

Reasoning and Problem Solving

Step 5: Multiply by 1 and 0

Teaching note: In this resource, images used for support are only included for calculations involving multiplying by one. Images are mathematically correct but there may be deliberate errors in the calculations, if that is the purpose of the question.

National Curriculum Objectives:

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](#)

Mathematics Year 4: (4C8) [Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as \$n\$ objects are connected to \$m\$ objects](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Use digit cards to create calculations, using knowledge of multiplying 1-digit numbers by 1, and place them in order of value. Question includes images for support.

Expected Use number cards to create calculations, using knowledge of multiplying 2-digit numbers by 1, and place them in order of value. Question includes numbers and words.

Greater Depth Use three digit cards (and knowledge of table facts up to 12×12) to create calculations multiplying three numbers together, including 1. Question includes numbers and words.

Questions 2, 5 and 8 (Reasoning)

Developing Explain which statement does not match the calculation shown, using knowledge of multiplying 1-digit numbers by 1 or 0. Question includes images for support.

Expected Explain which statement does not match the calculation shown, using knowledge of multiplying 2-digit numbers by 1 or 0. Question includes numbers, words and images for support.

Greater Depth Explain which statement does not match the calculation shown, using knowledge of multiplying three numbers together, including 1 or 0, and using table facts up to 12×12 . Question includes numbers and words.

Questions 3, 6 and 9 (Reasoning)

Developing Identify and explain the incorrect multiplication of 1 or 0, using knowledge of 1-digit numbers multiplied by 1 and 0. Question includes images for support.

Expected Identify and explain the incorrect multiplication of 1 or 0, using knowledge of 2-digit numbers multiplied by 1 and 0. Question includes numbers and words.

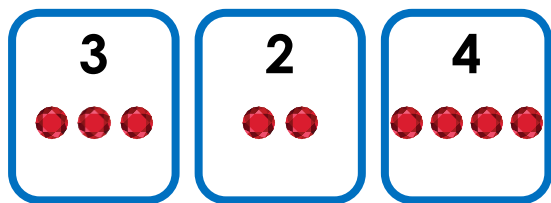
Greater Depth Identify and explain the incorrect multiplication of three numbers, including 1 or 0, using knowledge of multiplying three numbers together, and using table facts up to 12×12 . Question includes numbers and words.

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

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

Multiply by 1 and 0

1a. Use the digit cards to create three different multiplication calculations.



$$\underline{\quad} \times 1 = ?$$

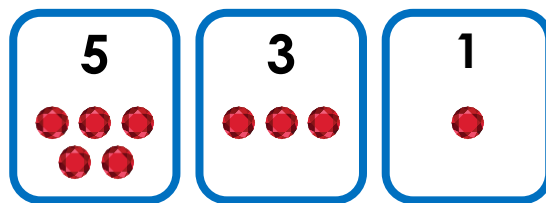
Solve the calculations and put them in order from smallest to greatest.



PS

Multiply by 1 and 0

1b. Use the digit cards to create three different multiplication calculations.



$$\underline{\quad} \times 1 = ?$$

Solve the calculations and put them in order from smallest to greatest.



PS

2a. Which statement does not match the calculation shown below?

$$6 \times 1 = 6$$

A. 6 bags with 1 sweet in each.

B. 1 game with 6 players.

C. 6 children in a room and 1 more enters.

Explain your answer.



R

2b. Which statement does not match the calculation shown below?

$$1 \times 8 = 8$$

A. 1 pencil sharpener and 8 pencils.

B. 8 camels, each with 1 hump.

C. 1 tank that contains 8 fish.

Explain your answer.



R

3a. The children below have been multiplying by 1 and 0.



Willow

$$9 \times 0 = 0.$$



Austin

$$8 \times 1 = 8.$$



Aroon

$$0 \times 6 = 6.$$

Which calculation is incorrect and why?



R

3b. The children below have been multiplying by 1 and 0.



Eadie

$$1 \times 7 = 7.$$



Gary

$$6 \times 1 = 1.$$



Robyn

$$0 \times 3 = 3.$$

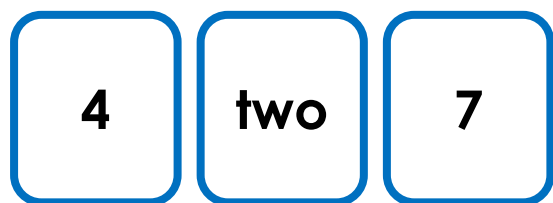
Which calculation is incorrect and why?



R

Multiply by 1 and 0

4a. Use the number cards to create different multiplication calculations.



$$\underline{\quad} \times 1 = ?$$

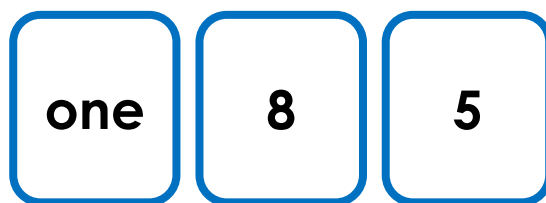
Solve the calculations and put them in order from smallest to greatest.



PS

Multiply by 1 and 0

4b. Use the number cards to create different multiplication calculations.



$$\underline{\quad} \times 1 = ?$$

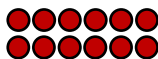
Solve the calculations and put them in order from smallest to greatest.



PS

5a. Which statement does not match the calculation shown below?

$$12 \times 1 = 12$$



A.
Twelve animals in one room.

B.
One drawer with twelve scarves in.

C.
Twelve children who all have one friend.

Explain your answer.



R

5b. Which statement does not match the calculation shown below?

$$1 \times 16 = 16$$



A.
Sixteen coins in one purse.

B.
16 people who all have one pet.

C.
1 book with sixteen pages in.

Explain your answer.



R

6a. The children below have been multiplying by one and zero.



Ethan

Seventeen times by one equals seventeen.



Martha

Twenty-nine multiplied by zero equals twenty-nine.



Owen

$$34 \times 0 = 0.$$

Which calculation is incorrect and why?



R

6b. The children below have been multiplying by one and zero.



Tony

One multiplied by forty-two equals forty-two.



Fred

Thirty-seven multiplied by zero equals zero.



Erin

$$41 \times 0 = 41.$$

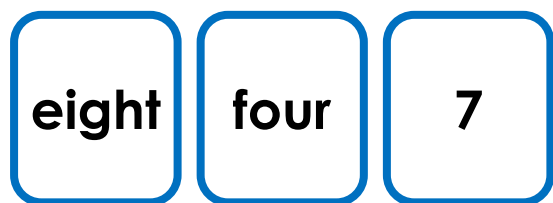
Which calculation is incorrect and why?



R

Multiply by 1 and 0

7a. Use the number cards to create different multiplication calculations.



$$\underline{\quad} \times \underline{\quad} \times 1 = ?$$

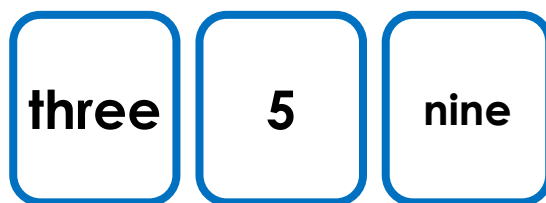
Solve the calculations and put them in order from smallest to greatest.



PS

Multiply by 1 and 0

7b. Use the number cards to create different multiplication calculations.



$$\underline{\quad} \times \underline{\quad} \times 1 = ?$$

Solve the calculations and put them in order from smallest to greatest.



PS

8a. Which statement does not match the calculation shown below?

$$9 \times 8 \times 1 = 72$$

A.
9 boys with eight pens and 1 pencil case each.

B.
Nine girls with 8 books and each buys 1 more.

C.
9 spiders with eight legs in one nest.

Explain your answer.



R

8b. Which statement does not match the calculation shown below?

$$4 \times 6 \times 1 = 24$$

A.
Four adults with six drinks and each buys one more.

B.
6 puppies with 4 legs in one bed.

C.
4 ladybirds with six spots land on one flower.

Explain your answer.



R

9a. The children below have been multiplying by one and zero.



Ruby

seven times six, multiplied by zero, equals forty-two.



Peter

$$9 \times 9 \times 1 = 81.$$



Dara

twelve multiplied by one, times three, equals thirty-six.

Which calculation is incorrect and why?



R

9b. The children below have been multiplying by one and zero.



Ethan

forty-five multiplied by one equals forty-five.



Martha

eleven multiplied by two, times by zero, equals twenty-two.



Bea

$$3 \times 5 \times 0 = 0.$$

Which calculation is incorrect and why?



R

Reasoning and Problem Solving Multiply by 1 and 0

Developing

- 1a. $2 \times 1 = 2$; $3 \times 1 = 3$; $4 \times 1 = 4$
2a. Statement C is does not match: the calculation would be $6 + 1 = 7$, not $6 \times 1 = 6$.
3a. Aroon is incorrect: $0 \times 6 = 0$, not 6.

Expected

- 4a. Various answers, for example:
 $24 \times 1 = 24$; $27 \times 1 = 27$; $42 \times 1 = 42$;
 $47 \times 1 = 47$; $72 \times 1 = 72$; $74 \times 1 = 74$
5a. Statement C does not match: the calculation would be $12 \times 2 = 24$, not $12 \times 1 = 12$.
6a. Martha is incorrect: $29 \times 0 = 0$, not 29.

Greater Depth

- 7a. Various answers, for example:
 $7 \times 4 \times 1 = 28$; $4 \times 7 \times 1 = 28$;
 $4 \times 8 \times 1 = 32$; $8 \times 4 \times 1 = 32$;
 $8 \times 7 \times 1 = 56$; $7 \times 8 \times 1 = 56$
8a. Statement B does not match: the calculation would be $9 \times (8+1) = 81$, not $9 \times 8 \times 1 = 72$.
9a. Ruby is incorrect: $7 \times 6 \times 0 = 0$, not 42.

Reasoning and Problem Solving Multiply by 1 and 0

Developing

- 1b. $1 \times 1 = 1$; $3 \times 1 = 3$; $5 \times 1 = 5$
2b. Statement A does not match: the calculation would be $1 + 8 = 9$, not $1 \times 8 = 8$.
3b. Robyn is incorrect: $0 \times 3 = 0$, not 3.

Expected

- 4b. Various answers, for example:
 $15 \times 1 = 15$; $18 \times 1 = 18$; $51 \times 1 = 51$;
 $58 \times 1 = 58$; $81 \times 1 = 81$; $85 \times 1 = 85$
5b. Statement B does not match: the calculation would be $2 \times 16 = 32$, not $1 \times 16 = 16$.
6b. Erin is incorrect: $41 \times 0 = 0$, not 41.

Greater Depth

- 7b. Various answers, for example:
 $3 \times 5 \times 1 = 15$; $5 \times 3 \times 1 = 15$;
 $3 \times 9 \times 1 = 27$; $9 \times 3 \times 1 = 27$;
 $5 \times 9 \times 1 = 45$; $9 \times 5 \times 1 = 45$
8b. Statement A does not match: the calculation would be $4 \times (6 + 1) = 28$, not $4 \times 6 \times 1 = 24$.
9b. Martha is incorrect: $11 \times 2 \times 0 = 0$, not 22.