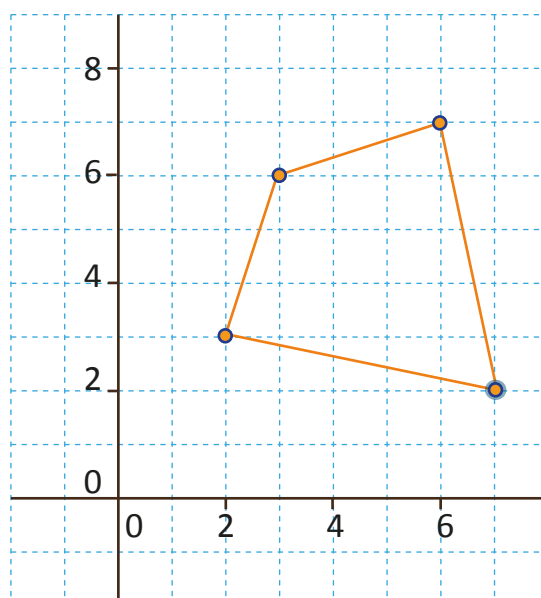


<b>Cycling co-ordinates</b>	<b>Skills practised:</b>
<i>Children use a sequence of co-ordinates to create quadrilaterals.</i>	<ul style="list-style-type: none"> <li>• Using co-ordinates</li> <li>• Recognising different types of quadrilaterals</li> </ul>
<b>Conjecture:</b> <i>It is possible to predict whether a sequence of co-ordinates will produce a square or a kite or irregular quadrilateral.</i>	
<p><b>What to do:</b>  <i>Children work individually or in pairs.</i></p> <ol style="list-style-type: none"> <li>1. Write down four single-digit numbers, e.g. 2, 3, 6, 7.</li> <li>2. Use these to produce four pairs of co-ordinates. Take the first two numbers to produce the first pair (2, 3), the second and third number to give the second pair of co-ordinates (3, 6), the third and fourth number to give the third pair of co-ordinates (6, 7) and then cycle round using the last and first numbers to give the last pair of co-ordinates (7, 2).</li> <li>3. Plot the four points, then join them together. What shape have you drawn?</li> </ol> <div data-bbox="507 958 1053 1552" data-label="Figure"> </div> <ol style="list-style-type: none"> <li>4. Now try 2, 6, 5, 1. What shape do they form this time?</li> <li>5. Now try groups of your own four numbers. See what different types of quadrilateral you can produce?</li> </ol> <p>Can you write a rule for producing kites? Can you write a rule for producing squares?</p> <p><b>CHALLENGE:</b> Do your rules work in all four quadrants?</p>	
<p><b>Aims:</b></p> <ul style="list-style-type: none"> <li>– To look for patterns and so make generalisations</li> <li>– To test conjectures</li> </ul>	<p><b>Minimum number of calculations expected</b></p> <p>N/A</p>

# Cycling co-ordinates

1. Write down four single-digit numbers, for example 2, 3, 6, 7.
2. Use these to produce four pairs of co-ordinates. Take the first two numbers to produce the first pair (2, 3), the second and third number to give the second pair of co-ordinates (3, 6), the third and fourth number to give the third pair of co-ordinates (6, 7) and then cycle round using the last and first numbers to give the last pair of co-ordinates (7, 2).
3. Plot the four points, then join them together. What shape have you drawn?



4. Now try 2, 6, 5, 1. What shape do they form this time?
5. Now try groups of your own four numbers. See what different types of quadrilateral you can produce?  
Can you write a rule for producing kites? Can you write a rule for producing squares?

## Challenge

Do your rules work in all four quadrants?