



MATHEMATICS



N.S. Yr. 3 P.49

Understand division

Equipment

Paper, pencil, ruler
Counters, etc useful
Number line

MathSphere

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Concepts

The year 3 work on division builds on the foundations built in year 2. Again, division can be seen in two ways:

1. Sharing equally

eg 8 bars of chocolate are shared between 2 people.
How many does each person get?

2. Grouping, or repeated subtraction

In the same way that multiplication can be seen as repeated addition, so division can be seen as repeated subtraction.

Eg 8 divided by 2, or $8 \div 2$, can be seen as how many twos in eight?

Children will still need practical apparatus to help them understand and work out division questions. Hopping along a number line is especially helpful.

The idea that dividing a whole number by one will leave the number the same is introduced.

Also, in discussion, the idea that you can not reverse division should be introduced; in other words $12 \div 2$ is not the same as $2 \div 12$.

Understanding that division is the reverse of multiplication is very important and children need a lot of work in making sums up, having been given some information:

Eg of $2 \times 6 = 12$ then two division sums can be made from this
 $12 \div 6$ and $12 \div 2$.

It is better to keep working with tables that children are familiar with, especially 2s, 5s and 10s, although others can be used when hopping along a number line.

The term multiple is also introduced in year 2.

Dividing by one

What happens when you divide by one?



Well, 8 sweets shared
between one ratty means I
get all of them!

How many ones in 8 ?
Err, 8 I think!



When you divide a whole number by one, the number does not change.

Try these:

1. $8 \div 1 = \square$

2. $7 \div 1 = \square$

3. $6 \div \square = 6$

4. $4 \div \square = 4$

5. $\square \div 1 = 7$

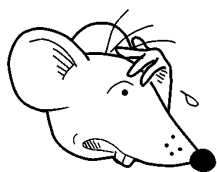
6. $\square \div 1 = 2$

7. $6 \div \square = 6$

8. $5 \div \square = 5$

9. $9 \div \square = 9$

10. $10 \div \square = 10$



Division

Did you know that division is the reverse of multiplication?
This makes life much simpler, honestly!

If you know that $6 \times 2 = 12$ then you can make two division sums:

$$12 \div 6 = 2 \quad \text{and} \quad 12 \div 2 = 6$$

Make two division sums from these multiplications:

1. $5 \times 2 = 10$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

2. $4 \times 3 = 12$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

3. $5 \times 8 = 40$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

Division

Some more reversing – make sure you are looking where you are going!

If you know that $5 \times 2 = 10$ then you can make two division sums:

$$10 \div 5 = 2 \quad \text{and} \quad 10 \div 2 = 5$$

Make two division sums from these multiplications:

1. $3 \times 5 = 15$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

2. $7 \times 2 = 14$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

3. $9 \times 5 = 45$

and

$$\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$$

Division

Make two division sums from these multiplications:

1. $6 \times 4 = 24$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

2. $3 \times 7 = 21$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

3. $10 \times 4 = 40$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

4. $6 \times 5 = 30$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

5. $7 \times 4 = 28$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

Division

Make two division sums from these multiplications:

1. $8 \times 4 = 32$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

2. $2 \times 7 = 14$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

3. $10 \times 6 = 60$

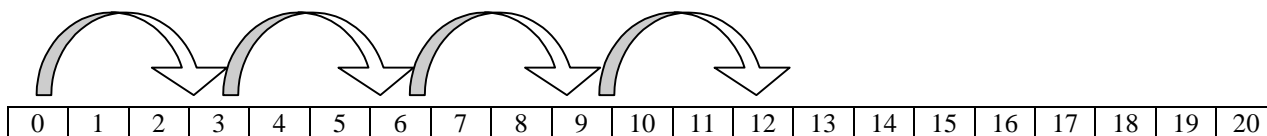
and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

4. $9 \times 5 = 45$

and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

5. $8 \times 10 = 80$

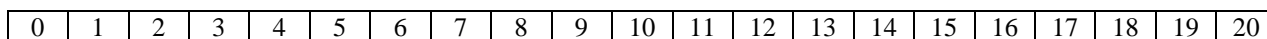
and $\begin{array}{ccc} \square & \div & \square = \square \\ \square & \div & \square = \square \end{array}$

Division by counting hops

Use the number line to find the answers to these division sums.

Eg How many hops of 3 are needed to reach 12?

4



1. How many hops of 2 are needed to reach 10 ?

2. How many hops of 3 are needed to reach 9 ?

3. How many 4s make 12 ?

4. How many 3s make 12 ?

5. How many 5s make 20 ?

6. How many 2s make 14 ?

7. How many 4s make 20 ?

Division by counting hops

Use the number line to find the answers to these division sums.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

1. How many hops of 2 are needed to reach 8?

2. How many hops of 3 are needed to reach 12 ?

3. How many 4s make 16 ?

4. How many 3s make 6 ?

5. How many 5s make 15 ?

6. How many 2s make 16 ?

7. How many 4s make 4 ?

8. How many 10s make 20 ?

Division problems

1. Share 16 sweets between two children.

2. Share 21 sweets between three children.

3. Divide 25 by 5

4. Divide 90 by 10

5. How many 5s make 45 ?

6. How many 10s make 70 ?

7. How many 5p coins do you get for 45p ?

8. How many 10p coins do you get for 80p ?

9. How many 5 m lengths can you cut
from 30 m of wire ?

10. How many 4 cm lengths can you cut
from 24 cm of rope ?

Division problems

1. Share 18 sweets between two children.

2. Share 27 sweets between three children.

3. Divide 35 by 5

4. Divide 80 by 10

5. How many 5s make 50 ?

6. How many 10s make 10 ?

7. How many 5p coins do you get for 30p ?

8. How many 10p coins do you get for 60p ?

9. How many 5 m lengths can you cut
from 35 m of wire ?

10. How many 4 m lengths can you cut
from 40 m of rope ?

Multiples

A multiple is a number produced by multiplying a starting number by another whole number.

20, 30, 40 and
50 are all
multiples of 10.

Think of it as the
answers in your
times tables.



Tick \checkmark for yes, cross \times for no.

1. Is 10 a multiple of 2 ?
2. Is 17 a multiple of 2 ?
3. Is 12 a multiple of 3 ?
4. Is 24 a multiple of 5 ?
5. Is 15 a multiple of 5 ?
6. Is 15 a multiple of 3 ?
7. Is 44 a multiple of 10 ?
8. Is 6 a multiple of 3 ?
9. Is 50 a multiple of 10 ?
10. Is 19 a multiple of 2 ?

☐☐☐☐☐☐☐☐☐☐

Division sums

I would use a
0 – 100 number
line to hop along.

Try these:

1. $16 \div 2 = \square$

2. $25 \div 5 = \square$

3. $22 \div 2 = \square$

4. $45 \div 5 = \square$

5. $70 \div 10 = \square$

6. $35 \div 5 = \square$

7. $14 \div \square = 2$

8. $10 \div \square = 10$

9. $18 \div \square = 3$

10. $44 \div \square = 4$

11. $26 \div 2 = \square$

12. $27 \div 3 = \square$

Division sums

You might find a
0 – 100 number
line really useful.



Try these:

1. $28 \div 2 = \square$

2. $24 \div 6 = \square$

3. $18 \div 9 = \square$

4. $15 \div 3 = \square$

5. $12 \div 4 = \square$

6. $35 \div 7 = \square$

7. $18 \div \square = 2$

8. $50 \div \square = 10$

9. $27 \div \square = 3$

10. $36 \div \square = 4$

11. $9 \div 3 = \square$

12. $45 \div 9 = \square$

Answers**Page 3**

1. 8 2. 7 3. 1 4. 1 5. 7 6. 2 7. 1 8. 1 9. 1 10. 1

Page 41. $10 \div 5 = 2$ and $10 \div 2 = 5$ 2. $12 \div 4 = 3$ and $12 \div 3 = 4$ 3. $40 \div 8 = 5$ and $40 \div 5 = 8$ **Page 5**1. $15 \div 5 = 3$ and $15 \div 3 = 5$ 2. $14 \div 7 = 2$ and $14 \div 2 = 7$ 3. $45 \div 9 = 5$ and $45 \div 5 = 9$ **Page 6**1. $24 \div 6 = 4$ and $24 \div 4 = 6$ 2. $21 \div 7 = 3$ and $21 \div 3 = 7$ 3. $40 \div 10 = 4$ and $40 \div 4 = 10$
4. $30 \div 6 = 5$ and $30 \div 5 = 6$ 5. $28 \div 7 = 4$ and $28 \div 4 = 7$ **Page 7**1. $32 \div 8 = 4$ and $32 \div 4 = 8$ 2. $14 \div 7 = 2$ and $14 \div 2 = 7$ 3. $60 \div 10 = 6$ and $60 \div 6 = 10$
4. $45 \div 9 = 5$ and $45 \div 5 = 9$ 5. $80 \div 8 = 10$ and $80 \div 10 = 8$ **Page 8**

1. 5 2. 3 3. 3 4. 4 5. 4 6. 7 7. 5

Page 9

1. 4 2. 4 3. 4 4. 2 5. 3 6. 8 7. 1 8. 2

Page 10

1. 8 2. 7 3. 5 4. 9 5. 9 6. 7 7. 9 8. 8 9. 6 10. 6

Page 11

1. 9 2. 9 3. 7 4. 8 5. 10 6. 1 7. 6 8. 6 9. 7 10. 10

Page 12

1. Yes 2. No 3. Yes 4. No 5. Yes 6. Yes 7. No 8. Yes 9. Yes 10. No

Page 131. 8 2. 5 3. 11 4. 9 5. 7 6. 7
7. 7 8. 1 9. 6 10. 11 11. 13 12. 9**Page 14**1. 14 2. 4 3. 2 4. 5 5. 3 6. 5
7. 9 8. 5 9. 9 10. 9 11. 3 12. 5