

Number Bonds Challenge!

What is it?

Your child has completed the *Know Your Numbers Challenge* so now I would like to introduce the Number Bonds Challenge. I would like to move them onto this challenge as it is designed to help children recall mental number facts quickly and confidently, which is a very important area of the maths curriculum.

This challenge takes place first thing every Monday morning!

How does it work?

The Number Bonds Challenge takes place in different steps.

Step 11

Children are asked to recall their Number Bonds to 10.

They are given 11 questions and are given 1 minute to answer them.

Here is an example of how the challenge is presented to the children and the types of questions they will be asked.

$$9 + \underline{\quad\quad\quad} = 10$$

$$10 + \underline{\quad\quad\quad} = 10$$

$$8 + \underline{\quad\quad\quad} = 10$$

$$7 + \underline{\quad\quad\quad} = 10$$

$$4 + \underline{\quad\quad\quad} = 10$$

$$2 + \underline{\quad\quad\quad} = 10$$

$$5 + \underline{\quad\quad\quad} = 10$$

$$6 + \underline{\quad\quad\quad} = 10$$

$$0 + \underline{\quad\quad\quad} = 10$$

$$3 + \underline{\quad\quad\quad} = 10$$

$$9 + \underline{\quad\quad\quad} = 10$$

Step 12

Once children have achieved 11/11 in the allotted time, they move on to step 14 where they have to recall subtraction facts for numbers up to 10. They have 11 questions which they must answer in 1 minute. **(TIP: If children know that $2 + 8 = 10$, then they know that $10 - 8 = 2$. Please encourage your children to see the inverse relationship between the numbers as it helps their recall!)**

$$10 - \underline{\quad\quad\quad} = 2$$

$$10 - \underline{\quad\quad\quad} = 7$$

$$10 - \underline{\quad\quad\quad} = 10$$

$$10 - \underline{\quad\quad\quad} = 1$$

$$10 - \underline{\quad\quad\quad} = 9$$

$$10 - \underline{\quad\quad\quad} = 8$$

$$10 - \underline{\quad\quad\quad} = 6$$

$$10 - \underline{\quad\quad\quad} = 5$$

$$10 - \underline{\quad\quad\quad} = 4$$

$$10 - \underline{\quad\quad\quad} = 0$$

$$10 - \underline{\quad\quad\quad} = 3$$

Step 13 involves the children recalling their Number Bonds to 20. They are now expected to answer 20 questions in 2 minutes on pairs of numbers that make 20.

$12 + \underline{\quad\quad\quad} = 20$

$15 + \underline{\quad\quad\quad} = 20$

$9 + \underline{\quad\quad\quad} = 20$

$7 + \underline{\quad\quad\quad} = 20$

$8 + \underline{\quad\quad\quad} = 20$

$7 + \underline{\quad\quad\quad} = 20$

$0 + \underline{\quad\quad\quad} = 20$

$20 + \underline{\quad\quad\quad} = 20$

$3 + \underline{\quad\quad\quad} = 20$

$0 + \underline{\quad\quad\quad} = 20$

$4 + \underline{\quad\quad\quad} = 20$

$2 + \underline{\quad\quad\quad} = 20$

$1 + \underline{\quad\quad\quad} = 20$

$5 + \underline{\quad\quad\quad} = 20$

$11 + \underline{\quad\quad\quad} = 20$

$16 + \underline{\quad\quad\quad} = 20$

$18 + \underline{\quad\quad\quad} = 20$

$19 + \underline{\quad\quad\quad} = 20$

$14 + \underline{\quad\quad\quad} = 20$

$13 + \underline{\quad\quad\quad} = 20$

Step 14 involves the children recalling the subtraction facts for numbers relating to 20. The children are given 2 minutes to answer 20 questions:

$20 - \underline{\quad\quad\quad} = 15$

$20 - \underline{\quad\quad\quad} = 4$

$20 - \underline{\quad\quad\quad} = 9$

$20 - \underline{\quad\quad\quad} = 13$

$20 - \underline{\quad\quad\quad} = 12$

$20 - \underline{\quad\quad\quad} = 10$

$20 - \underline{\quad\quad\quad} = 1$

$20 - \underline{\quad\quad\quad} = 5$

$20 - \underline{\quad\quad\quad} = 6$

$20 - \underline{\quad\quad\quad} = 16$

$20 - \underline{\quad\quad\quad} = 11$

$20 - \underline{\quad\quad\quad} = 3$

$20 - \underline{\quad\quad\quad} = 2$

$20 - \underline{\quad\quad\quad} = 19$

$20 - \underline{\quad\quad\quad} = 20$

$20 - \underline{\quad\quad\quad} = 8$

$20 - \underline{\quad\quad\quad} = 17$

$20 - \underline{\quad\quad\quad} = 7$

$20 - \underline{\quad\quad\quad} = 0$

$20 - \underline{\quad\quad\quad} = 18$

These two steps help to consolidate children's knowledge of their number bonds to 10 and 20.

Step 15 involves the children recalling addition and subtraction Number Bonds to 10. This really helps children to consolidate knowledge.

They are now expected to answer 10 questions in 1 minute.

$$\begin{aligned}9 + \underline{\quad\quad} &= 10 \\10 - \underline{\quad\quad} &= 6 \\10 + \underline{\quad\quad} &= 10 \\10 - \underline{\quad\quad} &= 9 \\8 + \underline{\quad\quad} &= 10 \\10 - \underline{\quad\quad} &= 8 \\7 + \underline{\quad\quad} &= 10 \\4 + \underline{\quad\quad} &= 10 \\10 - \underline{\quad\quad} &= 1 \\10 - \underline{\quad\quad} &= 5\end{aligned}$$

Step 16 involves the children recalling addition and

subtraction Number Bonds to 20. This really helps children to consolidate knowledge.

They are now expected to answer 10 questions in 1 minute.

$$\begin{aligned}20 - \underline{\quad\quad} &= 15 \\8 + \underline{\quad\quad} &= 20 \\20 - \underline{\quad\quad} &= 4 \\0 + \underline{\quad\quad} &= 20 \\20 - \underline{\quad\quad} &= 9 \\7 + \underline{\quad\quad} &= 20 \\20 - \underline{\quad\quad} &= 13 \\20 - \underline{\quad\quad} &= 12 \\9 + \underline{\quad\quad} &= 20 \\17 + \underline{\quad\quad} &= 20\end{aligned}$$

Step 17: Doubles to 10

This step involves the children being able to double numbers. They have 10 questions which they must answer in 1 minute. Here is an example of how the challenge is presented to the children.

Double 2=

Double 4=

Double 3 =

Double 1 =

Double 5 =

Double 7 =

Double 8 =

Double 6 =

Double 9 =

Double 10 =

Step 18: Doubles to 20

This step involves the children being able to halve numbers. They have 10 questions which they must answer in 1 minute. Here is an example of how the challenge is presented to the children.

Double 20=

Double 14=

Double 11 =

Double 15 =

Double 12 =

Double 13 =

Double 16 =

Double 19 =

Double 18 =

Double 17 =

It is really important the children realise 'double 8' means 8 add 8. To teach the children doubles to 20 I do it with practically with pasta or smarties. For example 'Double 5' – children count out 5 bits of pasta and then another 5 and add them together.

When doubling 2 digit numbers such as 15, I always say double the 10 first and then double the 5 and add them together. I find the best way is just to **practise, practise, practise** as this way the children can just recall the double facts automatically.

The trick is to break the bigger numbers into TENS and ONES.

Double 12 = double 10 add double 2 = 20 +4.

Double 18 = Double 10 + Double 8 = 20 + 16.

Step 19: Halving

This step involves the children being able to halve numbers. They have 10 questions which they must answer in 1 minute. Here is an example of how the challenge is presented to the children.

$$\text{Halve } 6 =$$

$$\text{Halve } 14 =$$

$$\text{Halve } 18 =$$

$$\text{Halve } 40 =$$

$$\text{Halve } 12 =$$

$$\text{Halve } 10 =$$

$$\text{Halve } 8 =$$

$$\text{Halve } 16 =$$

$$\text{Halve } 26 =$$

$$\text{Halve } 24$$

=

Step 20: Final Step

This step involves the children being able to complete questions from all the previous steps.

They have 12 questions which they must answer in 2 minutes.

Here is an example of how the challenge is presented to the children.

$$10 + \underline{\quad} = 10$$

$$2 + \underline{\quad} = 10$$

$$10 - \underline{\quad} = 6$$

$$10 - \underline{\quad} = 8$$

$$3 + \underline{\quad} = 20$$

$$16 + \underline{\quad} = 20$$

$$20 - \underline{\quad} = 16$$

$$20 - \underline{\quad} = 19$$

$$\text{Double } 12 = \underline{\quad}$$

$$\text{Double } 6 = \underline{\quad}$$

$$\text{Halve } 26 = \underline{\quad}$$

$$\text{Halve } 30 = \underline{\quad}$$

This is the end of the Number Bonds challenge!

Now, children move on to the Times Tables Challenge.

At this point I will send home a pack about the times tables challenge!