

Differentiation

Less confident learners: Give these children the support version of 'Jake's clever thoughts', which uses mostly whole numbers.

More confident learners: Give these children the extension version of the activity sheet, which uses a mixture of decimals and simple fractions.

Independent work: Distribute 'Jake's clever thoughts' activity sheet and explain that the children must use the given number facts to solve the related problems on the sheet.

Review

What can the class tell you about multiplication and division? Ensure that the children know the term 'inverse'. Ask them to complete the following: For every multiplication or division fact there are ? others that can be found. Write the following on the board: $75 \times 4 = 300$. Ask the children to use this information to work out the following: *Four children share £3. How much does each get? What is $\frac{1}{4}$ of 300? How many 75s in 300?*

Lesson 5 (Teach and practise)

Starter

Revisit and refine: Play 'place value bingo'. Ask the children to draw a 2×3 grid on their whiteboards. On the class whiteboard, write six different two-digit numbers. The children choose to multiply or divide each one mentally by 10, 100 or 1000 and write the answer in a space on their grid. Taking each number in turn, roll a dice marked $\times 10$, $\times 100$, $\times 1000$, $\div 10$, $\div 100$, $\div 1000$ to choose an operation, then ask the children to work out the answer. If the answer is on their grid, they can cross it out. Repeat until someone crosses out all of their numbers.

Main teaching activities

Whole class: Write the following place value headings on the board: TTh, Th, H, T, U, . , t, h. Mark 45 on the chart. Ask: *Where will the digits be if you multiply the 45 by 10? What will we need to put in the units column?* Repeat multiplying by 10 twice more, making sure the children understand that the number becomes ten times bigger each time and the need to use a zero as a place holder. Discuss that $\times 10 \times 10$ is the same as multiplying by 100. If necessary, put another two-digit number on the board to consolidate. Put 1700 on the chart and divide by 10. Keep dividing by 10 until you reach 1.7. Say: *If you divide by 10, then divide by 10 again, then divide by 10 a third time, this is the same as dividing by which number?* (1000) Discuss the effect with the children, ensuring that they understand that the numbers become ten times smaller each time and that there is no need, when dividing, to use a zero as a place holder for whole numbers as it has no value until decimals are reached. Repeat if necessary.

Ensure that the children understand that when multiplying by 10, 100 and 1000, digits move one, two and three places respectively to the left. When dividing by 10, 100 and 1000, digits move one, two and three places respectively to the right. Reinforce that the decimal point does not move, only the digits.

Divide the class in half. Ask one half to divide 230,000 by 10 six times. Ask the other to divide 230,000 by 100 three times. Make sure they record their answers at each stage. Compare answers and discuss the fact that dividing by 10 six times is the same as dividing by 100 three times.

Independent work: Hand out the 'Multiplying and dividing' activity sheet for children to complete individually.

Review

Key a number into the OHP calculator. Ask the children what the display will show if they multiply or divide by 10, 100 and 1000. Check understanding by asking questions, such as: *What must I do to change 27 into 2700? 761 into 7.61? Why is 36×100 the same as $36 \times 10 \times 10$?*

Differentiation

Less confident learners: Give these children the support version of 'Multiplying and dividing', where they divide and multiply only by 10 and 100.

More confident learners: Give these children the extension version of the activity sheet, where they use larger numbers.