



Maths parent workshop

- How we teach maths
- use of manipulatives,
- how to support your children at home,
 - how we teach fundamentals,
such as addition, subtraction etc, number bonds

"Failure is an
opportunity to grow"

GROWTH MINDSET

"I can learn to do anything I want"

"Challenges help me to grow"

"My effort and attitude
determine my abilities"

"Feedback is constructive"

"I am inspired by the success of others"

"I like to try
new things"

"Failure is the
limit of my abilities"

FIXED MINDSET

"I'm either good at it or I'm not"

"My abilities are unchanging"

"I don't like
to be challenged"

"I can either do it,
or I can't"

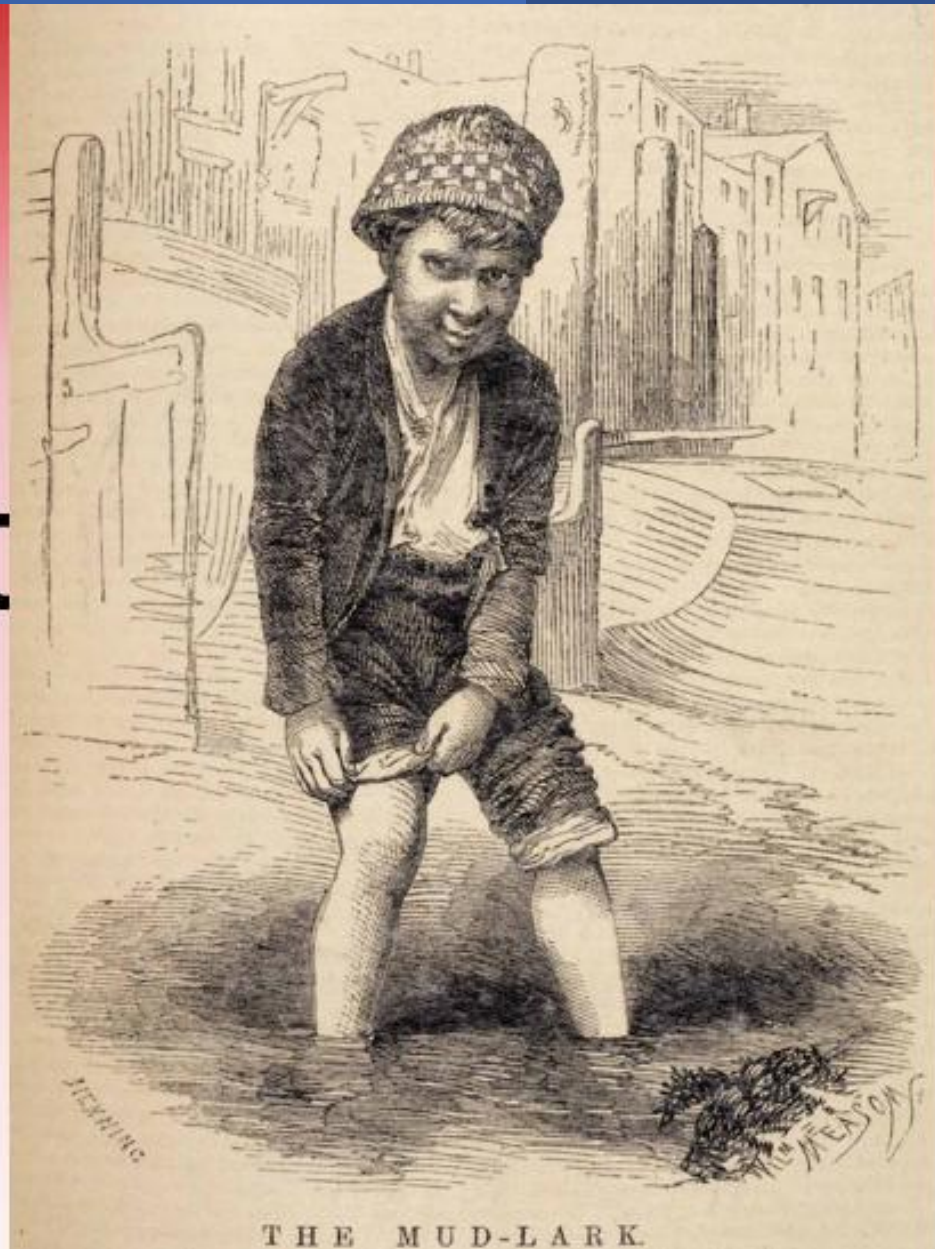
"My potential is predetermined"

"When I'm frustrated,
I give up"

"Feedback and criticism
are personal"

"I stick to what I know"

They didn't
do it like that
in my day!



THE MUD-LARK.



Attitudes towards maths

- The best thing that parents and carers can do for children is to have a **positive attitude** towards maths. Please don't say things like "I can't do maths" or "I hated maths at school"; your child might start to think like that themselves.
- **Point out the maths in everyday life.** Include your child in activities involving maths such as using money, cooking and travelling.

1+4
23

WHY MATHEMATICS IS IMPORTANT FOR ADULTS.

COOKING.



TIMES.

HEAT.

MEASURING.

SPORT.

WEIGHT.

TIME.



DISTANCE.

POINTS SCORED.

MENU.

EATING OUT.

CHANGE.



WHAT TO PAY?

10% FOR A TIP.

SHOPPING.

BEST DEALS.



TOTAL.

GOOD VALUE!

TRANSPORT.

SPEED.

DISTANCE.



TIMETABLE.

COST.



HOME.

HELPING WITH HOMEWORK.

BUDGET.

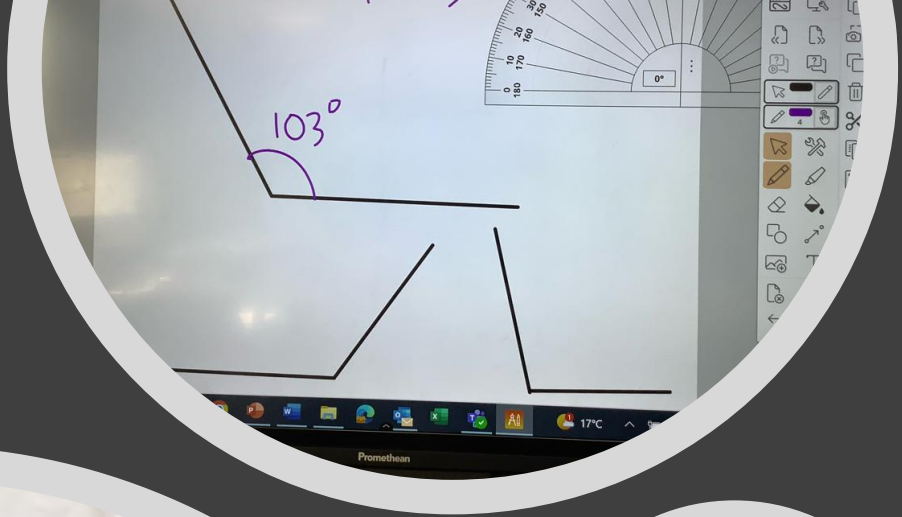


DECORATING.

EMPLOYMENT.



THERE ARE VERY FEW JOBS THAT DO NOT REQUIRE MATHS.



How we teach maths

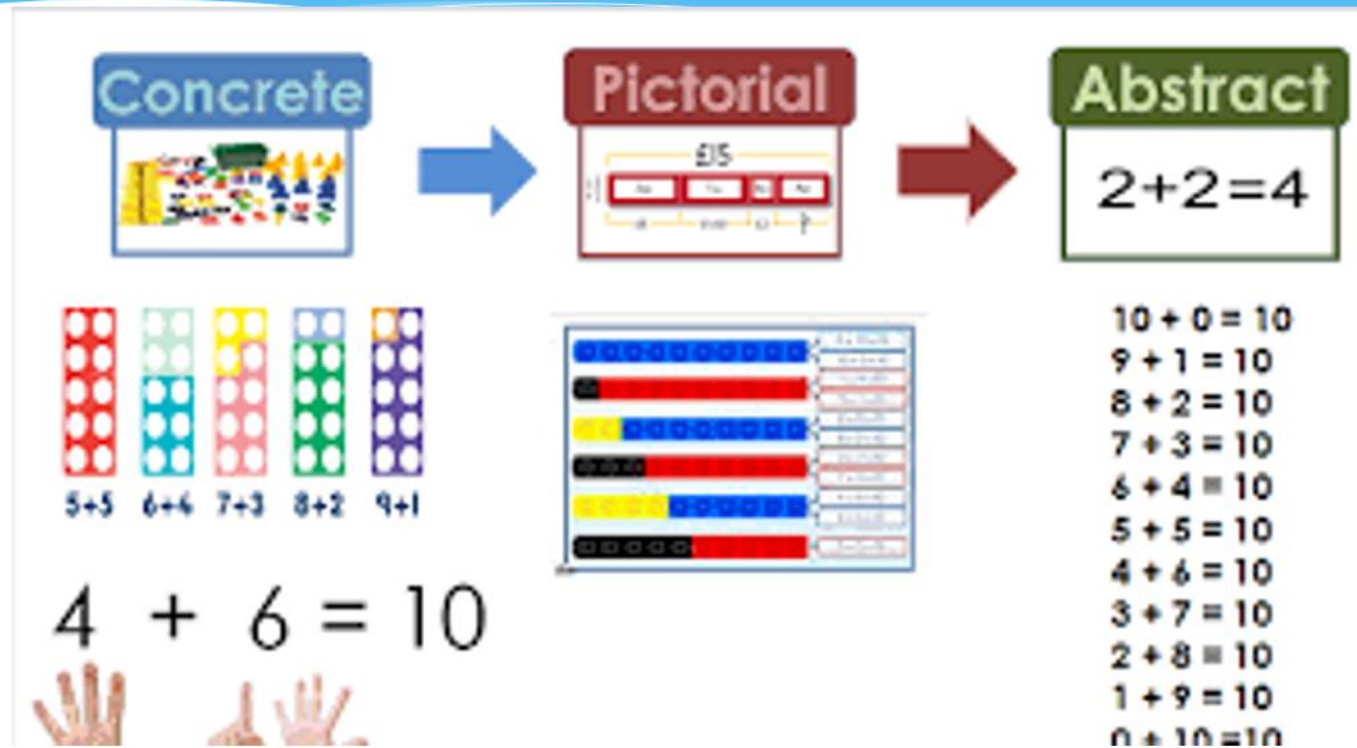




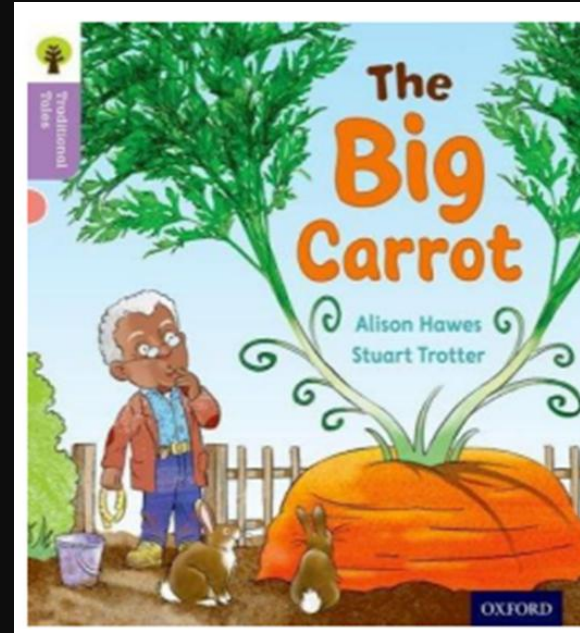
- Here at The Harbour School we use the White Rose Hub as a resource and scheme to help the children understand and flourish within the maths curriculum. They always learn with concrete materials first, then pictorially and then in an abstract way where they are required to use their knowledge and apply it to a new situation. We will have a look at some examples together.
- The teaching and expectations of maths has dramatically changed since we all left school. Gone are the days where children are given worksheets and expected to do hundreds of 'sums.' Now it is all about understanding a concept then using and applying it in a variety of contexts.

How we
teach maths

CPA Approach



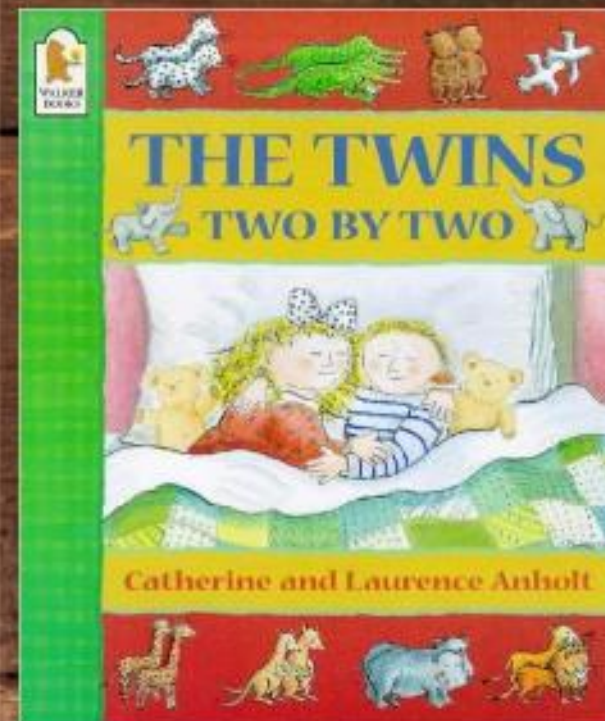
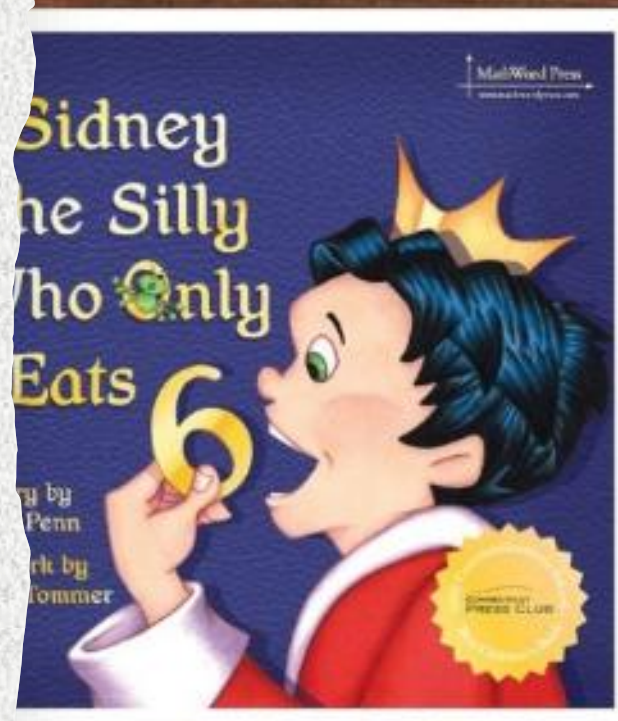
Maths through stories

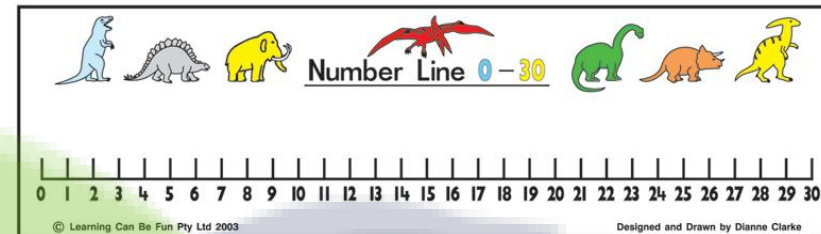




by Kathryn Otoshi

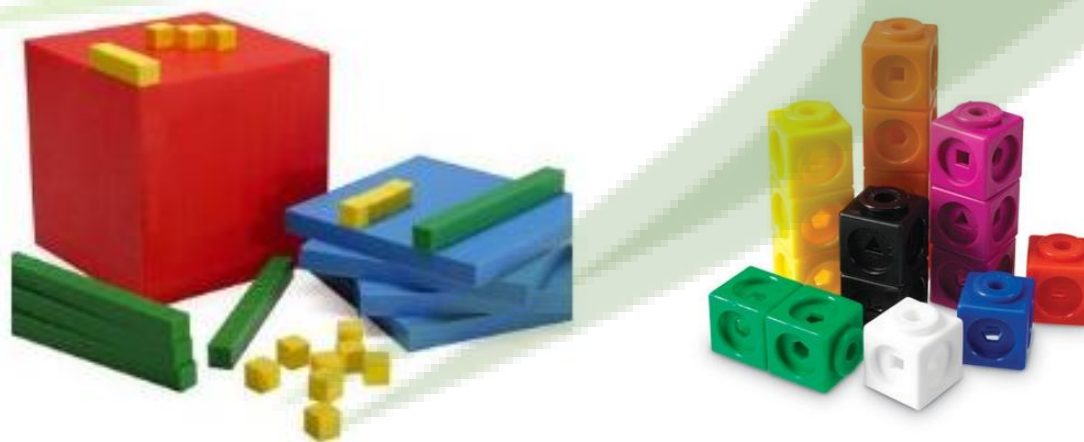
Copyrighted Material

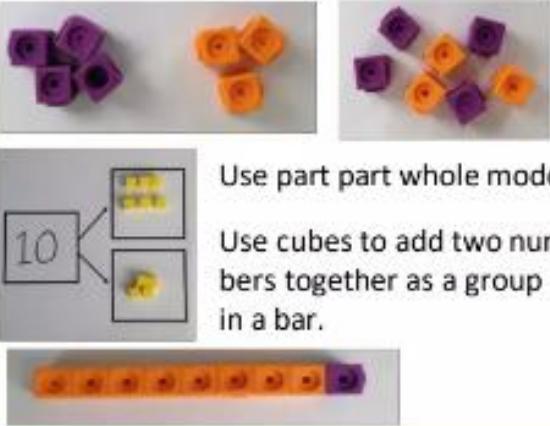
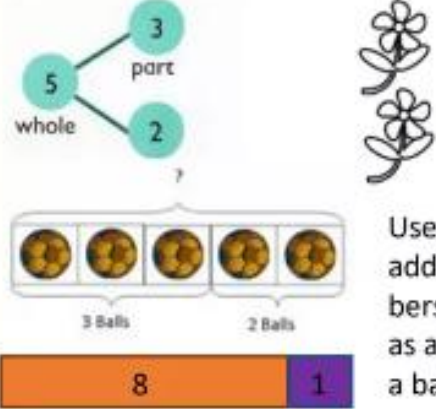
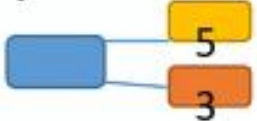




Have a look at the manipulatives on your table.
Which have you used/ seen before?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



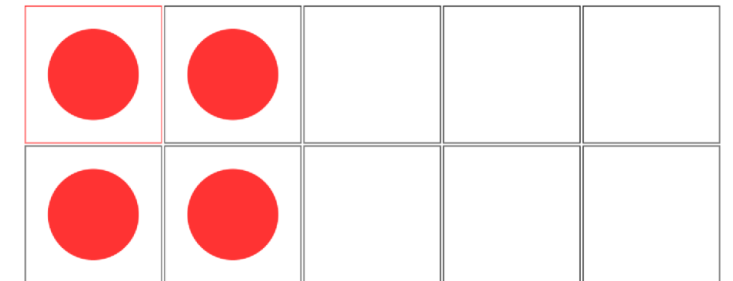
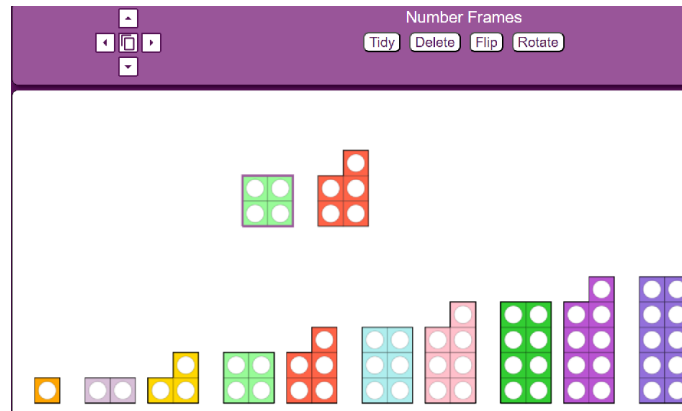
Objective & Strategy	Concrete	Pictorial	Abstract
Combining two parts to make a whole: part- whole model	 Use part part whole model. Use cubes to add two numbers together as a group or in a bar.	 Use pictures to add two numbers together as a group or in a bar.	$4 + 3 = 7$  $10 = 6 + 4$ Use the part-part whole diagram as shown above to move into the abstract.

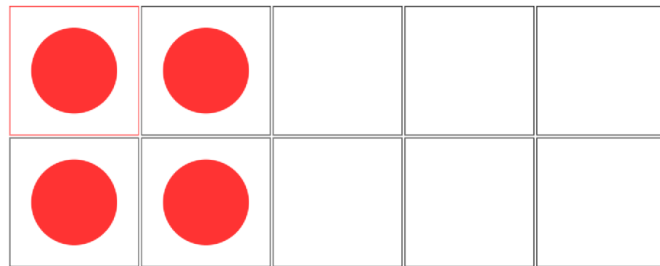
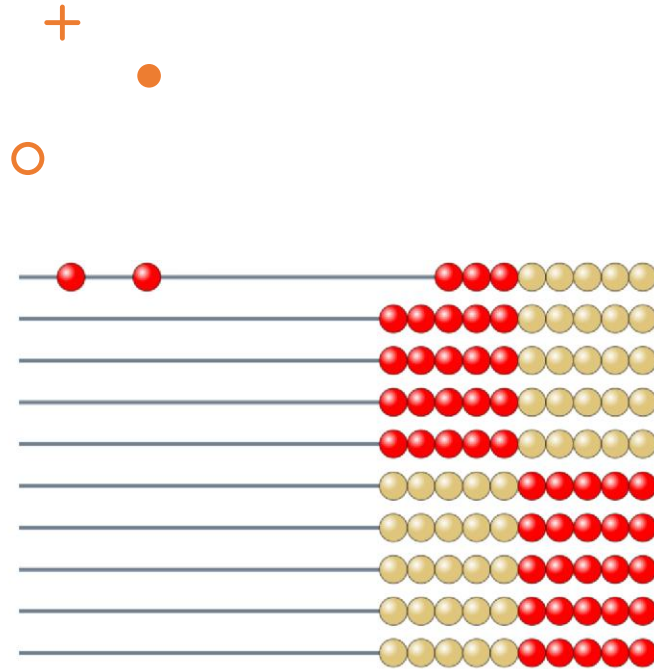
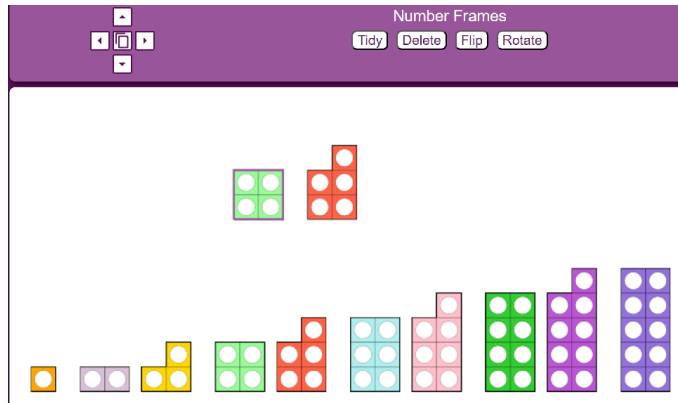
Part whole model

Subtraction

<https://mathsbot.com/manipulatives/numberFrames>

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100





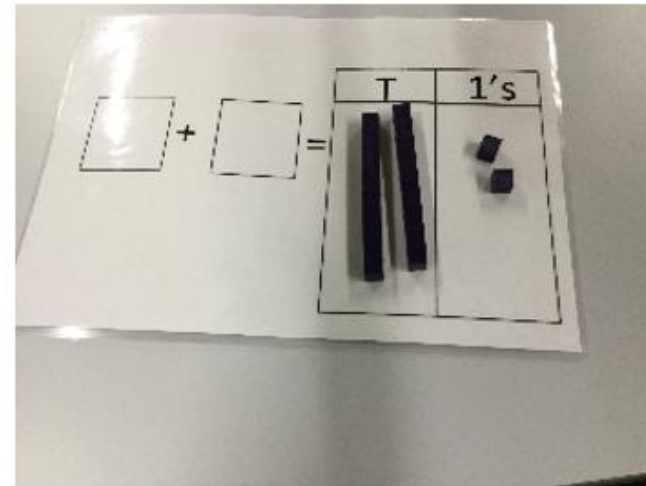
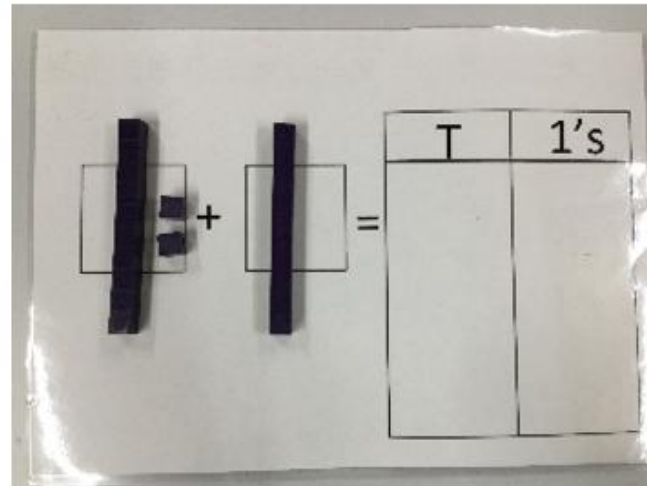
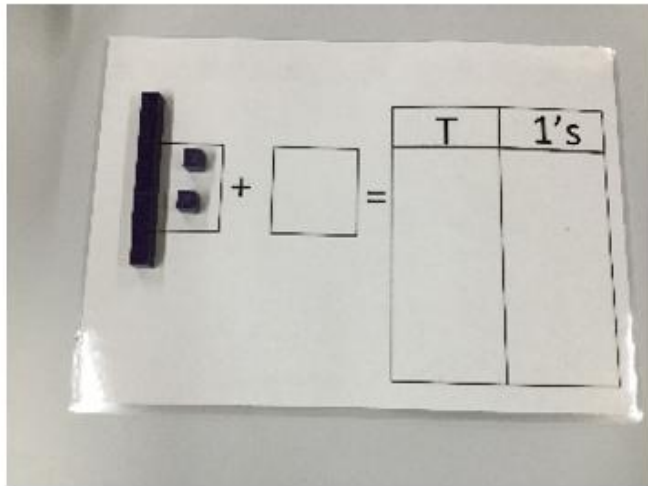
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Multiplication and division

- What is multiplication?
- the repeated addition of groups of equal sizes.
- <https://www.mathsisfun.com/numbers/division.html>

An example of an addition word problem being solved using dienes. This could be solved using sweets (e.g. Chewits)

Big skeleton goes to the shop to buy cakes. He buys 12 chocolate cakes and 10 cream cakes. How many does he buy altogether?



You could also use sticks as tens and stones as ones.



Alternatives to maths resources

Counters



or you could use.....

Smarties



3D shapes



or you could use.....

groceries



Counting Bears



or you could use.....

anything you have a lot of!



You can use anything you have around the house

Pasta for counting



Cards for number recognition and counting



Chewits for counting



Toys to put in size order



Magnetic numbers for number recognition



Don't Forget Outside





Numbers are all around us!



Counting in 2s and 10s

Numicon

or you could use.....

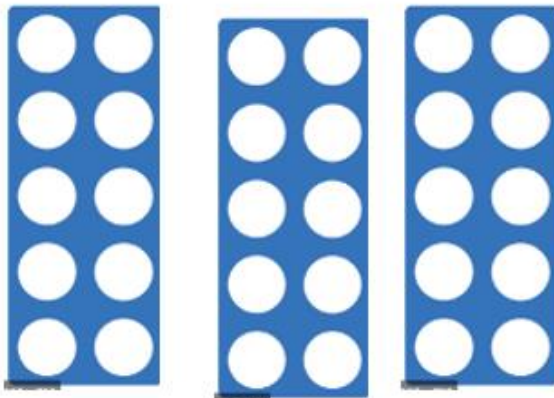
socks



Numicon

or you could use.....

gloves



How can students show us they understand a mathematical concept?

A pupil really understands a mathematical concept, idea or technique if he or she can:

- describe it in his or her own words;
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols – the CPA approach)⁸
- explain it to someone else;
- make up his or her own examples (and non-examples) of it;
- see connections between it and other facts or ideas;
- recognise it in new situations and contexts;
- make use of it in various ways, including in new situations.⁹