Additional Challenges

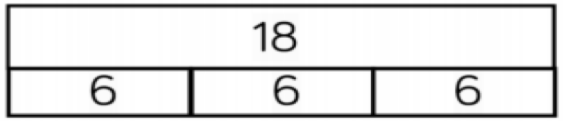
1.

Jack has 18 seeds.

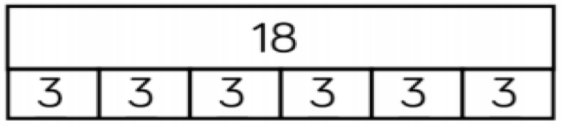
He plants 3 seeds in each pot.

Which bar model matches the problem?

A



B



Explain your choice.

2.

If $5 \times 3 = 15$, which number sentences would find the answer to 6×3?

- $5 \times 3 + 6$
- $5 \times 3 + 3$
- $15 + 3$
- $15 + 6$
- 3×6

Explain how you know.

Additional Challenges

3.

I have forgotten what 4×4 is.

Jack says,
"The answer is more than 3×4"

Complete the calculation to prove this.
$4 \times 4 = 3 \times 4 + \_\_$

Mo says,
"The answer is 4 less than 5×4"

Complete the calculation to prove this.
$4 \times 4 = \_\_ \times 4 - \_\_$

Teddy says,
"The answer is double 2×4"

Complete the calculation to prove this.
$4 \times 4 = \_\_ \times 4 \times \_\_$

Whose idea do you prefer? Why?

4.

Which of the word problems can be solved using $12 \div 4$?

There are 12 bags of sweets with 4 sweets in each bag.
How many sweets are there altogether?

A rollercoaster carriage holds 4 people.
How many carriages are needed for 12 people?

I have 12 crayons and share them equally between 4 people.
How many crayons does each person receive?

I have 12 buns and I give 4 to my brother.
How many do I have left?

Explain your reasoning for each.

Additional Challenges

5.

Five children are playing a game.

They score 4 points for every bucket they knock down.

Mo	16
Eva	28
Tommy	12
Amir	32
Dora	8

How many buckets did they knock down each?
How many buckets did they knock down altogether?
How many more buckets did Eva knock down than Mo?

6.

All the numbers in the 8 times table are even.

Explain why

On a blank hundred square, colour multiples of 8 red and multiples of 4 blue.

Always, Sometimes, Never

- Multiples of 4 are also multiples of 8
- Multiples of 8 are also multiples of 4

Additional Challenges Answers

1.

Jack has 18 seeds.

He plants 3 seeds in each pot.

Which bar model matches the problem?

A

18		
6	6	6

B

18					
3	3	3	3	3	3

Explain your choice.

Bar model B matches the problem because Jack plants 3 seeds in each pot, therefore he will have 6 groups (pots), each with 3 seeds.

2.

If $5 \times 3 = 15$, which number sentences would find the answer to 6×3?

- $5 \times 3 + 6$
- $5 \times 3 + 3$
- $15 + 3$
- $15 + 6$
- 3×6

Explain how you know.

$5 \times 3 + 3$ because one more lot of 3 will find the answer.

$15 + 3$ because adding one more lot of 3 to the answer to 5 lots will give me 6 lots.

3×6 because $3 \times 6 = 6 \times 3$ (because multiplication is commutative).

3.

I have forgotten what 4×4 is.

Jack says,
"The answer is more than 3×4"

Complete the calculation to prove this.
$4 \times 4 = 3 \times 4 + \_\_$

Mo says,
"The answer is 4 less than 5×4"

Complete the calculation to prove this.
$4 \times 4 = \_\_ \times 4 - \_\_$

Teddy says,
"The answer is double 2×4"

Complete the calculation to prove this.
$4 \times 4 = \_\_ \times 4 \times \_\_$

Whose idea do you prefer? Why?

4×4
$= 3 \times 4 + 4$
$= 12 + 4$
$= 16$

4×4
$= 5 \times 4 - 4$
$= 20 - 4$
$= 16$

4×4
$= 2 \times 4 \times 2$
$= 16$

4.

Which of the word problems can be solved using $12 \div 4$?

There are 12 bags of sweets with 4 sweets in each bag.
How many sweets are there altogether?

A rollercoaster carriage holds 4 people.
How many carriages are needed for 12 people?

I have 12 crayons and share them equally between 4 people.
How many crayons does each person receive?

I have 12 buns and I give 4 to my brother.
How many do I have left?

Explain your reasoning for each.

No, the calculation is $12 \times 4 = 48$ sweets

Yes, 12 is being grouped into 4s.

Yes, 12 is being shared equally into 4 groups.

No, the calculation is $12 - 4 = 8$ buns

5.

Five children are playing a game.

They score 4 points for every bucket they knock down.

Mo	16
Eva	28
Tommy	12
Amir	32
Dora	8

How many buckets did they knock down each?

How many buckets did they knock down altogether?

How many more buckets did Eva knock down than Mo?

Mo = 4 buckets.

Eva = 7 buckets.

Tommy = 3 buckets.

Amir = 8 buckets.

Dora = 2 buckets.

They knocked down 24 buckets altogether.

Eva knocked 3 more buckets down than Mo.

6.

All the numbers in the 8 times table are even.

Explain why

When you add an even number to an even number you always make an even number.
The 8 times table is repeated addition so keeps adding an even number each time.

On a blank hundred square, colour multiples of 8 red and multiples of 4 blue.

Always, Sometimes, Never

- Multiples of 4 are also multiples of 8
- Multiples of 8 are also multiples of 4

1) Sometimes, every other multiple of 4 is also a multiple of 8
The ones in between aren't because the jumps are smaller than 8
2) Always – 8 is a multiple of 4 therefore all multiples of 8 will be multiples of 4