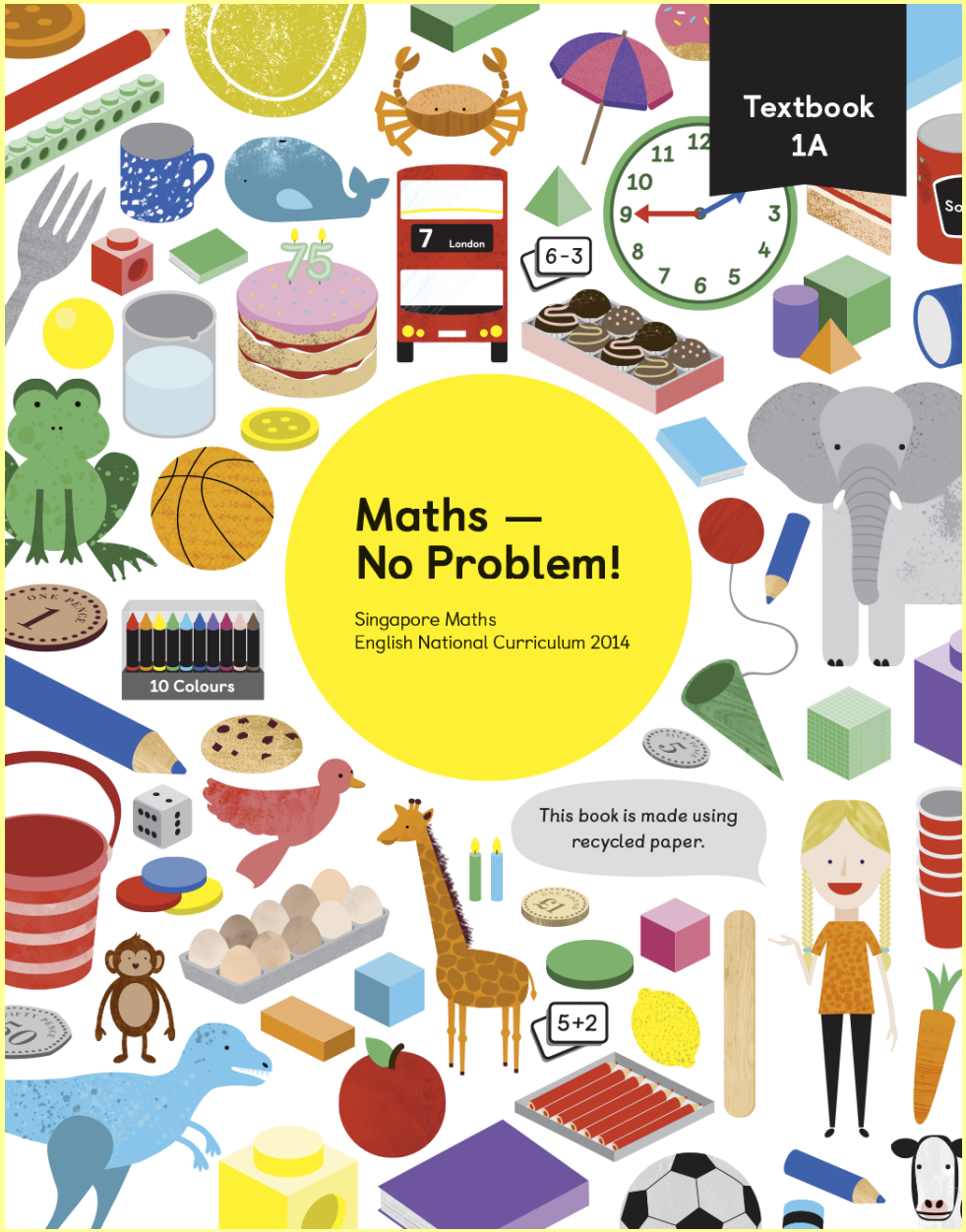


Singapore Maths

Maths No Problem!

Points we will cover this morning.

- Why we wanted a change
- Philosophy behind the scheme
- Day-to-day running
- Impact
- Resources
- Q & A

Why we are changing…

- New Curriculum and Ofsted framework were introduced, and we wanted to provide the children with a 'Mastery' curriculum.
- The new curriculum places a high importance on mental maths skills and fluency of these.
- Next step to further maths teaching
- 'Mastery' means doing fewer things in greater depth to ensure skills are learned. The new National Curriculum is a Mastery curriculum.

Maths-No Problem!

- In line with the National Curriculum 2014
- Recommended by NCETM. The National Centre for Excellent Teaching in Maths and the national and local (West London maths hub)
- Government (DfE) preferred way of teaching maths. £40 million being made available for schools to buy resources. *(We don't qualify for this funding).*

Maths-No Problem!

- Emphasis is on problem solving and comprehension, allowing children to relate what they learn and to connect knowledge.
- Careful scaffolding of core skills:
  - visualisation
  - mental strategies
  - pattern recognition, to make links between ideas.
- Emphasis is on the foundations for learning and not on the content itself so children learn to think mathematically as opposed to merely reciting formulas or procedures.

MATHS NO PROBLEM!

Maths-No Problem!

- The focus of the scheme is on teaching to mastery (complete understanding), by allowing enough time on a topic for a child to comprehend it thoroughly before moving on.
- The programme emphasises problem-solving and pupils using their core skills to develop a relational understanding of mathematical concepts. It uses 3 key stages.

The CPA approach

Concrete representation

- The active stage - a child is first introduced to an idea or a skill by acting it out with real objects. 'Hands on'

Pictorial representation

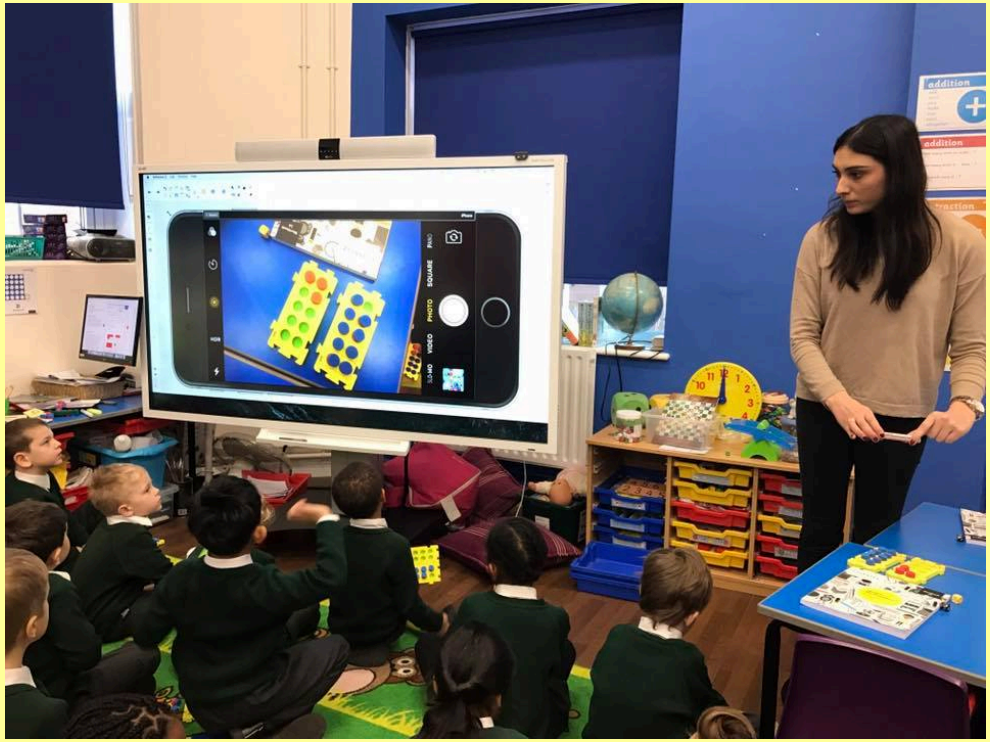
- The iconic stage - a child can now relate the 'hands on' to representations, such as a diagram, picture of the problem or a bar model.

Abstract representation

- The symbolic stage - a child is now capable of representing problems by using mathematical notation. E.g 6+4=10

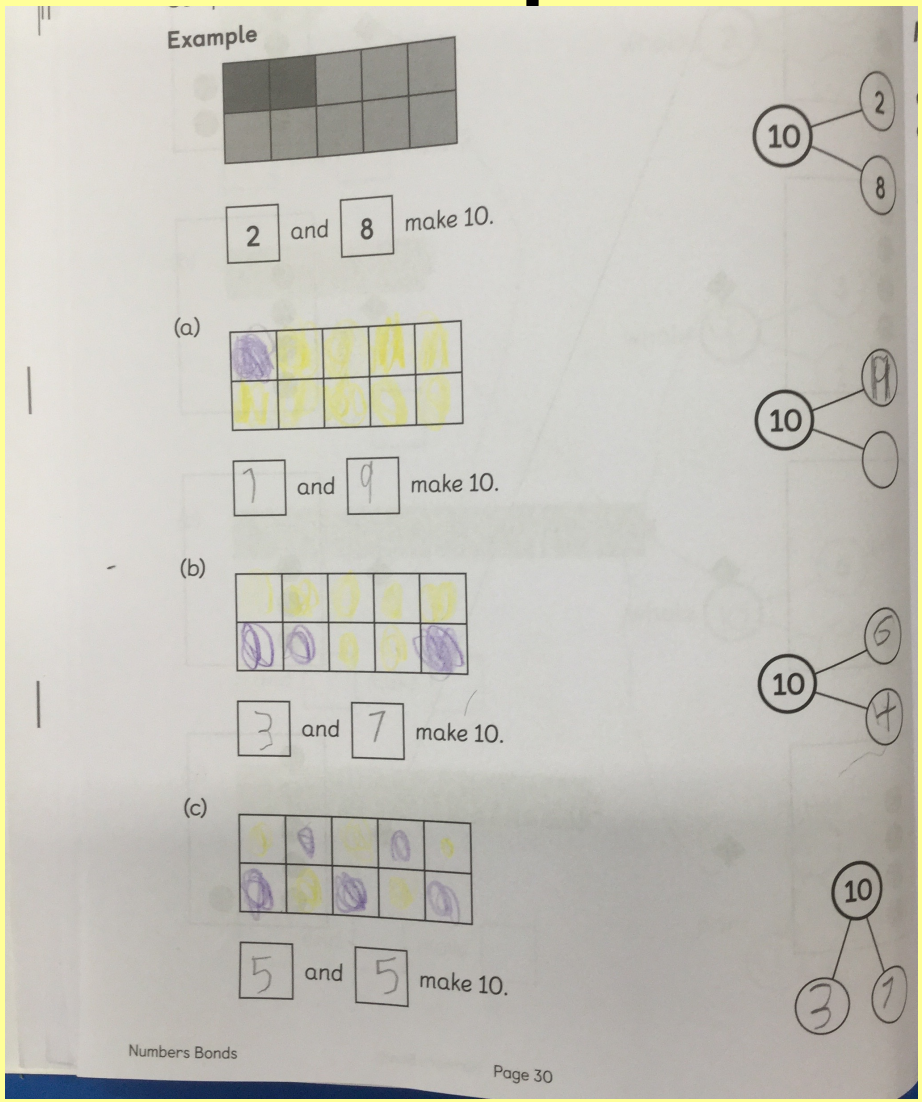
The CPA approach

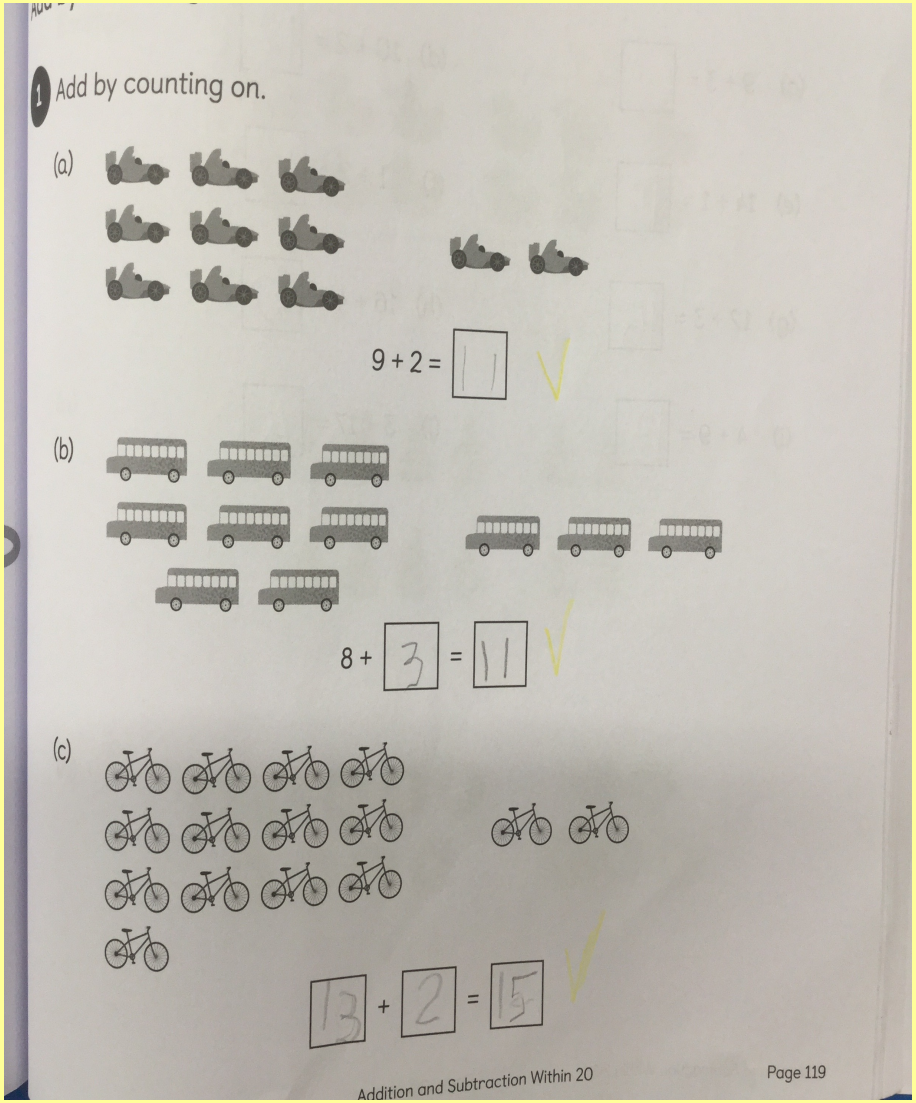
Concrete representation



The CPA approach

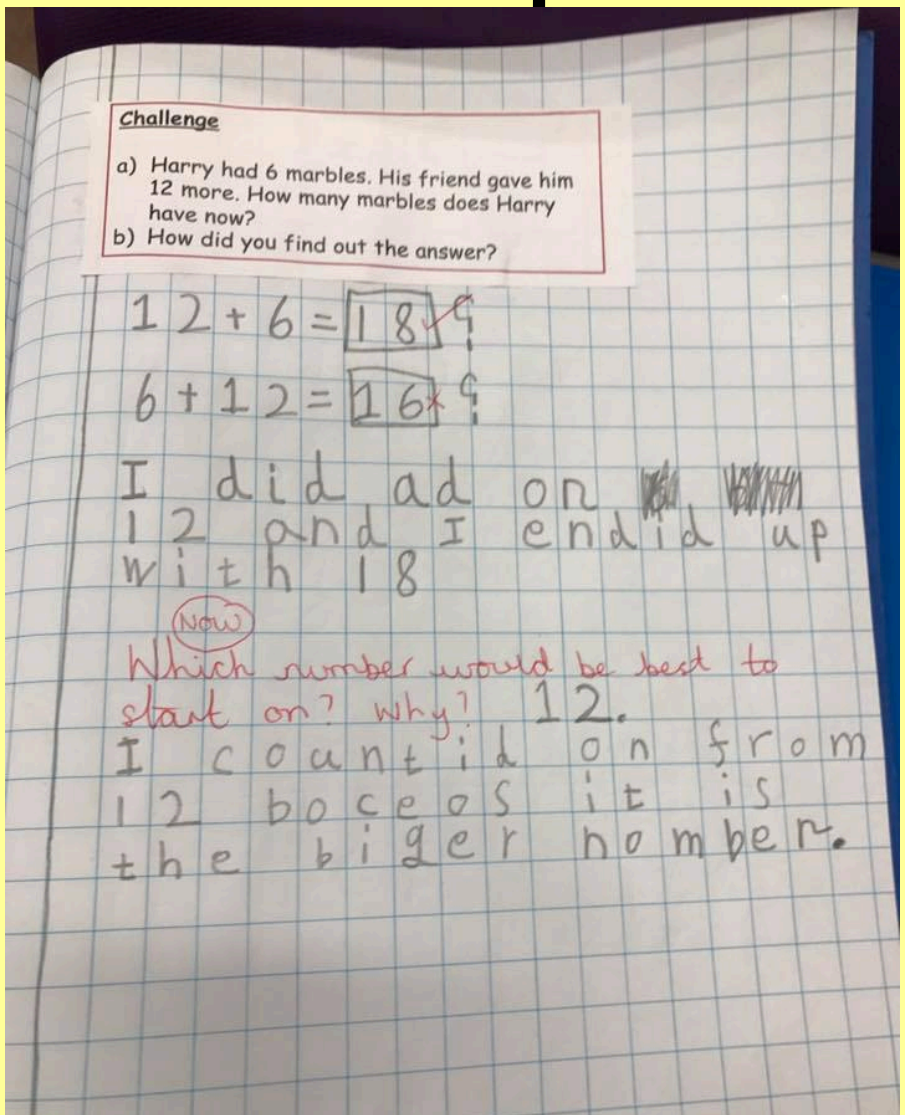
Pictorial representation





The CPA approach

Abstract representation



Challenge

a) Harry had 6 marbles. His friend gave him 12 more. How many marbles does Harry have now?
b) How did you find out the answer?

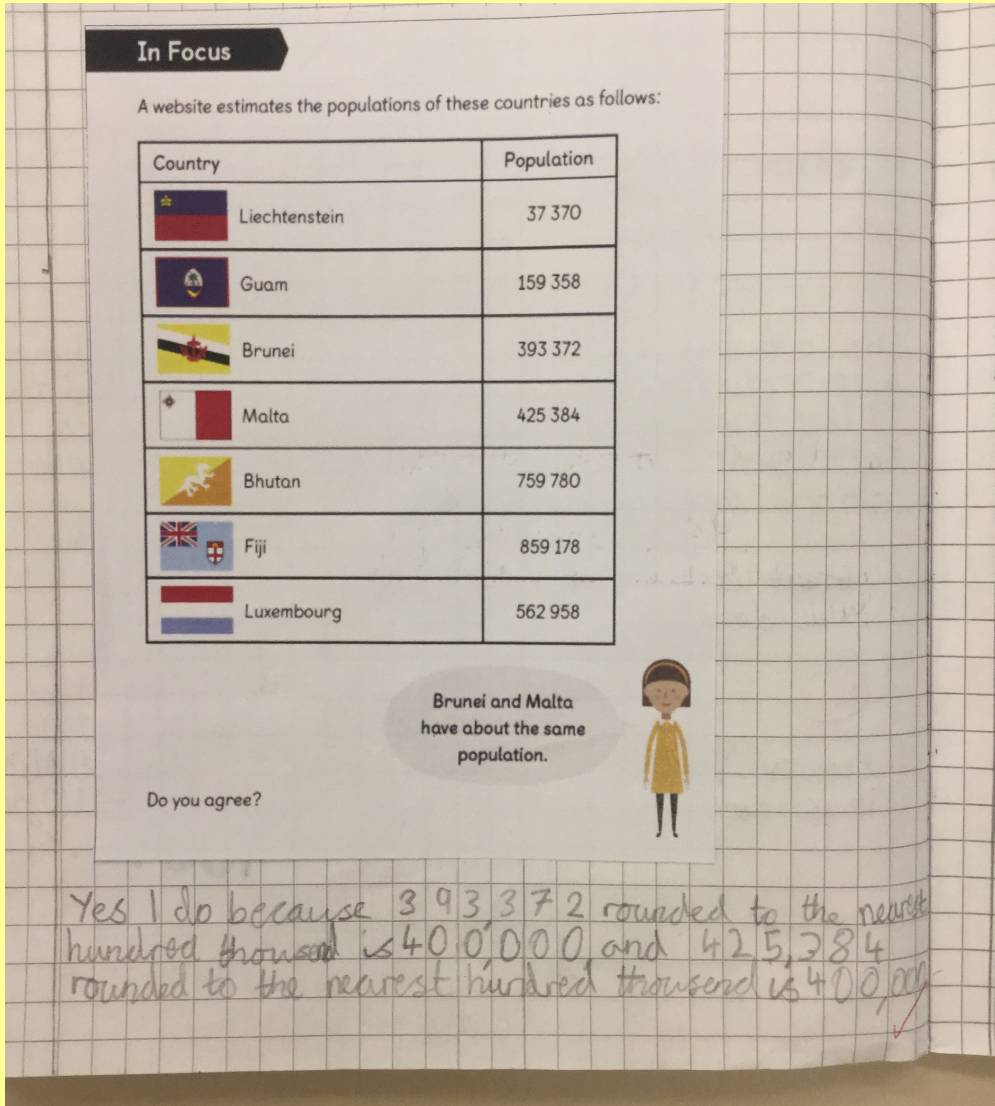
12 + 6 = 18 ✓

6 + 12 = 16 ✗

I did ad on 12 and I endid up with 18

Now

Which number would be best to start on? Why? 12. I countid on from 12 boceos it is the biger nomber.



In Focus

A website estimates the populations of these countries as follows:

Country	Population
Liechtenstein	37 370
Guam	159 358
Brunei	393 372
Malta	425 384
Bhutan	759 780
Fiji	859 178
Luxembourg	562 958

Brunei and Malta have about the same population.

Do you agree?

Yes I do because 393372 rounded to the nearest hundred thousand is 400,000 and 425,384 rounded to the nearest hundred thousand is 400,000 ✓

Lesson Structure

Each lesson will follow this structure:

In Focus task: hook, hands-on, practical task to introduce concept.

Discussion: discussion of learning in In Focus task and modelling of different methods.

Guided Practice: teacher modelling solving a given problem step-by-step

Independent Practice: children answering workbook questions independently.

Greater Depth Task: Involves reasoning, applying skills in different contexts, non-routine problems.

Lesson Structure

Differentiation

- Children are expected to fully master a con cept before moving onto the next.
- Extension takes the form of greater depth activities rather than acceleration.
- Ideas for both support and challenge are provided.
- Deeper activities rather than acceleration; like comparing a ladder to a climbing frame.

Aims

- All classes will receive a practical and well-pitched curriculum
- Practice will be consistent across the school
- We will continue to foster good links with the NCETM through the local maths hub

- Topmarks
- National Numeracy Parent Toolkit
- Maths Zone
- Woodlands Resources
- Nrich
- Jargon Buster

- Maths: No Problem Parent videos http://www.mathsnoproblem.co.uk/parent-videos
- The Maths No Problem section of our website: http://smi.hounslow.sch.uk/helping-at-home/maths-no-problem.html
- Textbooks
- Workbooks