



# Strengthen Activities

## MISCONCEPTION

**Some children may confuse finding the mean and the total, for example finding the different ways three numbers can total 11 rather than having a mean of 11.**

### STRENGTHENING UNDERSTANDING

1. Prepare a number of cubes that is a multiple of the number of children in the group. Give each child a handful of cubes to arrange into 'towers', then count and record how many each person has. Arrange the towers in ascending order and discuss who has the most and least (the range of data). Ask: *How could you find the average number of cubes in each tower?* Relate this to the meaning of mean average, establishing that if all cubes were shared equally between the children, then the mean amount would be what each child got. Demonstrate, moving cubes from the taller towers and sharing them amongst the smaller ones, so that you end up with all the towers the same height. Ask: *How many cubes does each person get? So, what is the mean average?*
2. Help children to understand that the mean can be calculated by adding up all the cubes and then sharing them equally between the number of people. Find the mean for the set of data using calculation and compare this with the answer they found by counting.
3. Ask: *If there are 3 people, how many cubes could they each have to give a mean of 11?* Let children explore possible solutions.

### ASSESSMENT CHECKPOINT

Can children describe a set of data to give a mean of 11?

### RESOURCES

Cubes, whiteboards, pens

## MISCONCEPTION

**Children may mistake the number of sections in a pie chart as the fraction, for example they may say that as there are three sections, each section is  $\frac{1}{3}$ .**

### STRENGTHENING UNDERSTANDING

1. Show a variety of shapes including circles, with some that show fractions and some that show non-equal parts. Ask children to identify the fractions and justify which shapes are not divided into fractions. Establish that fractions must be equal parts.
2. Show children the pie chart in Q2 of Textbook p136 and ask: *Is this pie chart split into thirds? Why not?*
3. Encourage children to explain, using the numbers inside the pie chart, that the part sizes are not equal so they cannot be thirds.

### ASSESSMENT CHECKPOINT

Can children identify if the pie charts are split into fractions or not in Q1 on Practice Book p102?

### RESOURCES

Prepared shapes showing fractions and non-fractions, Textbook, Practice Book

## MISCONCEPTION

**Children may confuse the vertical-axis and horizontal-axis when interpreting line graphs and may read and interpret the scales used incorrectly.**

### STRENGTHENING UNDERSTANDING

1. Give children the line graph that has no title or label from Q3 on Practice Book p115, and ask them to interpret and give you some information from it. Establish that this is not possible as you do not know what the line graph represents. Ensure children understand the importance of clear labelling, and add the labels and title in.
2. Ask children to work out what the unmarked intervals on the horizontal and vertical axes represent, explaining how they know. Ask: *Is it important to know what each interval represents? Why?* Encourage children to understand that there may well be times when the data required is between marked intervals. We cannot assume what the interval sizes are, we must be sure in order to be accurate. Give opportunities to interpret graphs and create graphs with unmarked intervals.
3. Go through some common scale marking with children. For example, scales split into two intervals between the marked intervals often going up by 0.5, 5, 50 or 500; scales split into four intervals often going up by 0.25, 2.5, 25 or 250; scales split into 5 intervals often going up by 0.2, 2, 20 or 200. Encourage children to use the known intervals to help them decide what the unmarked intervals are.

### ASSESSMENT CHECKPOINT

Can children accurately interpret the graph scale between marked intervals in Q1 on Practice Book p114?

### RESOURCES

Practice Book