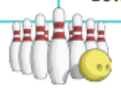
1) At holiday club, there are 2 different morning activities, 3 different afternoon activities and 3 different evening activities.

The children each choose one morning, one afternoon and one evening activity.

Morning	Afternoon	Evening
Painting	Football	Reading
Gardening	Swimming	Movie
	Bowling	Board games

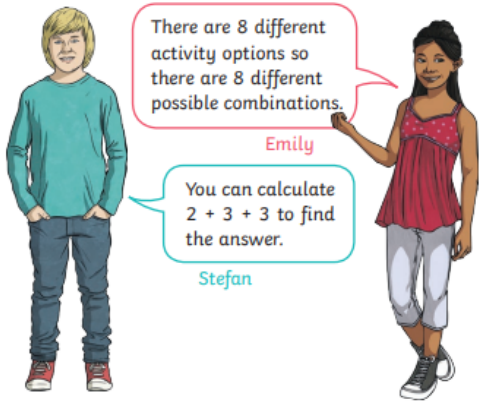


a) Write a multiplication calculation to represent the combinations.

☐ × ☐ × ☐ = ☐

b) If there were 12 different combinations of activities, how many morning, afternoon and evening activities could there be?

2) Emily and Stefan want to find how many different combinations of morning, afternoon and evening activities they could choose.



a) Can you explain the mistakes that they have made?

b) What method would help Emily to understand how she can find all the different possible combinations?

1) Henry has some hats, some jumpers and some pairs of trousers. He can make 24 different outfits.
How many hats, jumpers and pairs of trousers could he have?

2) Ben has 3 hats, 2 jumpers and 2 pairs of trousers.
Eli has 6 jumpers and 3 pairs of trousers.

Is Ben wrong or right?
Use multiplication calculations to prove it.

3) Write your own problem about different possible outfits for a partner to solve.
Remember to check that you can solve the problem yourself!

Answers

1) a) $2 \times 3 \times 3 = 18$

b) $2 \times 3 \times 2$
$1 \times 2 \times 6$
$1 \times 3 \times 4$
Accept any permutations of these calculations. For example, $2 \times 3 \times 2$ could also be written as $2 \times 2 \times 3$.

2) a) Stefan has added instead of multiplying. Emily has not understood that you have to multiply the separate groups together to find the total number of combinations.

b) Children may suggest that Emily should use a table to list the different combinations.

1) Accept any combination of three numbers that multiply together to make 24. For example:
2 hats, 2 jumpers and 6 pairs of trousers
3 hats, 4 jumpers and 2 pairs of trousers

2) Ben is wrong.
$3 \times 2 \times 2 = 12$
$6 \times 3 = 18$
Eli has more possible outfits.