Power Maths Strengthen Activities

MISCONCEPTION

Children may think that problems can only be solved in the order in which the information is presented.

STRENGTHENING UNDERSTANDING

1. Using Q2 on Practice Book p60, give children the question sentence first and then one sentence of the information at a time, asking if they are able to use the information to given to answer the question.

2. Ask: *What piece of information would you need to use first?* Encourage children to represent the question pictorially, using bar models. Ask: *What part of the information would you draw first?* Ensure children realise that the information may be given in any order and it is up to the learner to decide which piece of information to represent first in order to solve the problem.

3. Ask children to solve the problem, justifying their representation.

ASSESSMENT CHECKPOINT

Can children represent pictorially, choosing what to draw and label first and then accurately solve Q5 on Practice Book p61?

RESOURCES

Practice Book, whiteboards, pens

MISCONCEPTION

When calculating time intervals, children may revert to familiar methods of adding and subtracting quantities, which are incorrect when working with time.

STRENGTHENING UNDERSTANDING

1. Using Q2 on Practice Book p73, read and explain the question to children, and then show them an incorrect calculation of 19:45 − 15:50 = 3:95, laid out in column method. Ask children what they notice about the answer that has been worked out. Ask: *What mistake has been made?*

2. Identify that time cannot be calculated in the usual way, as in this case, the time in minutes is not base 10. Encourage children to use the counting on method to work out the difference, using a number line and a clock face for support.

3. Ensure children remember that the minutes are exchanged to hours with 60 minutes in each hour. Give children plenty of practise to add and subtract a range of units of time.

ASSESSMENT CHECKPOINT

Can children calculate intervals of time correctly and convert between different units of time in Q4 on Practice Book p74?

RESOURCES

Practice Book, whiteboards, pens, number line, clock face

MISCONCEPTION

When ordering negative numbers, children may reason that a number such as −20 must be larger than −5 because 20 is larger than 5.

STRENGTHENING UNDERSTANDING

1. Show children the positive part of a vertical and horizontal number line. Ask: *What happens to the numbers as you move to the right/up?* (The numbers increase and so does the value.) Ask: *What happens as you move to the left/down?* (The numbers decrease and so does the value.)

2. Show the negative part of the number lines and ask children what they notice about the number line. Establish that the digits are symmetrical either side of 0. Ask again: *What happens when you move to the right/up and left/down?* Ensure children understand that the same rules apply for the negative part of the number line, i.e. that the value of the number increases when moving right/up and decreases when moving left/down.

3. Write down two negative numbers, e.g. −8 and −5. Ask: *Which number is bigger? How do you know?* Ask children to label where −5 and **−**8 would be on the number line. Remind children of the 'rules' if necessary, to understand that −5 is bigger than −8. Encourage children to see that with negative numbers, the larger the number the smaller the value of the number. Give children some more numbers to order and compare.

ASSESSMENT CHECKPOINT

Can children increase and decrease negative numbers accurately in Q2 on Practice Book p48?

RESOURCES

Prepared vertical and horizontal number lines, whiteboards, pens, Practice Book