NUMBOTS Parents and Carers information evening

Tuesday 19th November 2024

Number Bonds (addition and subtraction facts) up to 20

+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10

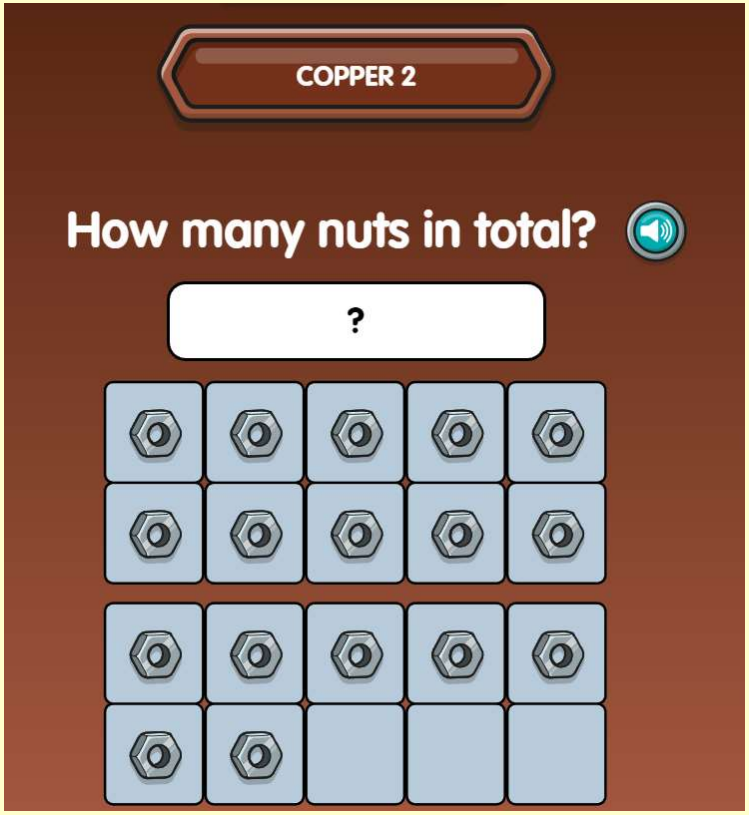
Number facts begin with counting up to five and then knowing number bonds up to five, such as 3 + 2 = 5 and 5 – 3 = 2. This then extends in Key Stage 1 to knowing number facts to 10, 20 and 100.

The current national expectation is that all children will be fluent in the number bonds (addition and subtraction facts) up to 20 by the end of Year 2.

Why do we teach number bonds at John Clifford?

Basic number skills are the essentials building blocks for higher-level maths concepts. Numbots covers number recognition, number bonds and addition and subtraction of double digit numbers, gradually helping your child to build a solid conceptual understanding of number sense.

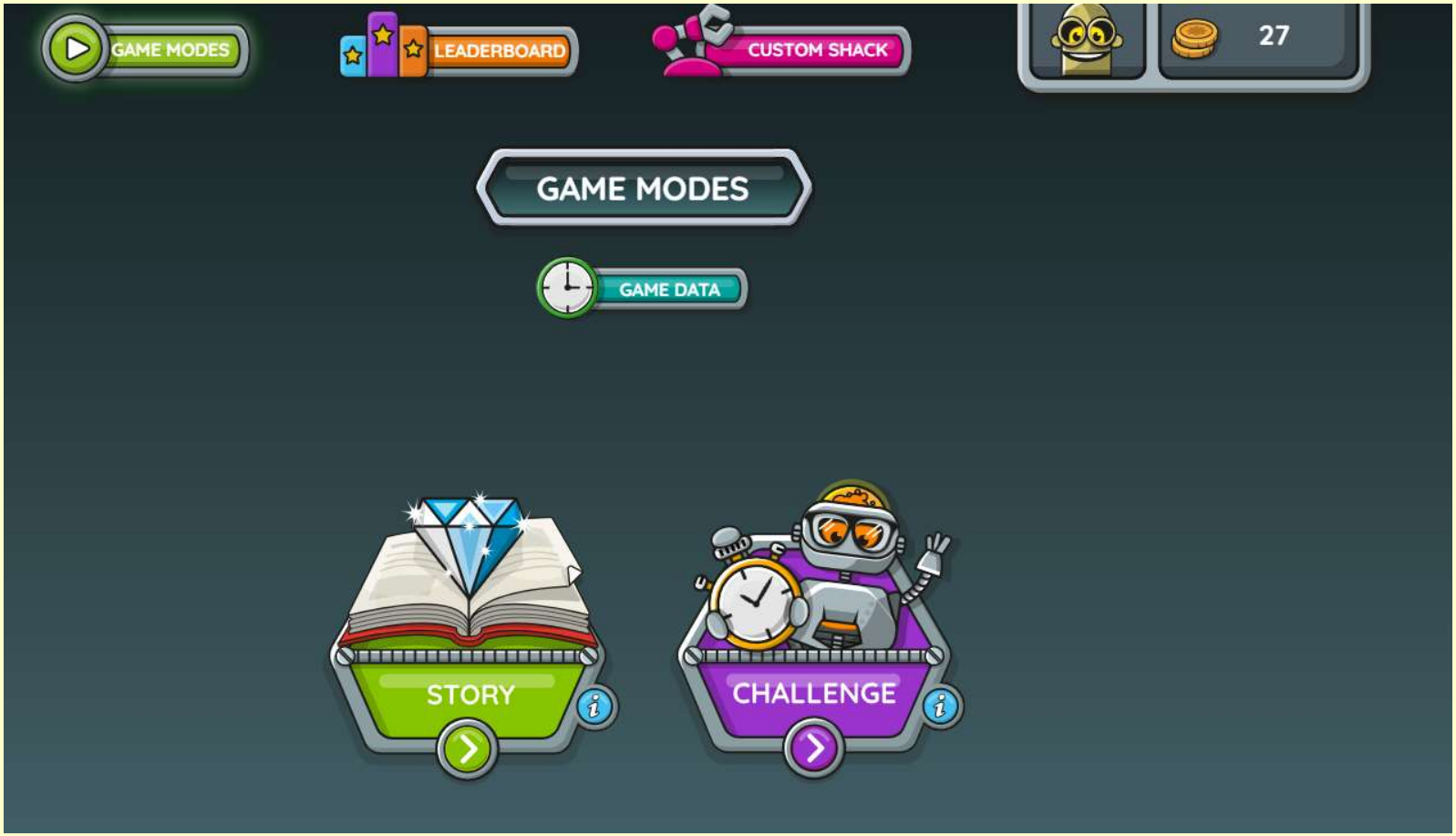
Numbots.com: this site focuses on number bonds up to 100. It is recommended for ages 5-7, but may be suitable for older and younger children depending on their level of understanding.



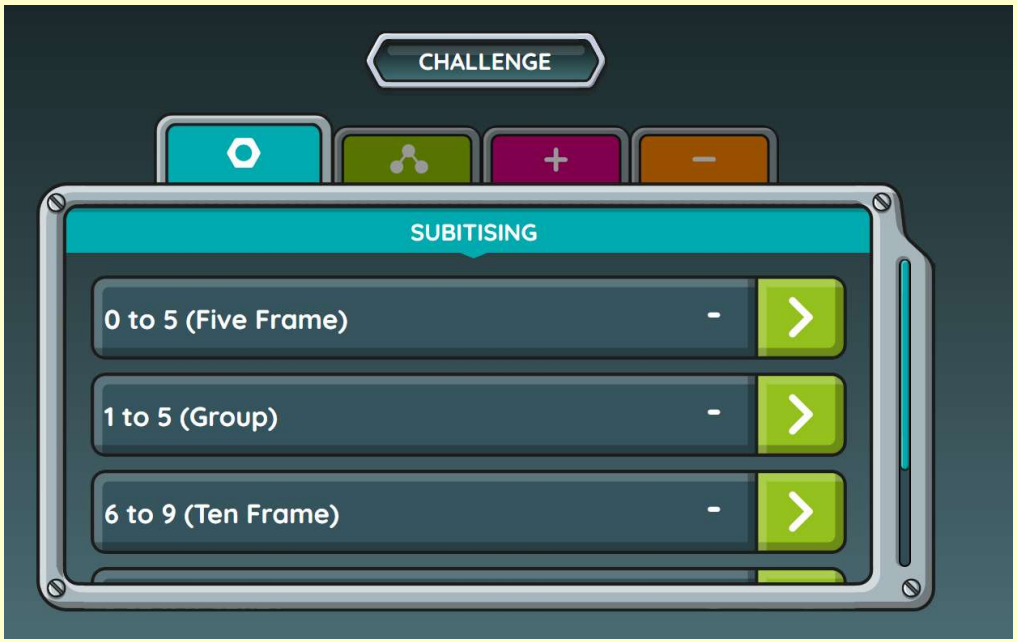
https://www.youtube.com/watch?v=24sqgVgwBOg

Logging into Numbots

Logging into Numbots


GAME MODES
LEADERBOARD
CUSTOM SHACK
27
GAME MODES
GAME DATA
STORY
CHALLENGE

The game starts in 'Story Mode'. There are 18 stages - from Rust to Diamond - and each stage is made up of a number of levels. Players start at Rust level 1 and, to unlock the next level, they need to earn at least 2 out of 3 stars. To earn the 2 or 3 stars required to pass the level, children must demonstrate a level of fluency when answering the questions. This means they must be accurate and timely with their answers; if children get 0 or 1 stars they need to answer more quickly. The game ensures that learners don't move on to the next level until they show they are prepared for it. Story Mode starts with very basic maths (subitising numbers) and progresses steadily and rigorously to addition and subtraction of double-digit numbers.



When players complete Stage 3 (Tin): Level 35 in Story Mode, they will unlock Challenge Mode. Here they can race the clock to test themselves on how many questions they can answer correctly in one minute. There are 20 different challenges to choose from; each challenge testing a different skill, for example number bonds to 10, adding single digits or subtracting double digits.

Glossary of terms	Explanation	When might my child come across this term?
Subitising	This is to tell at a glance, without counting, the number of items in a set. Counting without counting.	Foundation (EYFS framework)
Number bonds	Pairs of numbers that make up a given number. 6+4=10. 6 and 4 are number bonds of 10.	Foundation (EYFS framework)
Place value	Place value is the value of each digit in a number. For example, the 6 in 360 represents 6 tens, or 60	Year 1
Partitioning	Partitioning is a useful way of breaking numbers up so they are easier to work with.Partitioning links closely to place value: a child will be taught to recognise that the number 54 represents 5 tens and 4 ones, which shows how the number can be partitioned into 50 and 4.	Year 2
Commutative	This is a property of the number operations addition and multiplication. In addition 1 + 2 = 2 + 1, i.e. it works both ways, it is commutative. In subtraction or division it does not work both ways, e.g. 6–7 ≠ 7–6.	Year 2
Bridging to the nearest 10	A mental method of adding two numbers whose total is greater than 10. Pupils are taught to count on to 10 and then add the remainder of the number to 10. For example: 7 + 9 – bridging from 7 to 10 requires 3, which leaves 6 (from the original 9), 10 + 6 = 16.	Year 3
Compensating/ Adjusting	Compensation is a way of adding or taking away numbers that you find easier. **23 - 9 = ?** Try taking away **10** instead. **23- 10 = 13.** You have taken away **1** too many (**10** is **1** more than **9**) So add the **1** back on.	Year 3

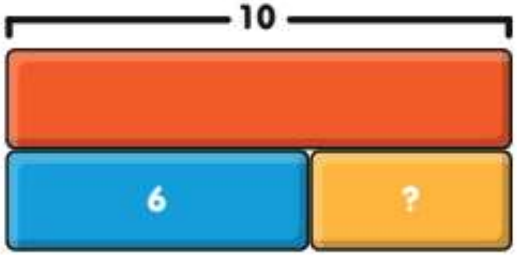
Models and representations to support the teaching of number bonds

Ten Frames

Makes counting values simpler. We can use them to make and split numbers in relation to 5 and 10. They help form the basis for understanding place value in the future.

Bar Model

Remove a number for problem solving opportunities across all operations (+ - x ÷)

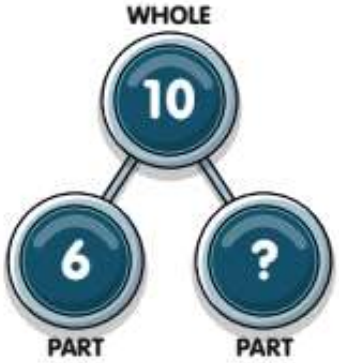


Bead Strings

Usually consists of 10, 20 or 100 beads on a string, grouped by colour. They allow children to move the beads whilst counting and visualising groups of ten.

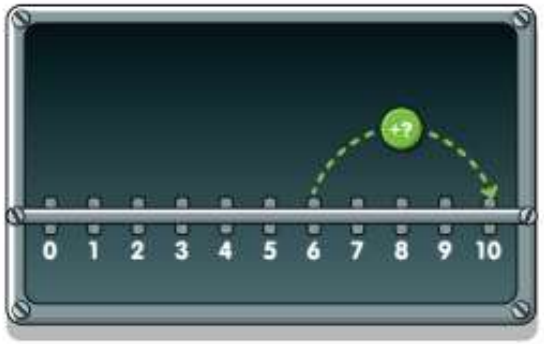
Part Part Whole Model

Within the part whole model, you can use real objects, concrete objects, pictures or numbers. The two parts combine to make the whole and can support with addition and subtraction



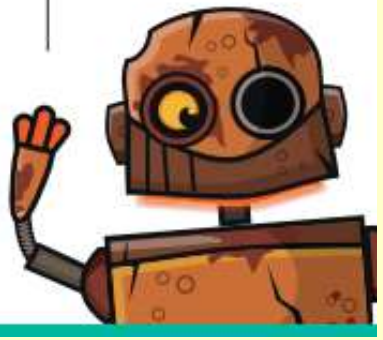
Number Line

Can be used to count forwards and backwards or to identify number bonds and patterns.



Dienes/Base 10

Can be used practically or drawn to support addition and subtraction.



Useful links

https://numbots.com/

https://johnclifford.school/learning/school-curriculum/maths