

Reasoning and Problem Solving

Step 8: 6 Times Table and Division Facts

National Curriculum Objectives:

Mathematics Year 4: (4N1) [Count in multiples of 6, 7, 9, 25 and 1,000](#)

Mathematics Year 4: (4C6a) [Recall multiplication division facts for multiplication tables up to \$12 \times 12\$](#)

Mathematics Year 4: (4C6b) [Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain if a statement is correct using known facts of the 6 times table up to 12×6 to derive division facts. Also includes multiplying by 10. Pictorial support included.

Expected Explain if a statement is correct using known facts of the 6 times table up to 12×6 to derive division facts. Also includes multiplying by 10 and 100.

Greater Depth Explain if a statement is correct using known facts of the 6 times table up to 12×6 to derive division facts. Also includes using non-standard multiples, such as 24×6 ($12 \times 6 \times 2$) and some two-step problems.

Questions 2, 5 and 8 (Reasoning)

Developing Prove how many groups are needed using known facts of the 6 times table up to 12×6 . Also includes multiplying by 10. Pictorial support included.

Expected Prove how many groups are needed using known facts of the 6 times table up to 12×6 . Also includes multiplying by 10 and 100.

Greater Depth Prove how many groups are needed using known facts of the 6 times table up to 12×6 to derive division facts. Also includes using non-standard multiples, such as 24×6 ($12 \times 6 \times 2$) and some two-step problems.

Questions 3, 6 and 9 (Problem Solving)

Developing Use clues to match numbers to statements using known facts of the 6 times table up to 12×6 . Also includes multiplying by 10. Pictorial support included.

Expected Use clues to match numbers to statements using known facts of the 6 times table up to 12×6 . Also includes multiplying by 10 and 100.

Greater Depth Use clues to match numbers to statements using known facts of the 6 times table up to 12×6 to derive division facts. Also includes using non-standard multiples, such as 24×6 ($12 \times 6 \times 2$) and some two-step problems.

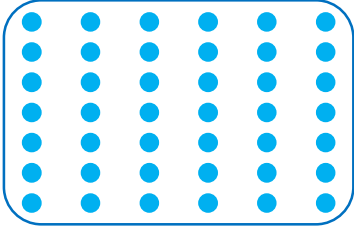
More [Year 4 Multiplication and Division](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

6 Times Table and Division Facts

6 Times Table and Division Facts

1a. Jamal uses the image below to help him calculate $42 \div 6$.



He says,



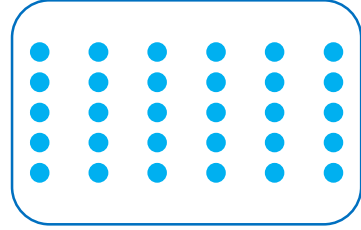
$42 \div 6 = 6$ because there are six columns.

Is Jamal correct? Explain your answer.



R

1b. Amanda uses the image below to help her calculate $30 \div 6$.



She says,



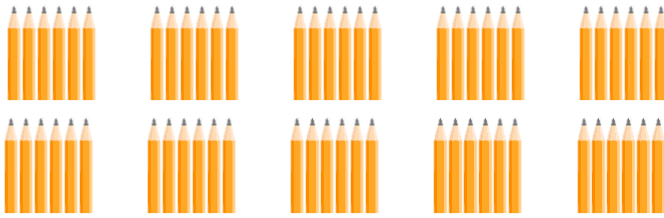
$30 \div 6 = 5$ because there are 6 groups of 5.

Is Amanda correct? Explain your answer.



R

2a. Betty needs 62 pencils for her art club. Pencils are sold in packs of 6.



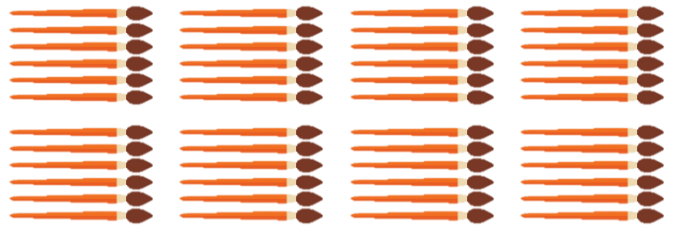
Betty buys ten packs of six pencils.

Has she bought enough pencils for her club? Prove it.



R

2b. Ruby needs 51 paintbrushes for her craft workshop. Paintbrushes are sold in packs of 6.



Ruby buys eight packs of paintbrushes.

Has she bought enough paintbrushes for her workshop? Prove it.



R

3a. Match the children to the correct representations of multiples of 6.



Ava

My number is greater than 24 but less than 6×8 .



Rex

My number is less than 60 but greater than 40. It has a digit sum of 9.

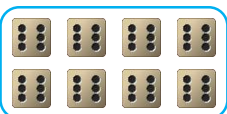
A.



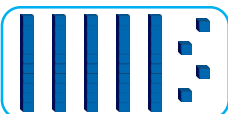
B.



C.



D.



PS



3b. Match the children to the correct representations of multiples of 6.



Nathan

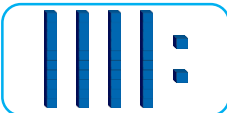
My number is less than 50 but more than 30. It has a digit sum of 6.



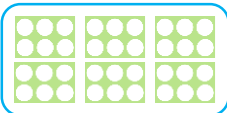
Sophia

My number is greater than 6×8 but less than 6×12 . My number is also a multiple of 10.

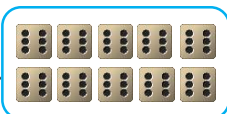
A.



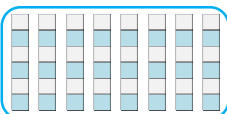
B.



C.



D.



PS



6 Times Table and Division Facts

6 Times Table and Division Facts

4a. Alfie is calculating $660 \div 60$.

He says,



Six lots of 60 make 660.

Is Alfie correct? Explain your answer.



R

4b. Wendy is calculating $240 \div 60$.

She says,



24 divided by 6 equals 4, so 240 divided by 60 equals 4.

Is Wendy correct? Explain your answer.



R

5a. Ivan needs 240 football stickers to fill his magazine. Stickers are sold in packs of 60.

The shop only has 3 packs of stickers. Ivan buys all the packs of stickers available at the shop.

Has he bought enough stickers to fill his magazine? Prove it.



R

5b. Kelly needs 360 stamps to complete her collection. Stamps are sold in packs of 60.

The shop has 7 packs of stamps. Kelly buys all the packs available at the shop.

Has she bought enough stamps to complete her collection? Prove it.



R

6a. Match the children to the correct multiples of 6.



Azra

My number is greater than 70×6 and has a digit sum of 9.



Kaleb

My number is equal to 6×20 .



Mia

My number is 180 less than Azra's number.



360

540

180

120

PS

6b. Match the children to the correct multiples of 6.



Rafael

My number is greater than 60×3 but less than 420.



James

My number is greater than 3×60 and has a digit sum of 3.



Chloe

My number is 120 less than Rafael's.



240

300

360

150

PS

6 Times Table and Division Facts

6 Times Table and Division Facts

7a. Sean is calculating $3 \times 6 \times 9$.

He says,



$$3 \times 6 = 18. 18 \times 10 = 180. \\ 180 - 18 = 162.$$

Is Sean correct? Explain your answer.



R

7b. Anya is calculating $3 \times 2 \times 12$.

She says,



$$3 \times 2 = 6. 6 \times 10 = 60. \\ 6 \times 2 = 12. 60 - 12 = 48.$$

Is Anya correct? Explain your answer.



R

8a. Milly and David need to save £290 altogether before they go on holiday.

Milly saves £6 each week. David's weekly savings are four times more than Milly's. There are 10 weeks until they go away.

Have they saved enough money? Prove it.



R

8b. Rachael and Elliot have a target of raising £385 altogether for their charity.

Rachael collects £60 each week. Elliot only collects half of Rachael's collection each week. They spend 5 weeks collecting sponsors.

Have they reached their target? Prove it.



R

9a. Match the children to the correct multiples of 6.



Owen

My number is less than $9 \times 6 \times 5$ but more than $30 \times 2 \times 3$.



Peter

My number is greater than 60 lots of 6 and has a digit sum of $36 \div 6$.



Jade

My number is greater than $6 \times 6 \times 10$ but less than $60 \times 3 \times 3$. It has a digit sum of 3×4 .



420

240

480

120

PS

9b. Match the children to the correct multiples of 6.



Hania

My number has a digit sum of 3×3 . It is also equal to $60 \times 3 \times 3$.



Scarlett

My number is 60 lots of 3 less than Hania's number. It has the same digit sum as Hania.



Joseph

My number is greater than $6 \times 3 \times 10$. It has a digit sum of $6 \div 2$.



360

540

120

300

PS

Reasoning and Problem Solving 6 Times Table and Division Facts

Developing

- 1a. No, Jamal is incorrect because $42 \div 6 = 7$ not 6. There are 7 lots of 6 groups.
2a. No, Betty has not bought enough pencils, because $10 \times 6 = 60$ pencils so she needs 2 more pencils.
3a. Ava – B; Rex – D

Expected

- 4a. No, Alfie is incorrect because 6 lots of 60 = 360. 11 lots of 60 = 660.
5a. No, Ivan has not bought enough stickers because $60 \times 3 = 180$. He needs 1 more packet.
6a. Ana – 540; Kaleb – 120; Mia – 360

Greater Depth

- 7a. Sean is correct because $3 \times 6 \times 9 = 162$. His calculation is correct and he has shown an efficient method of multiplying by 9 in multiplying by 10 and then subtracting 18.
8a. Yes, they have saved enough money because $6 \times 10 = £60$. $60 \times 4 = £240$. $240 + 60 = £300$. $£300 > £290$.
9a. Owen = 240; Peter: 420; Jade: 480

Reasoning and Problem Solving 6 Times Table and Division Facts

Developing

- 1b. Yes, Amanda is correct because $30 \div 6 = 5$ and there are 6 groups of 5.
2b. No, Ruby has not bought enough pencils because $8 \times 6 = 48$ so she needs 3 more pencils.
3b. Nathan – A; Sophia – C

Expected

- 4b. Wendy is correct. She has used related facts to work out the answer.
5b. Yes, Kelly has bought enough packets of stickers because $60 \times 7 = 420$. She has more than enough stamps.
6b. Rafael – 360; James – 300; Chloe – 240

Greater Depth

- 7b. Anya is incorrect because $3 \times 2 = 6$. $6 \times 12 = 72$. She should have added her totals together, rather than subtracting.
8b. Yes, they have reached their target because $60 \times 5 = £300$. $£300 \div 2 = £150$. $300 + 150 = £450$.
9b. Hania: 540; Scarlett: 360; Joseph: 300