Strengthen Activities

MISCONCEPTION

When using column addition or subtraction, children may line the numbers up from right to the left rather than according to their place value.

STRENGTHENING UNDERSTANDING

1. Write an addition number sentence on a whiteboard where the number of digits in the two addends differs, e.g. 2·4 + 6·53 =___. Ask children to estimate the answer (≈ 9).

2. Now set out this calculation in column method, misaligning digits from right to left. Work out the answer incorrectly (incorrect answer = 6·77) and ask children to compare and explain what they notice.

3. If children are struggling to notice that the digits are misaligned, ask them to make the two addends using place value counters before adding. What is the same, what is different about what they did and the column method on the board? Encourage children to see that the digits were misaligned and to use the decimal point as a reference to help identify and line up the different columns. Children correctly write out and solve the calculation.

ASSESSMENT CHECKPOINT

Can children correctly align the calculations in Q3 and 4 on Practice Book p24–25, before solving them?

RESOURCES

Whiteboards, pens, place value grid and counters, Practice Book

MISCONCEPTION

Children may not apply exchanges when adding or subtracting decimal numbers.

STRENGTHENING UNDERSTANDING

1. Show children the incorrect calculation: 0·4 + 0·7 = 0·11. Ask children to explain why they think it is correct or incorrect. Point to 0·4 and ask what this number is (4 tenths). Do the same with 0·7 (7 tenths). Using place value counters, ask: *What is 4 tenths add 7 tenths?* Encourage children to see tenths as being the 'unit'. The calculation becomes like 4 + 7 = 11, so 4 tenths + 7 tenths = 11 tenths.

2. Ask: *How do you write 11 tenths as a fraction?* ($\frac{11}{10}$) *Is this greater or smaller than 1?* (Greater than 1) Ask: *How many tenths in the incorrect answer?* (1 tenth) Identify that the incorrect answer is 11 hundredths which is smaller than 1.

3. Return to the place value counters. Ask: *You have 11 tenths, but can you write the number 11 in one column? What is the largest digit you can have in any column?* (9) *So, what must you do?* (You have to exchange.) Ask children to demonstrate the exchange of 10 tenths for 1 one. Ensure children know to record the answer as 1·1. Repeat with a similar activity for subtraction with exchange, e.g. 1·2 – 0·4.

ASSESSMENT CHECKPOINT

Can children explain the mistake in Q2 on Textbook p23?

RESOURCES

Whiteboard, pen, place value counters, Textbook

MISCONCEPTION

When multiplying decimals by 10, children may assume that they should just 'add a zero' onto the end of whatever number they start with. For example, they write the answer to 4·5 × 10 as 4·50.

STRENGTHENING UNDERSTANDING

1. Write the numbers 3·4 and 3·40 and ask children which number is bigger and how they know. Ask children to draw a place value grid and put both numbers in the grid to compare, looking at each column in turn. Establish that both numbers are the same.

2. Now write 3·4 × 10 = 3·40 and invite children to comment on it. They should be able to explain that the answer is incorrect as 3·4 and 3·40 are the same numbers. Ask children to write 3·4 in their place value grid and ask: *What does 3 ones become when you multiply by 10?* (30) Ask children to record the digit 3 in the tens column.

3. Ask: *What does 4 tenths become when you multiply by 10?* Encourage children to think of tenths as the 'unit' of the number, so if 4 × 10 = 40, then 4 tenths × 10 = 40 tenths, which is the same as 4. Model the exchange with place value counters. Write 4 in the ones column. Ask: *What did you notice? Will it always happen? Why?*

ASSESSMENT CHECKPOINT

Can children find the false statement in Q6 on Textbook, p69? Can they give true statements for × and ÷ by 10, 100, 1,000?

RESOURCES

Whiteboard, pen, place value grid and counters, Textbook