



Strengthen Activities

MISCONCEPTION

Children may think translation instructions (for example, left 5) refer to the distance between the original shape and the translated image, rather than the distance between each corresponding vertex on the translated image.

STRENGTHENING UNDERSTANDING

1. Give children coordinate grids showing incorrect translations demonstrating the misconception. Ask: *There are 5 squares between the two shapes. What is wrong with that?* Establish that each vertex needs to be translated so that each corresponding vertex is moved 5 spaces to the left.
2. Draw a polygon on the playground with chalk and ask a child to stand on each vertex. Establish which way is up/down, left/right. Give translation instructions, starting with movement in one direction (x or y) before movement in two directions (x and y).
3. Encourage children to move one at a time, using one step for one unit of movement. Mark their new vertex. Once complete, join up the new vertices to check the shape is similar.

ASSESSMENT CHECKPOINT

Can children translate a shape in two directions accurately in Q2 on Practice Book p106?

RESOURCES

Incorrect translations, coordinate grids, pencils, rulers, chalk, Practice Book

MISCONCEPTION

Children may simply transfer the shape to the other side of the mirror line, rather than reflecting it.

STRENGTHENING UNDERSTANDING

1. Show children some shapes that have clearly been translated, not reflected in the mirror line. Ask: *How have each of these shapes been moved?* Establish that the shapes have been translated and not reflected.
2. Use mirrors to check the reflection. Ask: *What do you notice about the reflected shape?* Ensure children notice that it is the mirror image.
3. Give children a prepared shape (not a square or rectangle) on squared paper and model how to reflect it in the mirror line. Starting at one vertex, count the squares in a perpendicular line to the mirror line and then continue with the same number of squares beyond the mirror line. Repeat for all other vertices and join to draw the reflected shape. Check with a mirror.

ASSESSMENT CHECKPOINT

Can children reflect the shapes in the mirror line in Q4 on Practice Book p98?

RESOURCES

Incorrect reflections, mirrors, pencils, rulers, prepared shapes to reflect, Practice Book

MISCONCEPTION

Children may default to counting methods because they do not know what to add to or subtract from the coordinate.

STRENGTHENING UNDERSTANDING

1. Show a blank coordinate grid. Recap how to read and write coordinates, and what they relate to on the coordinate grid. Ask: *What do you notice about the numbers on the x -axis as you move to the right? To the left? What about the y coordinates as you move up or down?* Establish as you move to the right or up, numbers get bigger and as you move to the left or down, they get smaller.
2. Ask children to place a counter at (3,8) and then then ask: *If I move this counter 4 to the right, which value will change, the x or y value? Would the number be getting bigger or smaller if I move to the right?* Establish that the x value will become larger by 4 and $3 + 4 = 7$, so the new coordinate would be (7,8). Model and practise this, moving in a variety of directions, until children feel more confident.
3. Play a game where each child places their counter in the same place on their coordinate grid and take it in turns to give a translation instruction. Children predict where the counter will move to, and record the new position on their whiteboards. They move the counter and, if correct they get a point. Encourage them to add or subtract rather than counting squares.

ASSESSMENT CHECKPOINT

Can children accurately translate points on a coordinate grid using addition and subtraction in Q1 on Practice Book p105.

RESOURCES

Blank coordinate grids, counters, whiteboards and pens, Practice Book