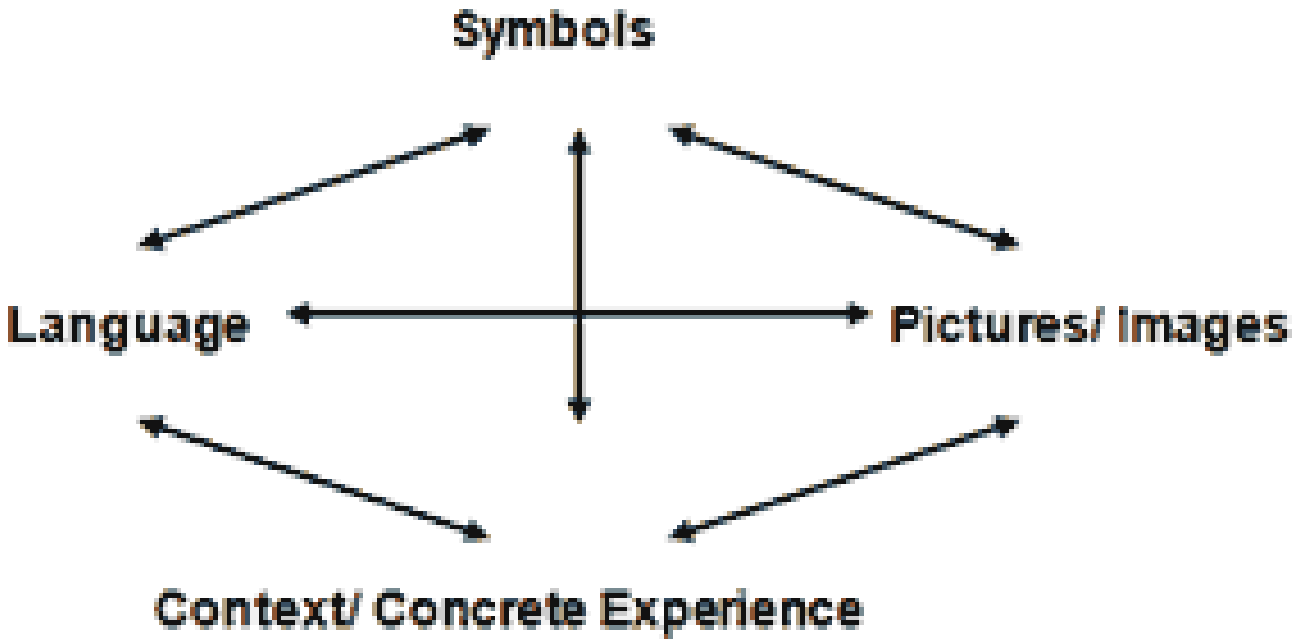
Maths Workshop

Tuesday 19th March

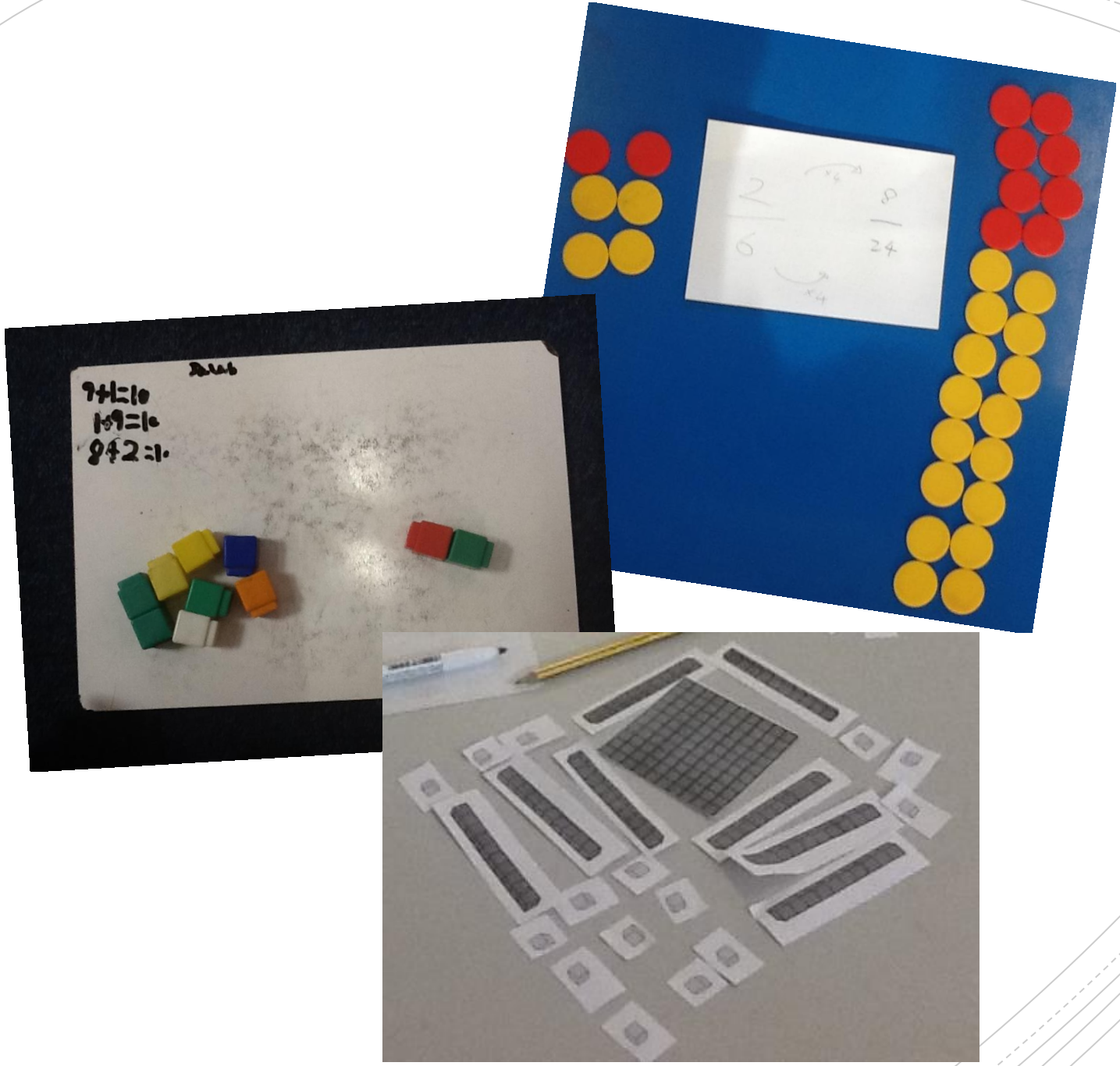
Maths at Coughton

- September 2017 we changed our approach to maths
- Use of manipulatives across the school
- Development of applying skills
- Development of reasoning skills

Opportunity within each class



Manipulatives



Applying skills

- Procedure vs Concept
- Learning ‘how to…’ 2/4 =1/2
- Knowing ‘when to’
- Word problems: ‘RURCC’

Progression of Reasoning

- 1. Describing
- 2. Explaining
- 3. Convincing
- 4. Justifying
- 5. Proving

How does it work?

A set of ten cards, each showing one of the digits from 0 to 9, is divided up between five envelopes so that there are two cards in each envelope. The sum of the two numbers inside it is written on each envelope:

What numbers could be inside the "8" envelope?

1.Describing

- At first I was randomly picking numbers, and on my first attempt doing it I found a solution:
  0 + 7=7 5 + 3=8 9 + 4 =13 6 + 8=14 2 + 1=3.

2. Explaining

- I started looking for 2 numbers which added to 8 but had to be different because I only have one set of cards 0-9. I found 0+ 8, 1+7, 2+6, and 3+5. When I had a solution for 8 I used the other numbers to make the other totals in the envelopes.

3. Convincing

- I worked out that in envelope 8 you could have 0+ 8, 1+7, 2+6, and 3+5.I then worked out all the combinations for 7, 13, 14 and 3. I then chose the solutions that couldn’t be matched and this left me a solution. I reckon there may be other solutions because I used 5 + 3 = 8 and 6 +1 = 7 but I can also use 6 + 2 =8 and 4 + 3 = 7.

4. Justifying

Firstly, we got some 0-9 digit cards (0-9) and found the different totals which added up to 7, 8, 13, 14 and 3.

7	8	13	14	3
7 + 0	0 + 8	9 + 4	8 + 6	2 + 1
4 + 3	6 + 2	7 + 6	9 + 5	3 + 0
5 + 2	7 + 1	5 + 8		
6 + 1	5 + 3			

I started with 3 because it only has two possibilities and went up to the 7 and 8 because they had more possibilities.

After that we tried to see what totalled them again and I knew we couldn't use the same number twice. The first time I tried I got it wrong but the second time I realised I had got it right because I hadn't used a number twice.

This was my solution:

7 + 0 = 7, 5 + 3 = 8, 9 + 4 = 13, 8 + 6 = 14, 2 + 1 = 3

---

5. Proving

7	8	13	14	3
7 + 0	0 + 8	9 + 4	8 + 6	2 + 1
4 + 3	6 + 2	7 + 6	9 + 5	3 + 0
5 + 2	7 + 1	5 + 8		
6 + 1	5 + 3			

7	8	13	14	3
7 + 0	0 + 8	9 + 4	8 + 6	2 + 1
4 + 3	6 + 2	7 + 6	9 + 5	3 + 0
5 + 2	7 + 1	5 + 8		
6 + 1	5 + 3			

How to support your child?

- Calculation policy in the planners
- TTrockstars
- Real life maths problems

Thank you

- Hopefully that 0.5 hours, 30minutes, 1800 seconds was useful!