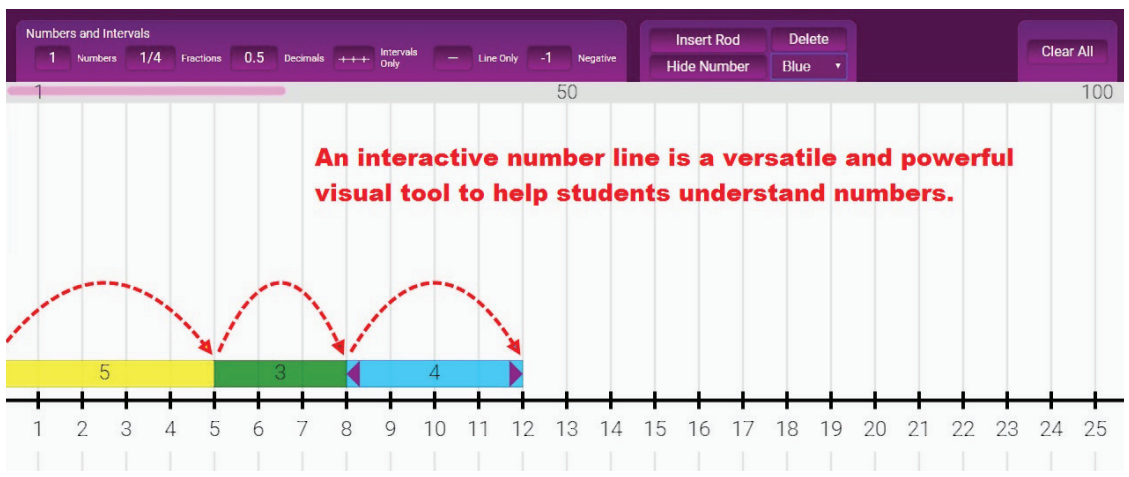
COORDINATES & DIRECTIONS

Use objects and places on a 10 x 10 grid to teach & test directions UDLR and XY coordinates.



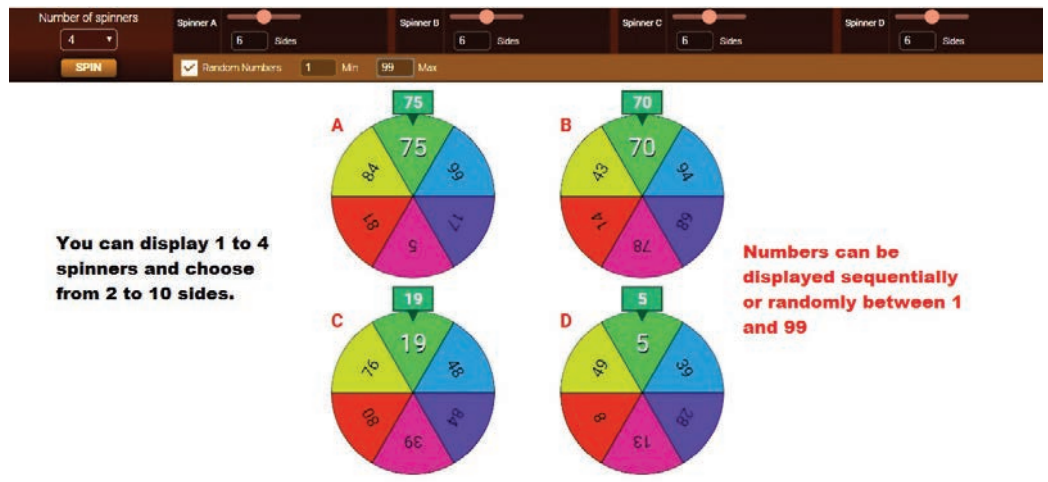
INTERACTIVE NUMBER LINE

Everything required of a flexible, feature rich number line to explore numbers from 1 to 10,000.



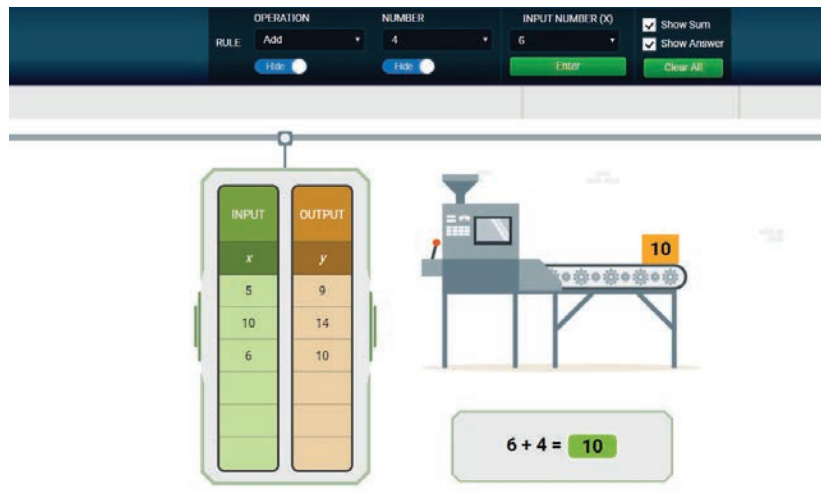
SPINNERS

Spin from 1 to 4 spinners at any time, while selecting 2 to 10 sides and regular or random numbers.



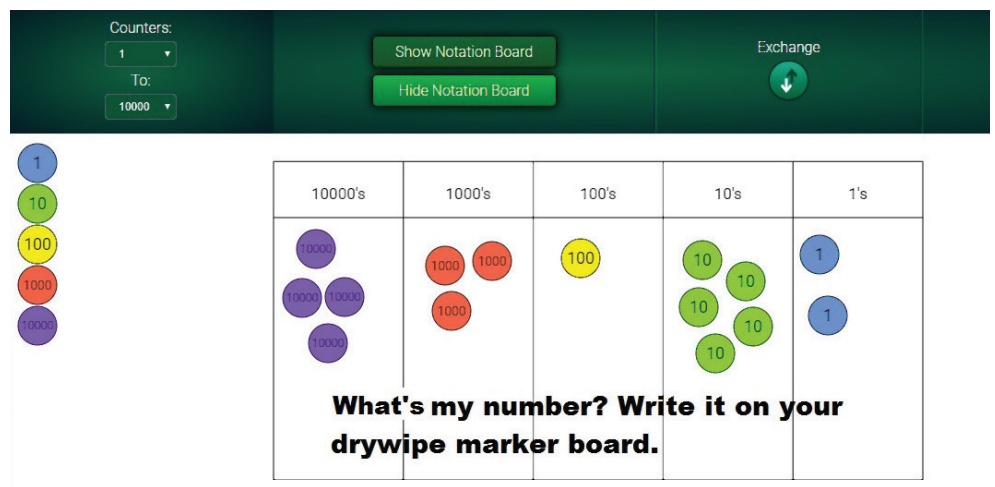
FUNCTION MACHINE

Use the function machine to get children analysing & thinking about rules and operations in maths.



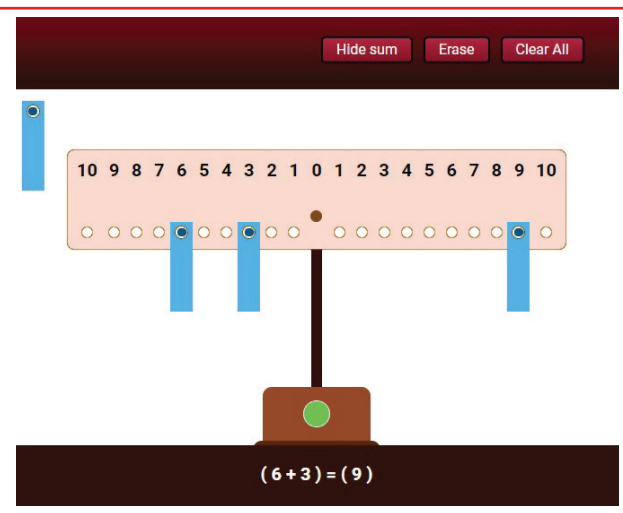
PLACE VALUE COUNTER

The 8 coloured counters help explore place value from .001 to 10,000, illustrate concepts & problems.



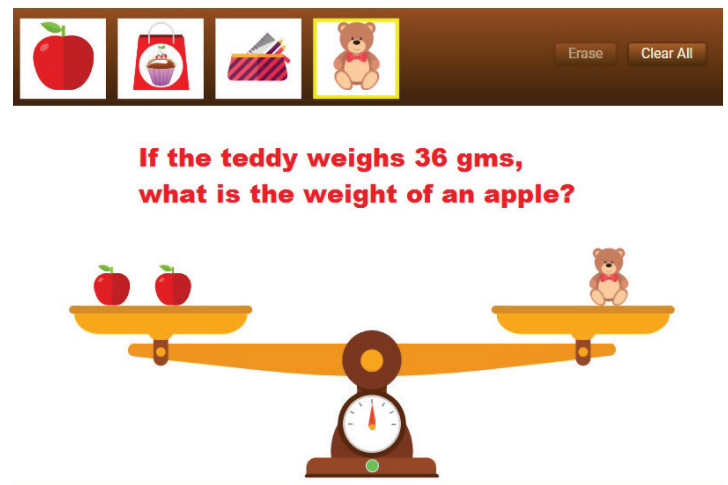
MATHS NUMBER BALANCE

Use weights to visually demonstrate number relationships, operations and comparisons.



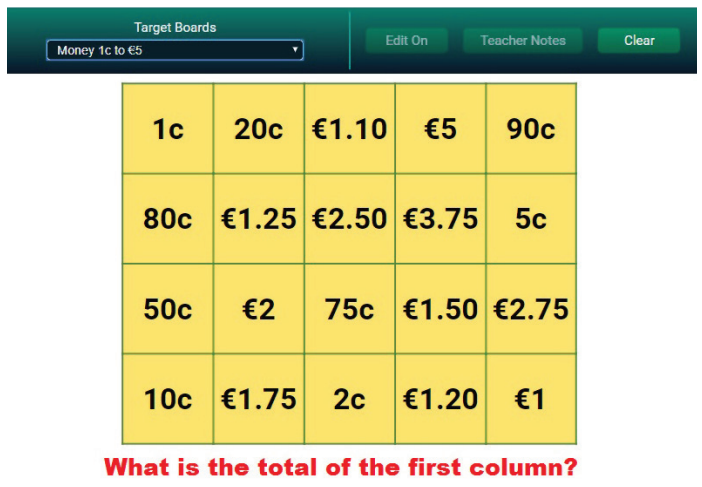
SIMPLE BALANCE

Make weight comparisons between products e.g. The teddy is the same weight as two apples.



TARGET BOARDS

25 ready-to-go interactive target boards across all areas of maths and the option to create your own.

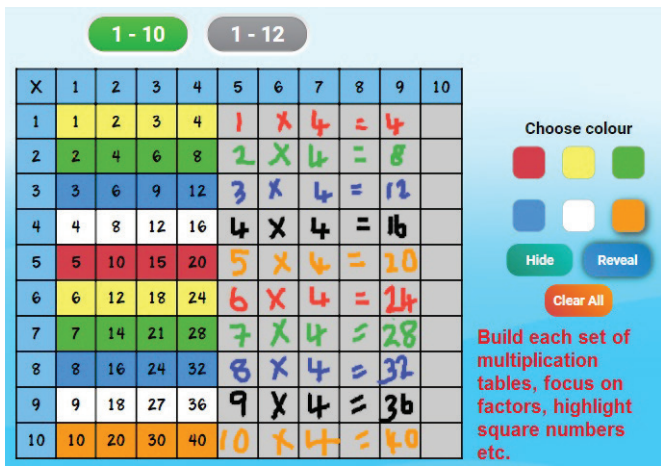


METRIC BALANCE

20 items of fruit and vegetables to weigh, compare and problem solve using grams and kilograms.

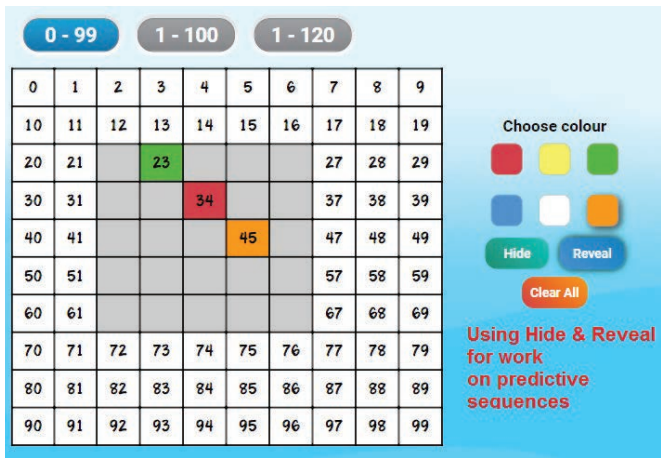
INTERACTIVE MULTIPLICATION CHART

Use six pen colours to build each set of tables from 1 to 12 times and to highlight many patterns.



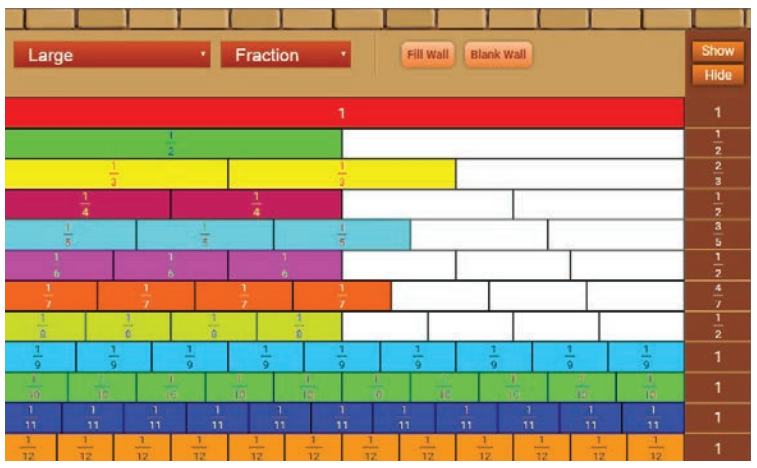
INTERACTIVE HUNDREDS CHART

Use the six pen colours to build and discuss patters on all three charts i.e. 0-99, 1-100 and 1-120.



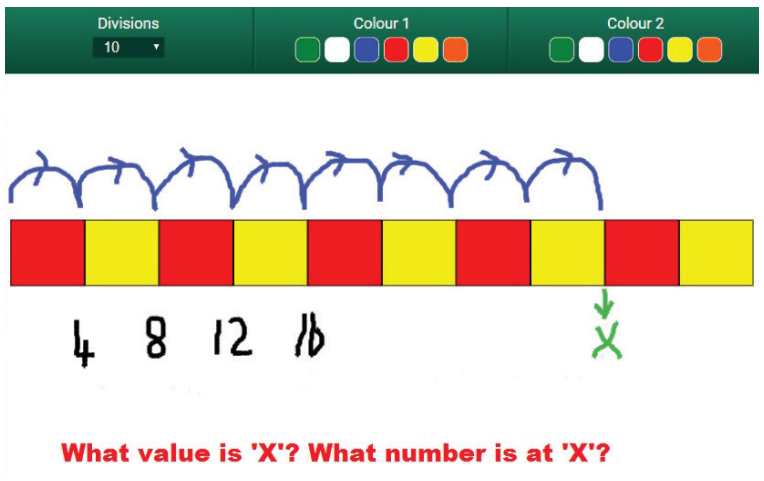
FRACTION WALL

Visually represent & help students learn, compare and identify fractions, decimals and percentages.



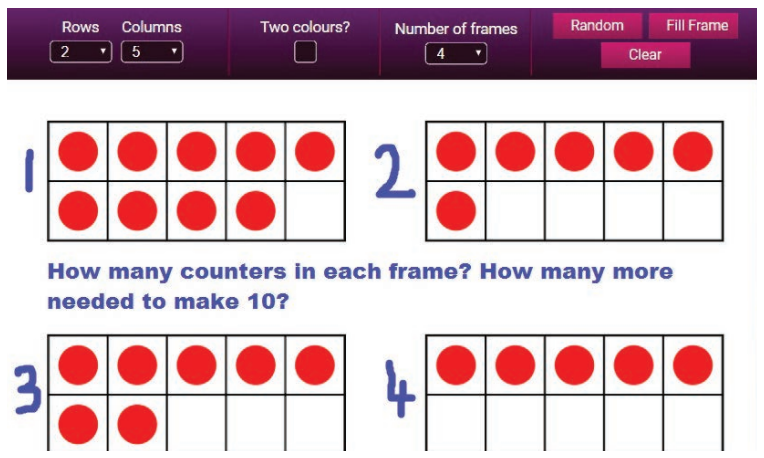
COUNTING STICK

A most versatile teaching tool to teach a range of maths skills and help with number sequences.



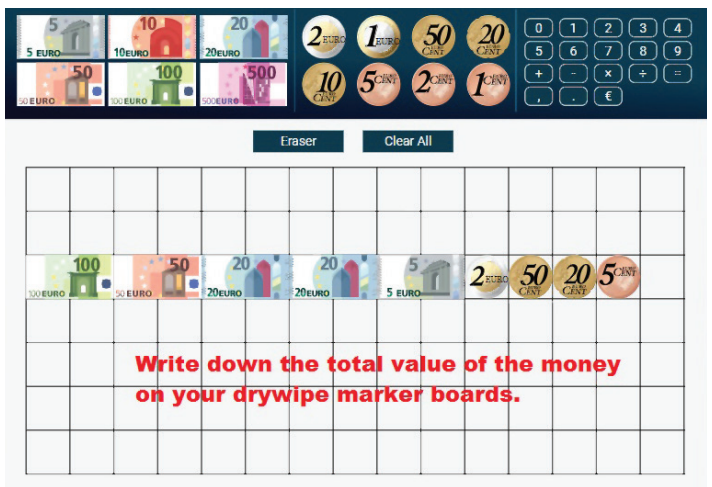
TEN FRAMES

Number Frames help students count, represent, compare and structure numbers to 5, 10, 20 and 100.



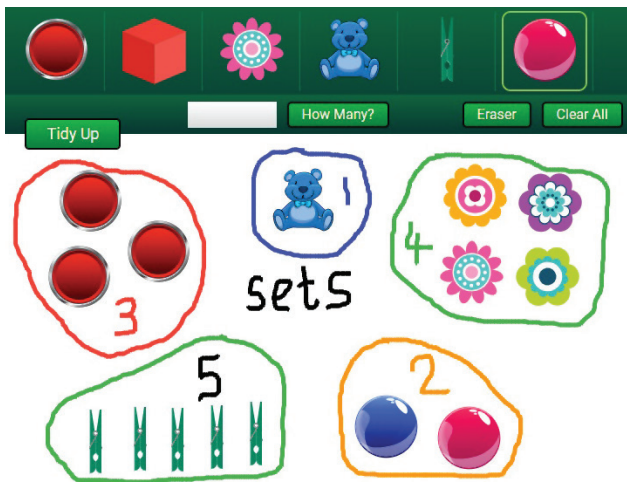
MONEY (EUROS)

Explore money using 1c, 2c, 5c, 10c, 50c, €1, €2, €5, €10, €20, €50, €100 and €500 notes and coins



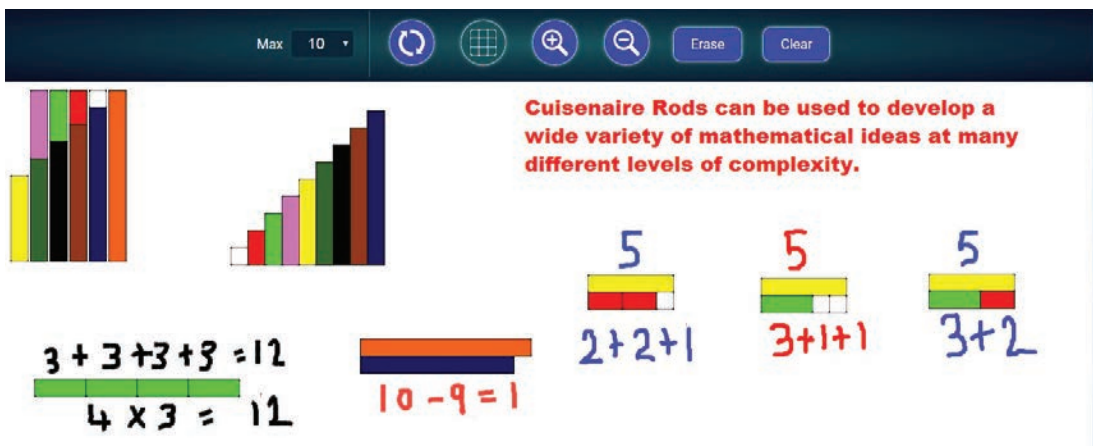
COUNTERS

24 maths counters to move around to help children visualise & work out simple maths problems.



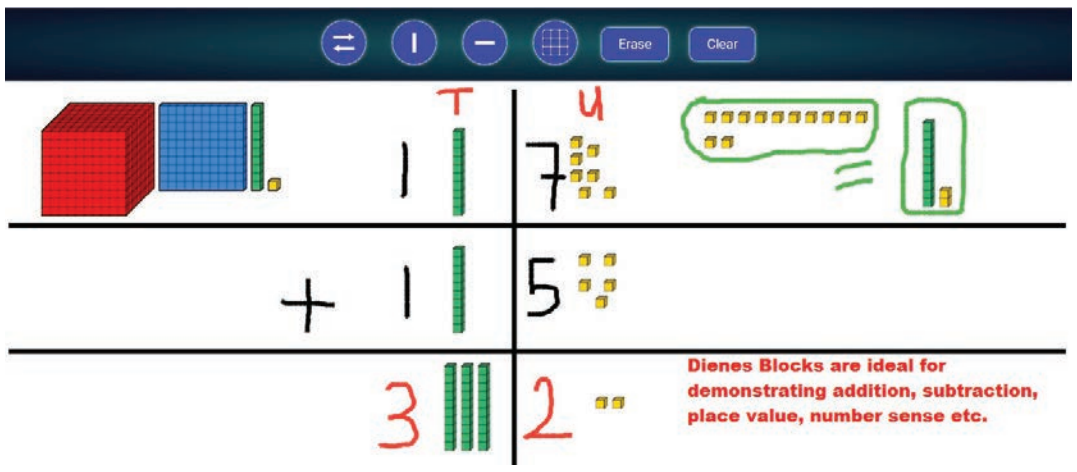
CUISENAIRE RODS

Rods provide an interactive way to explore number and help students learn mathematical concepts.



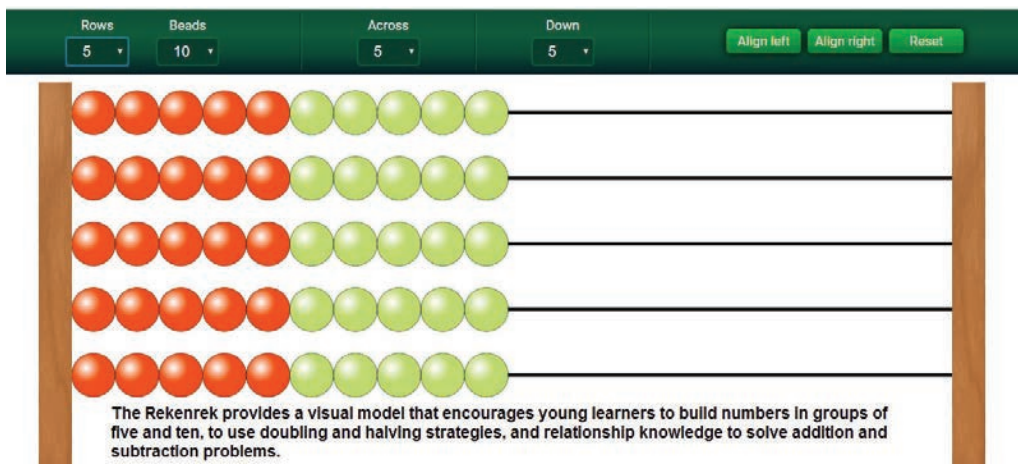
DIENES BLOCKS

The Dienes Blocks will bring to life the relationships between units, tens, hundreds and thousands



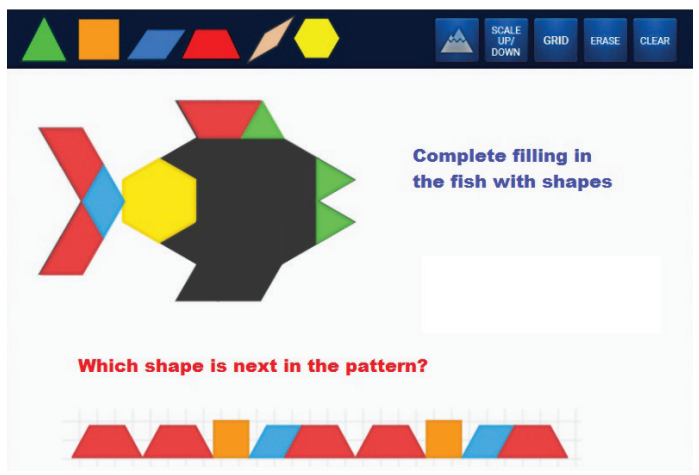
REKENREK

The rekenrek is a tool that helps children to think mathematically and develop real number sense.



PATTERN BLOCKS

Create elaborate geometric patterns & designs and help young students begin to think about area.

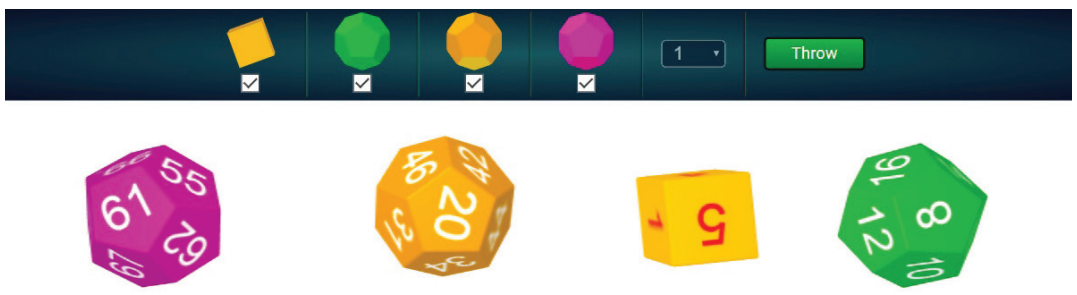


CLOCK

Show time, add on time, subtract time, 12 hour & 24 hour, a.m. & p.m. – all you need to teach time.

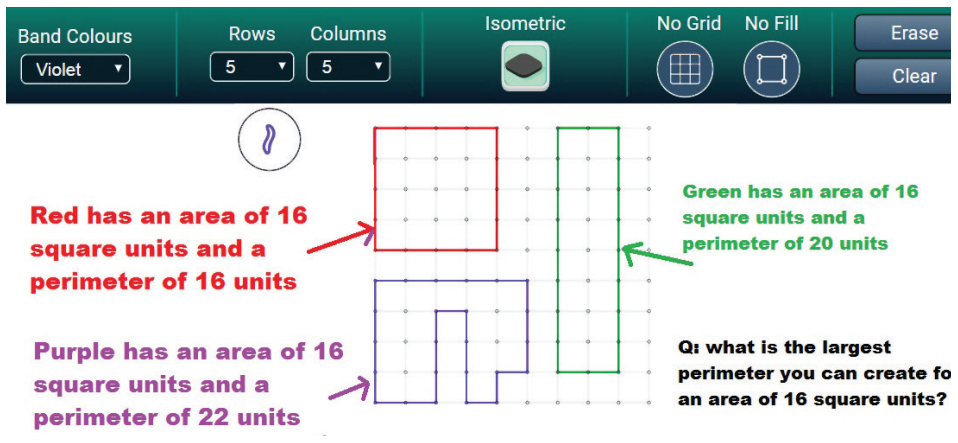
DICE

Comprising from 6 to 12 sides, dice are great for generating random numbers from 1 to 100.



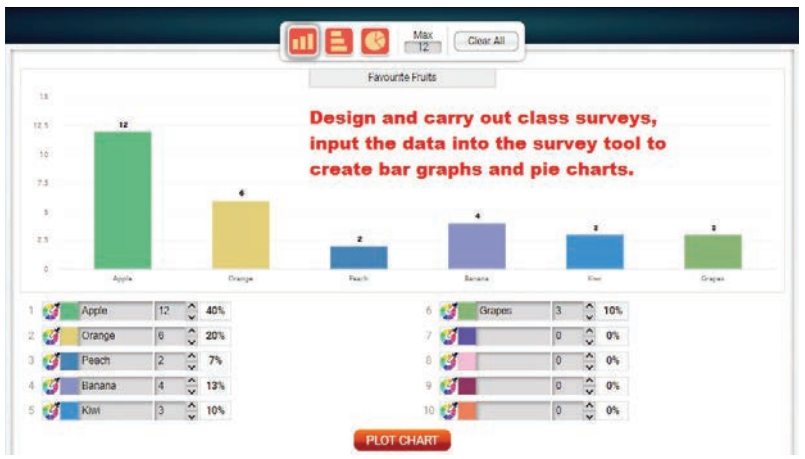
GEOBOARD

Geoboards are used to explore perimeter, area and the characteristics of triangles and polygons.



GRAPHS

Use this tool to easily turn your collected class survey data into bar charts and pie charts.



Additional tools include:

- A protractor
- A calculator
- Tangrams
- Travel timetables
- An addition square
- Classroom timers

Make the Toolkit4maths™ a key pillar of your approach to mathematics teaching and learning

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