

## Investigation

### Find my route

Investigate routes through a grid, multiplying and dividing by 10, 100 or 1000

- Starting with 435 trace a route through the grid, moving horizontally or vertically between boxes.
- What outcome do you get? Record it.
- Try another route.
- What outcome do you get? Record it.
- Try at least 4 different routes through the grid
- How many different outcomes can you find?

#### Example

Start at 435  
move right,  
move down,  
move down,  
move down,  
move right...END  
 $435 \div 100 \times 10 \times 100$   
 $\div 10 \times 10 = 4350$

#### Investigate

- *What are the smallest and largest possible outputs?*
- *Does the longest path have the largest output?*
- Now choose a different 3-digit starting number.

#### Challenge

Draw a route on the grid. If we follow this, what **single calculation** can replace all those we do en-route?

Answer the calculations to check.  
Repeat with another route.

What if diagonal moves were allowed?

# Investigation Resource Sheet

435	$\div 100$	$\times 10$	$\times 10$
$\div 10$	$\times 10$	$\times 100$	$\div 100$
$\div 10$	$\times 100$	$\div 100$	$\times 10$
$\times 10$	$\div 10$	$\times 10$	END