Spotlight 5: a learning check

Does not understand that 'sets of' or 'groups of' need to be subtracted to solve the problem

Opportunity for: discussing and explaining

Stick break

Time 10–20 minutes

Resources

- Cards with 'divide by two', 'divide by three', 'divide by ten' written on them
- Cube 'trains' of eight, nine, ten, twelve, fourteen, fifteen, sixteen, eighteen, twenty, thirty
- Some extra 'ten trains'
- Sticky tape
- Numbered number line to 30
- 100-square
- At least one other child to play the game

Check: does the child use key vocabulary?

divided by	pair
hops of two	sets of
subtract	groups of

Teaching activity

Explain that today they are going to play a game called **Stick break**. Show them the cube 'trains' and say that they are the 'sticks'. Explain that we will also use the following cards.

divide by two	divide by three	divide by ten

The aim of the game is to end up with no cubes at all.

Put the sticks on the table and label each one with the number of cubes. Put the cards face up on the table.

How to play

1. Players take turns to choose a stick and a number card, for example, the twenty stick and the 'divide by ten' card.

2. The players then need to work out how many sticks to break off the long stick so that there will be no cubes left. They must break up the stick and say what they are doing in a number sentence, reading the card they chose. For example: 'Twenty divided by ten makes two equal sets of ten with none left over.'

3. If everyone agrees that they have said their number sentence correctly and have worked out the numbers correctly, they win no cubes – which is a good thing! They need to try not to win any cubes! If they do win cubes they are likely to lose!

4. The stick is put back together again, and the card and stick remain on the table for others to use.

5. If a player chooses a stick and a card where they do get a remainder, they will win ten cubes. For example, if a player chose the eighteen stick and the divide by ten card, they would not be able to make equal sets of ten.

If children find the game hard, support them with counting in twos, threes and tens, with either a number line or 100-square to help.

Prompt children to listen very carefully.

When all the children have had a few turns, ask them to stop and reflect on what they have done.

? **Which sticks are good to divide by two?**

? **Why did you choose the divide by ten card for that stick?**

Variation

● Play the game with piles of coins, for example, fifty pence, thirty pence, one pound, eighteen pence, forty-five pence, seventy-five pence, and so on.

? **Do we need to make some more 'divide by' cards? Which numbers do we need?**

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;

● understand and use a range of vocabulary for division;

● recognise that when *divide by* is used, the problem can be solved by repeated subtraction;

● form mental images of arrays and number lines;

● begin to learn some division facts.