

Maths Ninjas Sets 20 (operations + – × ÷)

The Maths Relevance Explained

Having reached Set 20, your child should know addition and subtraction bonds, multiplication and division facts. There are no new bonds or facts to learn here; this set is consolidating understanding of the operators +, –, ×, ÷ so that your child can see the relationship between numbers.

Your child needs to know that:-

Adding gives a bigger answer than the starting number.

Subtracting gives a smaller number than the starting number.

Subtraction is the inverse of addition. If $3 + 2 = 5$, then $5 - 2 = 3$.

Multiplying is repeated adding of the same number. $5 \times 3 = 15$ is $3 + 3 + 3 + 3 + 3 = 15$.

Dividing (by whole numbers) gives a smaller answer than the starting number, and is repeated subtraction of the same number. $20 \div 5 = 4$ is $20 - 5 - 5 - 5 - 5$.

Division is the inverse of multiplication. If $3 \times 2 = 6$, then $6 \div 2 = 3$.

Some children can be confused between the various operators. See below for practical ideas to ensure your child understands the concepts.

With secure, instant recall of number bonds and multiplication tables, your child will be much more likely to see the relationship between numbers and know which operator is needed.

How to Help Your Child have secure understanding of +, –, ×, ÷

- First check fundamental understanding. Have a pile of something such as conkers or buttons or shells or lego bricks (or even sweets!), where they all look more or less the same.
 - 1) Write down (don't say) a + calculation such as $12 + 4 =$ and ask your child to show you what that means with the conkers. They should pick up 12, then pick up 4 and combine the two piles to make 16.
 - 2) Next write down (don't say) a – calculation such as $12 - 4 =$ and ask your child to show you what it means with the conkers. They pick up a pile of 12, then remove and discard 4 to leave 8.
 - 3) Next write down (don't say) a × calculation such as $12 \times 4 =$ and ask your child to show you what it means with the conkers. They should pick up groups of 4 conkers until they have picked up 12 groups (or groups of 12 conkers until they have picked up 4 groups), then put all the groups together to make 48.
 - 4) Finally write down (don't say) a ÷ calculation such as $12 \div 4 =$ and ask you child to show you what it means. They should pick up 12 conkers and either share them between 4 people, or take out groups of 4 conkers, until there are none left. They should be able to tell you that the answer is 3, either because each person has 3, or because they have taken out 3 groups of 4.

At the end, look at the answers to all 4 calculations. Discuss which operators give bigger answers and which give smaller answers.

- If, as a family, you enjoy playing board games, there is an old DK game 'NumberQuest'. This game uses all 4 operators with smallish numbers. It is not made any more but you could use Mrs. Bossanyi's simplified version, called 'Finker Frog', with 4 ordinary dice and counters or lego bricks in 2 colours (for 2 players), or 3 colours (for 3 players).