

Spotlight 5: a learning check

Is not confident in recalling multiplication facts

Opportunity for: talking about multiplication and explaining images

Red race

Time 10–20 minutes

Resources

- At least one other child
- *Multiplication grid 1* (Resource sheet 35) or for Year 6 work use *Multiplication grid 2* (Resource sheet 36)
- Number cards 0–10 (Resource sheet 1)
- L-shaped card
- Different coloured pens, pencils, paper
- Cubes
- 2-cm squared paper
- Red dice, spinners

Check: does the child use key vocabulary?

- groups of
- lots of
- multiplied by
- array
- divided by
- equal groups
- sets of
- rows of
- columns

Teaching activity

‘Today we are going to play a multiplication game, **Red race**, so that you get better at knowing your multiplication tables by heart.’

Number a red dice or red spinner 1 to 6 (or whichever multiples you want the children to practise). Each player will need an array cut out of 2-cm squared paper to keep their own score. Three rows of four is a good size for this purpose.

(If you are playing a game with a red dice with numbers 5 to 10, you need to make the paper array much bigger, perhaps ten rows of six.)

- The red dice will decide the size of the column for the array in each round of the game.
- Number cards 0 to 10 (or those to suit the children) are the multiplying cards and will decide the number of columns in each round of the game.

How to play

1. Players throw the red dice and draw a card to define the size of their array. For example:



Size of columns

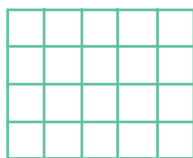


Number of columns
(the number to multiply by)



4 multiplied by 5

2. When every player has their two numbers, they write them down, for example, four multiplied by five or 4×5 . If any players have the same numbers, one of the players can throw again.
3. Each player makes an array with cubes, the right size for their dice and card numbers.
4. When all of the arrays have been made, the players take it in turns to tell everyone about their array. Everyone must listen very carefully.



I've made an array with five columns of four.

Four multiplied by five is twenty.

$4 + 4 + 4 + 4 + 4$

That is five hops of four along a number line.

If everyone agrees that the player said everything correctly, that player wins all of the cubes in one of their columns and places the cubes on their paper array.

If a player doesn't describe their array correctly, but shows some understanding, give them an appropriate number of cubes to acknowledge their efforts.

5. The first player to cover all of the squares on their paper array wins, but only if they can describe their paper array correctly! Ask the children to listen carefully.

If a child is not coping with the game, play alongside them, or play the game in cooperating pairs.

Note which numbers the child seems not to remember and give them some further experiences to practise those numbers, using any of the activities above.

Frequent repetition of numbers can aid the memory, so in one week you might ask the child just four calculations in odd moments throughout the week (and ask for help at home as well). For example, you could keep asking what is:

- three multiplied by seven?
- four multiplied by six?
- four multiplied by seven?
- three multiplied by nine?

Repeat these in any order until the child seems to remember them – but you will need to come back to these numbers in the following weeks as well.

Variations

- Instead of making the array with cubes, each player draws their array and has to make at least one other correct drawing using a different image, for example, hops along a number line or spots in groups.
- Instead of winning just one column, players keep a running total of all their numbers, so they score twenty with four multiplied by five. The player with the largest total wins. (A variation on this is that they only win if they can describe an array that would use almost all of their score, so a score of 109 might make an array of ten multiplied by ten with nine left over.)

? Can you explain to me how you would work out three multiplied by seven if you didn't have your grid and you didn't have any cubes?

? What is your favourite picture in your head for multiplication?

Learning outcomes

By the end of this set of activities, children should be able to:

- tackle related learning tasks with increased motivation and confidence;
- use and understand connected mathematical vocabulary;
- recall multiplication facts;
- use a range of strategies to work out multiplication facts;
- use their mental images and language for multiplication confidently;
- apply multiplication facts in real-life situations.