Numeracy in Early Years

October **2022**

Why is numeracy so important?

- Numeracy is how a child first begins to make sense of the world.
- Mathematical ability in the early years, is a better predictor of future academic success than Literacy.
- Encouraging mathematical skills in young children can also help to discourage them from forming harmful biases at an early age. Studies have shown that children express the stereotype that “Maths is for boys or Maths is too hard” as early as 7 years old.

In Reception our goal is to build the foundations of mathematical knowledge through positive experiences and immersion. This is done through a maths mastery approach.

At Diggle School we follow the White Rose Maths Scheme.

What is maths mastery?

Maths Mastery helps children develop their conceptual understanding of mathematics by using concrete objects, pictorial representations and abstract thinking.

This is an inclusive approach is based on the principles of cognitive psychology and child development and the impact of this is children have a better understanding of number and therefore a more secure foundation to then apply knowledge and skills to a range of problems and ideas.

Maths Mastery in Early Years:

- Mistakes are valuable.
- Questions are encouraged.
- Maths is about creativity, making sense and applying logic.
- Maths is about connections and communicating.
- Maths is about learning, not performing.
- Depth is more important than speed.

Counting

Counting doesn't equal to being numerate.

Counting is usually children's first and memorable experience of numbers and it supports understanding of our number system.

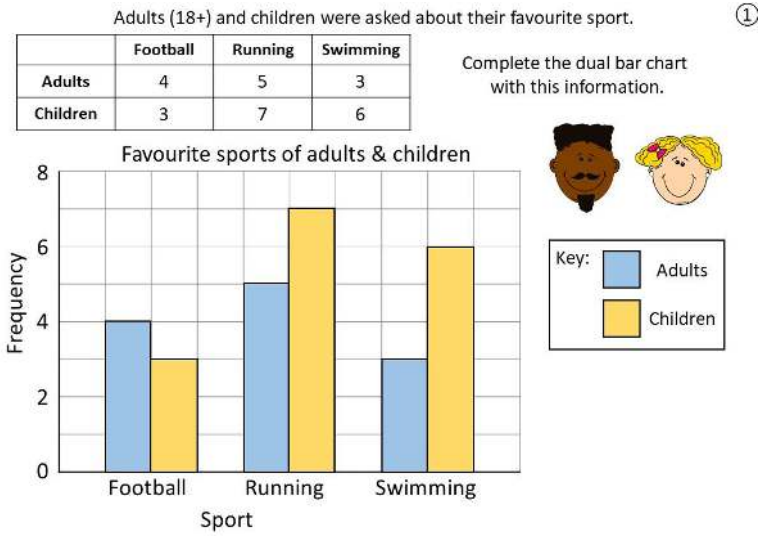
In Reception, children are given daily opportunities to count.

There are 5 principles of counting:

- **Stable order:** The right sequence forwards and backwards
- **One to one correspondence:** Matching one number name to each item in turn, making sure they don't miss any out or count any twice.
- **Cardinality:** The last number in the count gives you the answer.
- **Order irrelevance:** The number of items in a group remains the same even if we rearrange them or count them in a different order.
- **Abstraction:** Counting any collection of objects; real or imaginary.

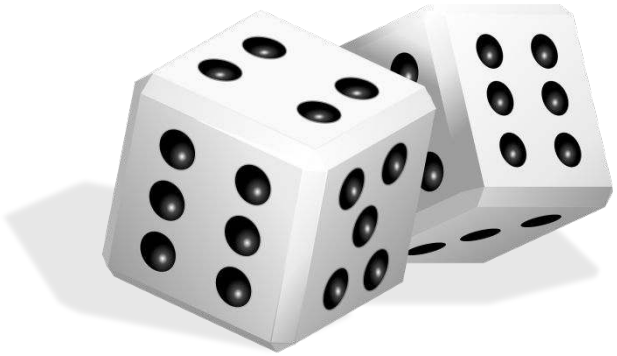
Sort, Match, Compare & Contrast

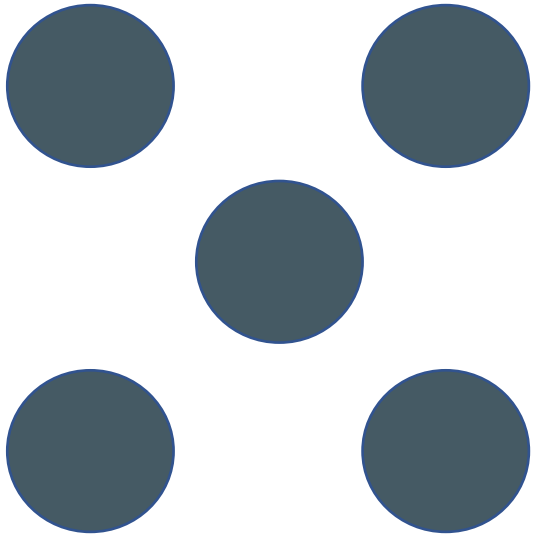
In Reception, we develop the skills of classifying and sorting to help children to develop a range of thinking skills and build the foundations for later problem-solving. The visual memory and discernment involved, and the ability to identify patterns, relationships, similarities and differences, assists children in learning about early number representation and problem-solving and later leads to concepts such as addition, subtraction, multiplication & division.

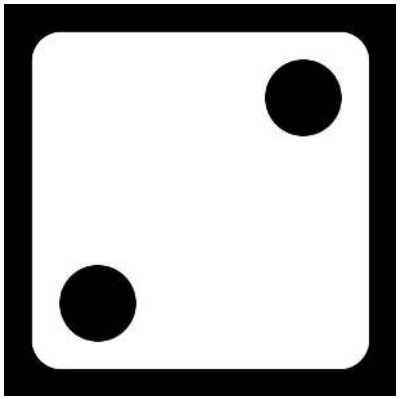


Number Sense - Subitising

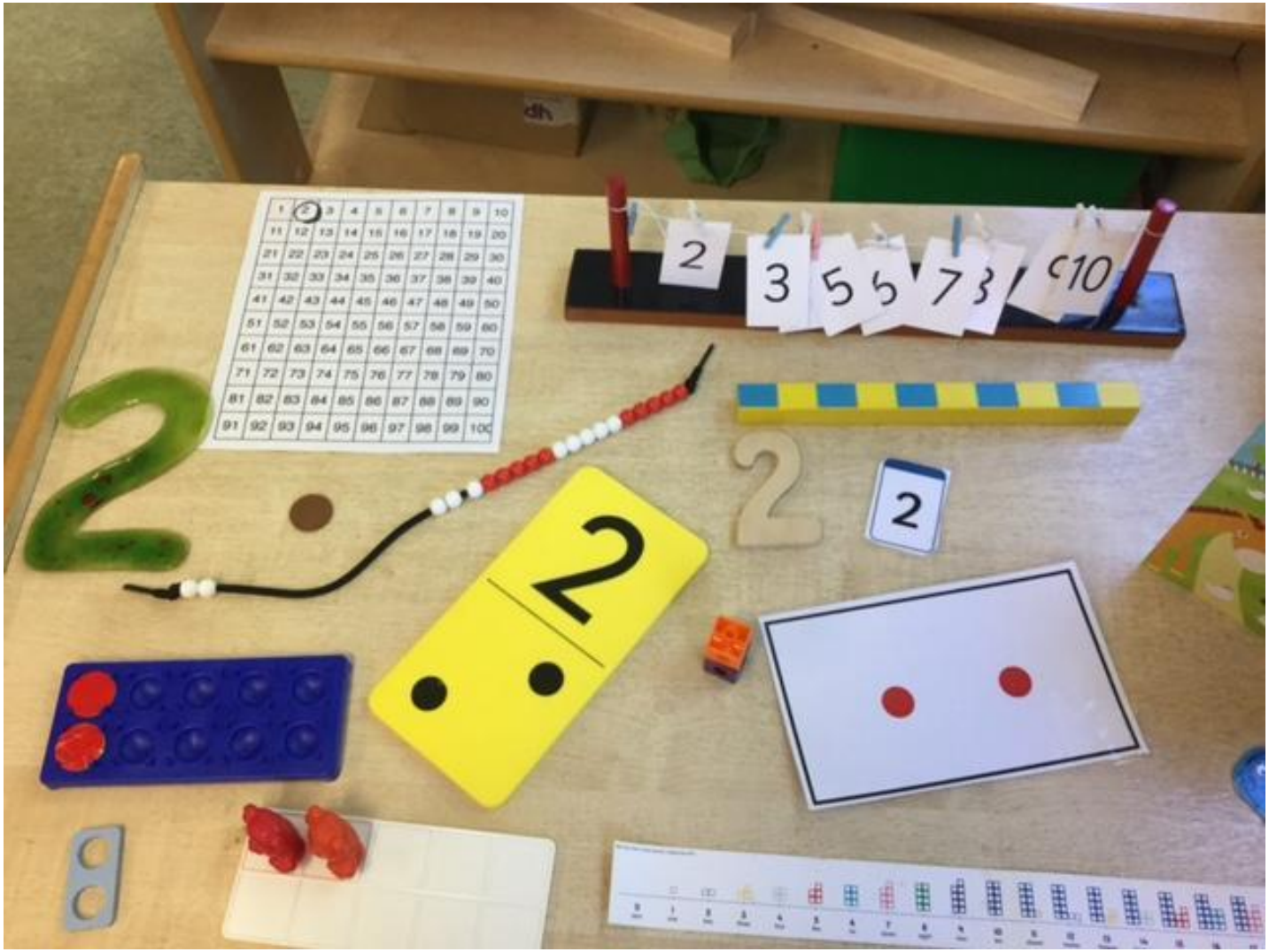
The ability to recognise an amount by sight.



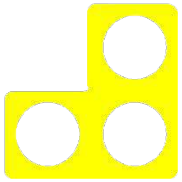


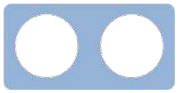


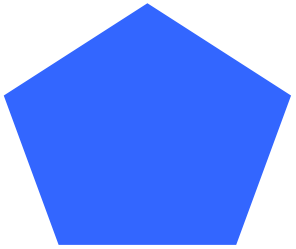
Number Sense



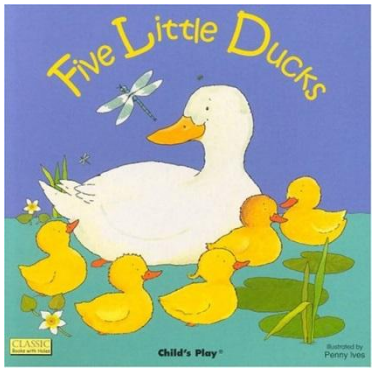
A concept image



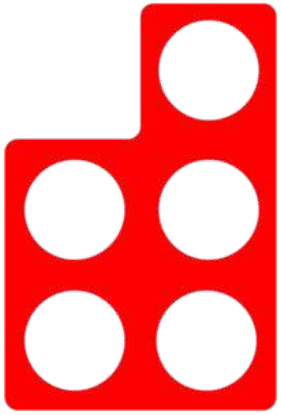




5



five



Resources for Number Sense

Numicon

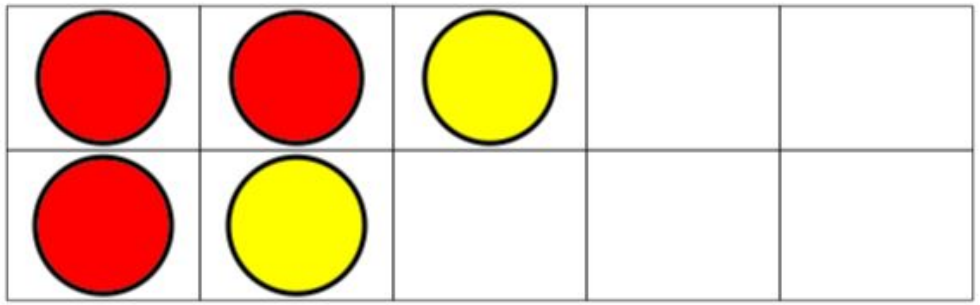
Learning from action manipulation

Learning from seeing observe and notice

Strong sense of pattern explore patterns

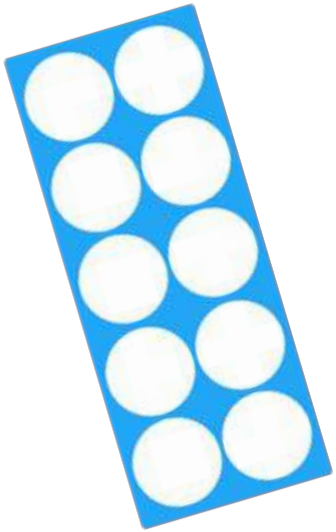
Tens Frames

Ten-frames are two-by-five rectangular frames into which counters are placed to illustrate numbers less than or equal to ten, and are therefore very useful devices for developing number sense within the context of ten. This also helps children recognise amounts.

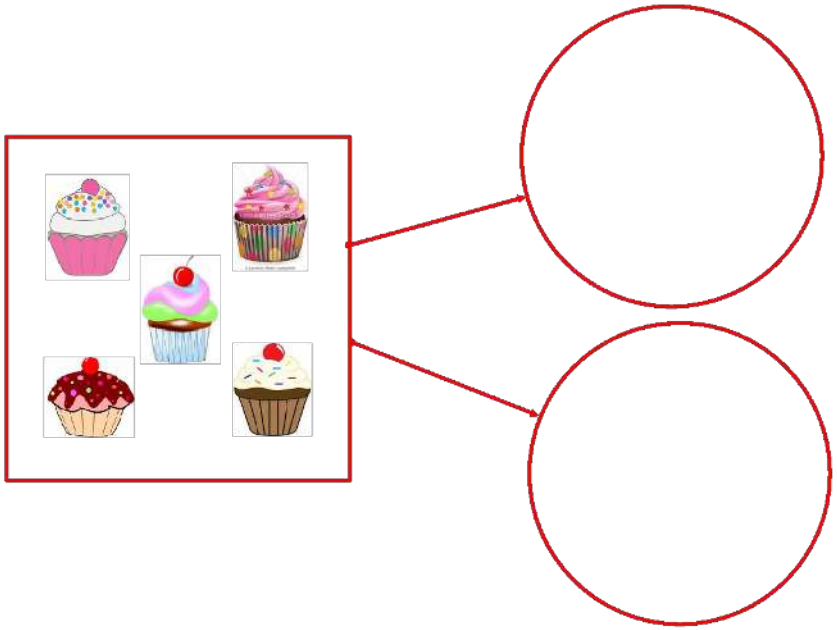


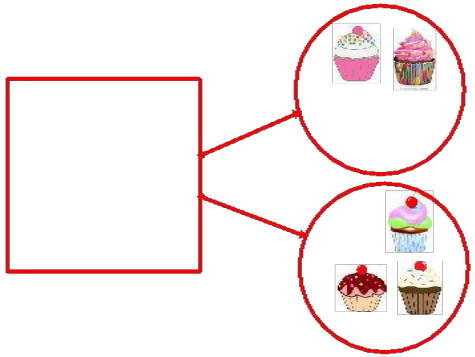
The teniness of 10

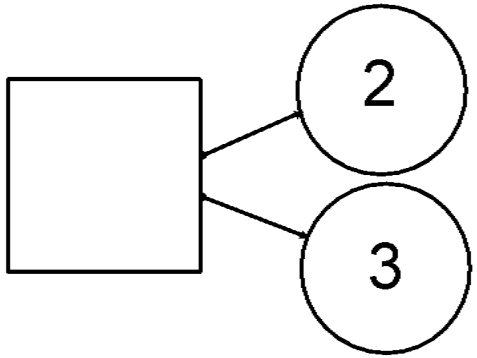
Once children have developed a basic sense of the numbers up to ten they need to develop a strong 'sense of ten' as a foundation for both place value and mental calculations.



Part, Part, Whole



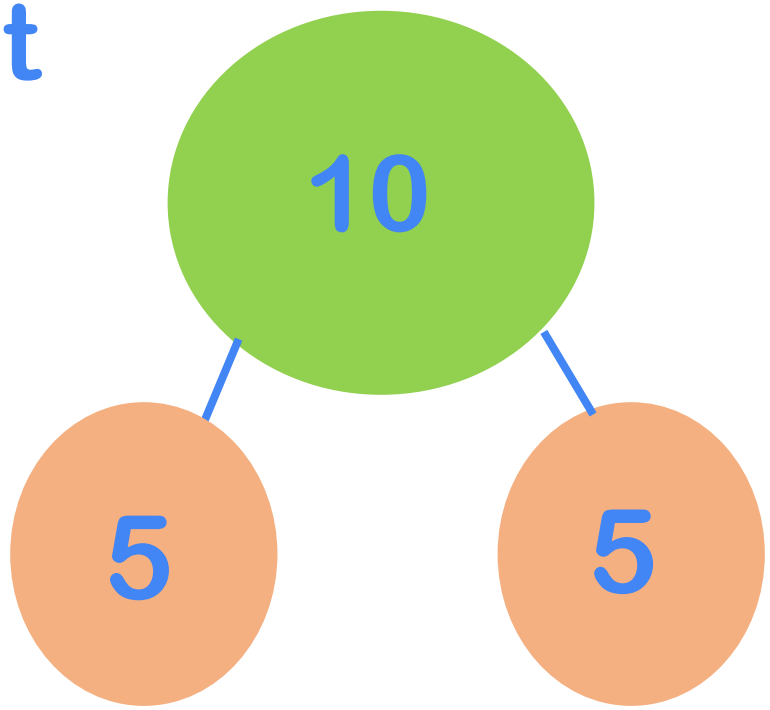




2 and 3
make 5

This is a number bond

Abstract



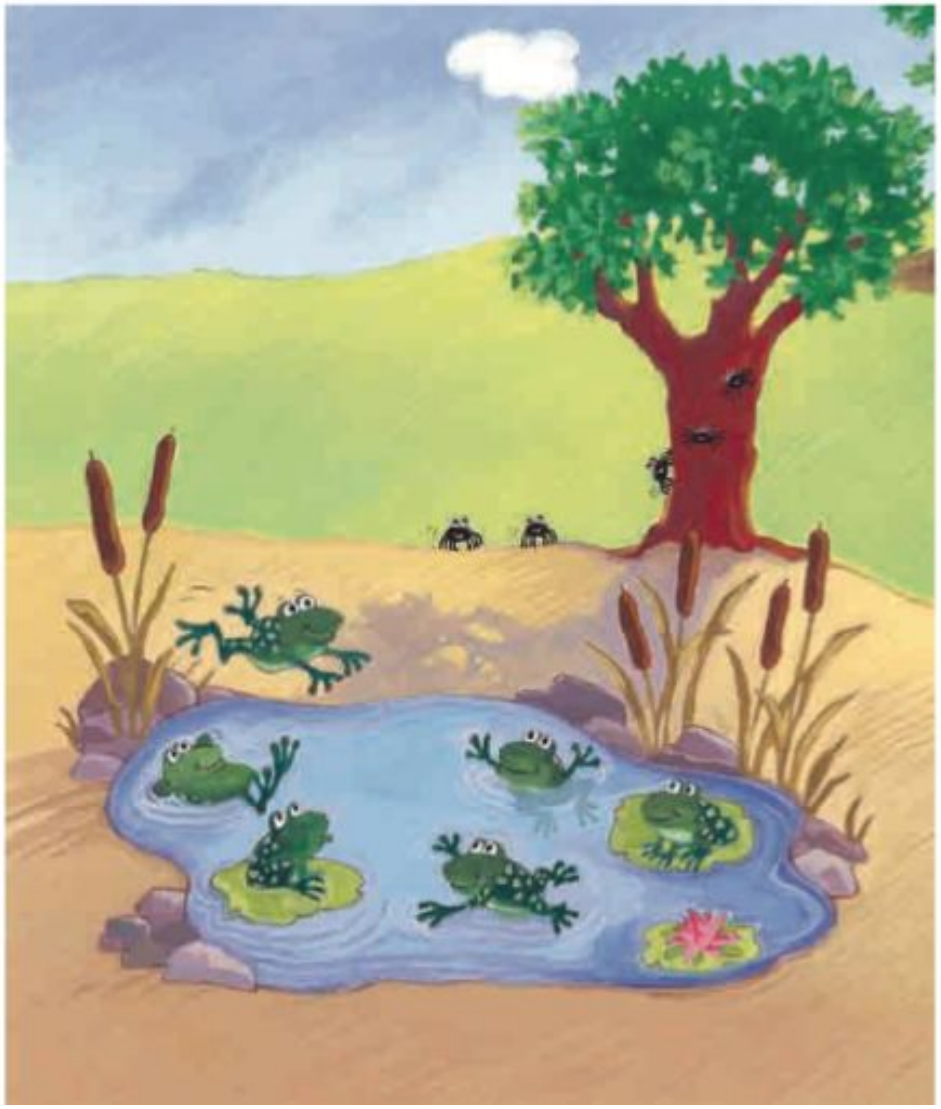
We use part part whole model to move into abstract

Use the term 'number sentence'

5+5 = 10

10 = 5+5

At the Frog Pond



I am going to use the picture to tell a story.

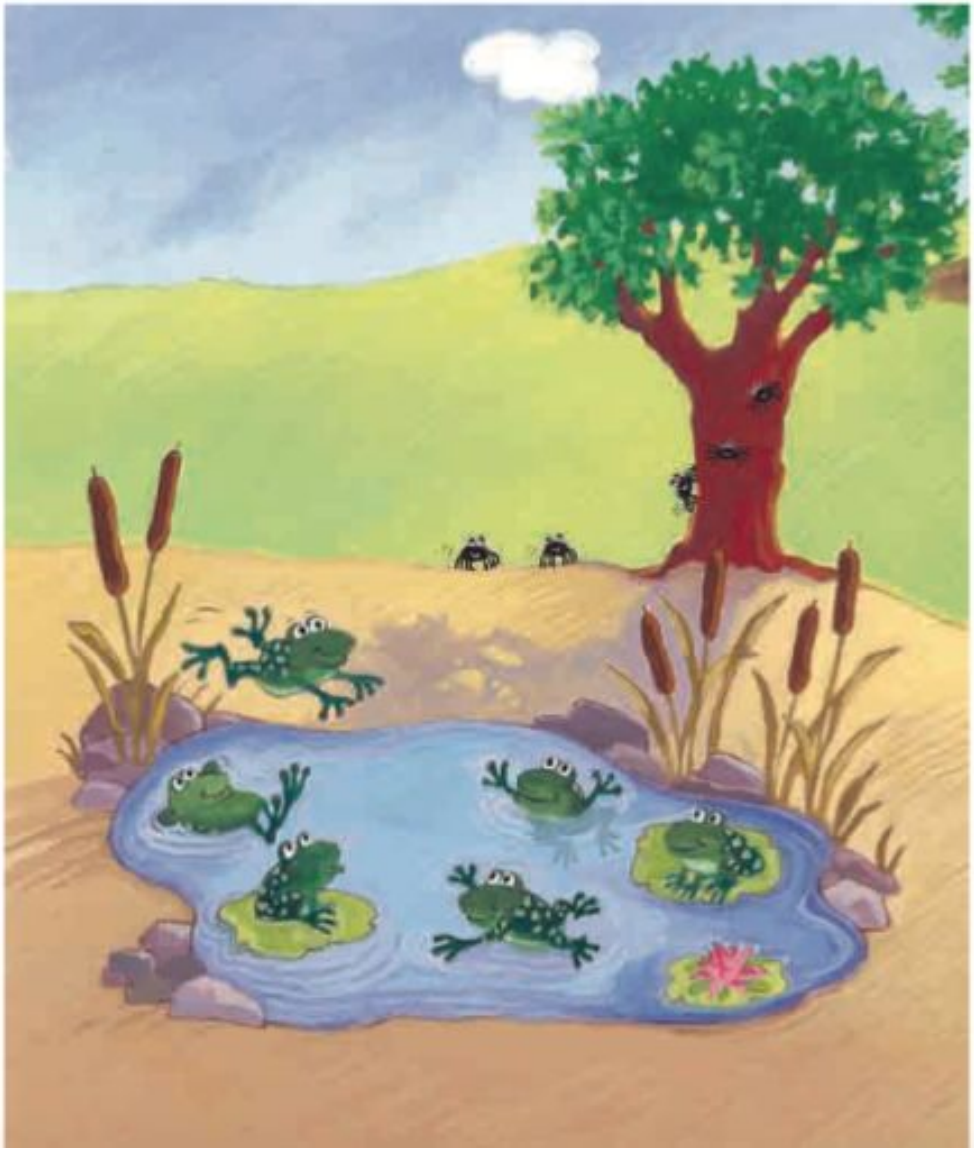
There are two spiders on the ground.

There are three spiders on the tree.

There are five spiders altogether.

At the Frog Pond

I am going to use the picture to tell a story.

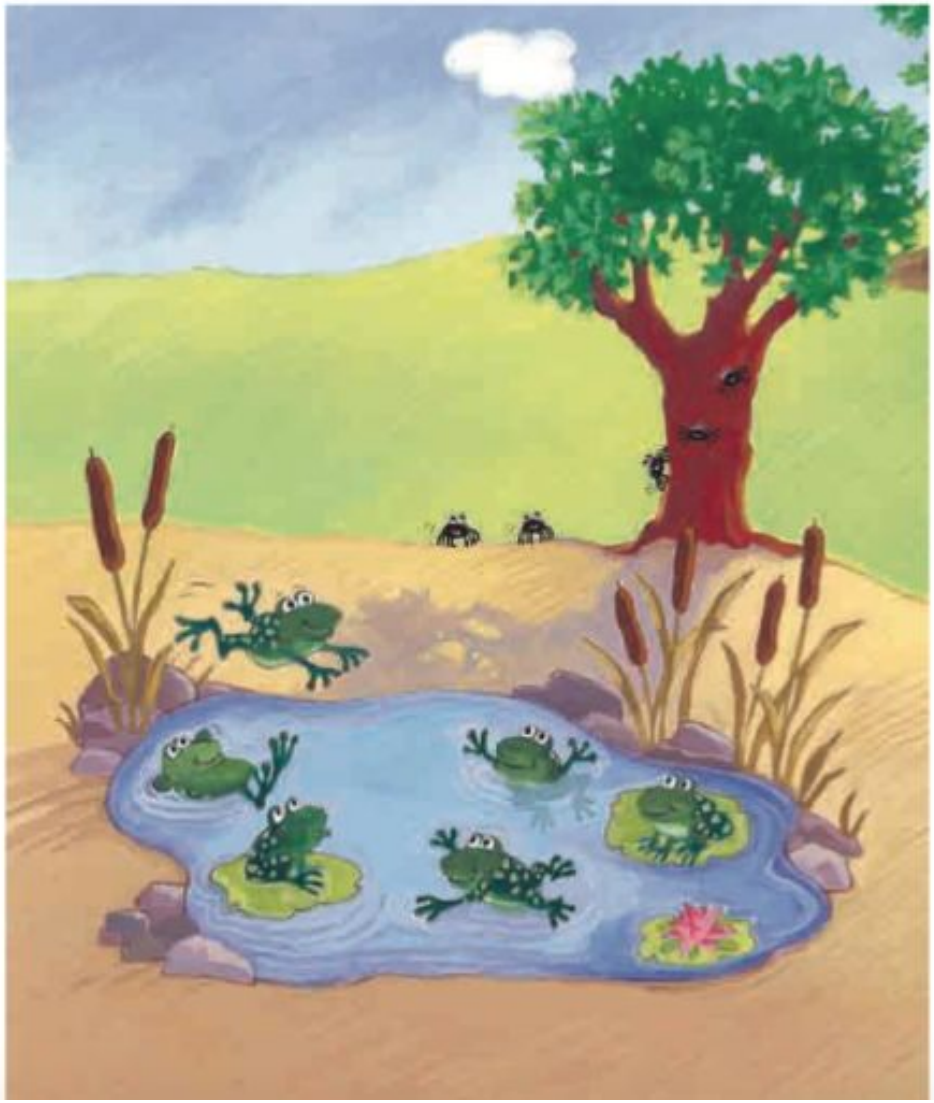


2 is a part

3 is a part

5 is the whole

At the Frog Pond



Can you use the picture to tell another story?

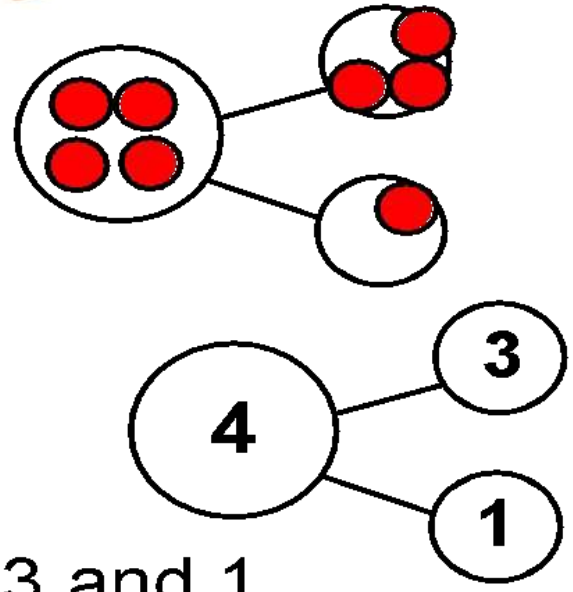
Concrete, Pictorial, Abstract

We can make number stories

There are 4 slices of cake

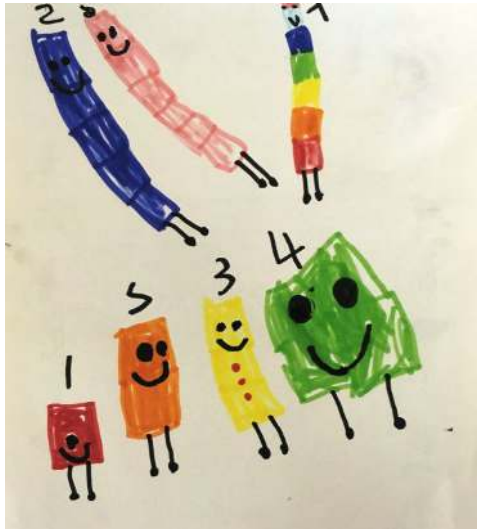
3 slices have cherries

1 slice has no cherry



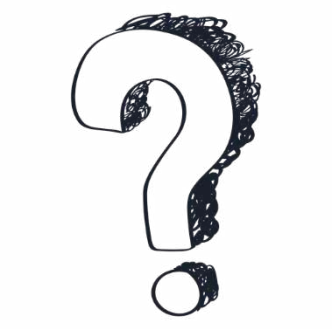
4 is 3 and 1

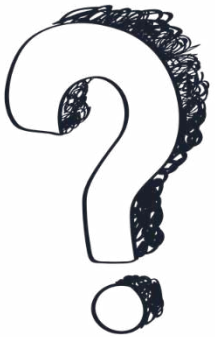
Mark Making Matters



Things you can do at home

- Lots of counting as part of everyday life- both rhymes and counting objects.
- Sorting objects and making patterns.
- Spotting numbers and using the language of number.
- Playing with construction toys (girls and boys).
- Playing simple board games.
- Baking and other activities which involve numeracy.
- Solve problems; work out how many altogether, how many more etc.
- Watch Numberblocks on CBeebies





Any questions?