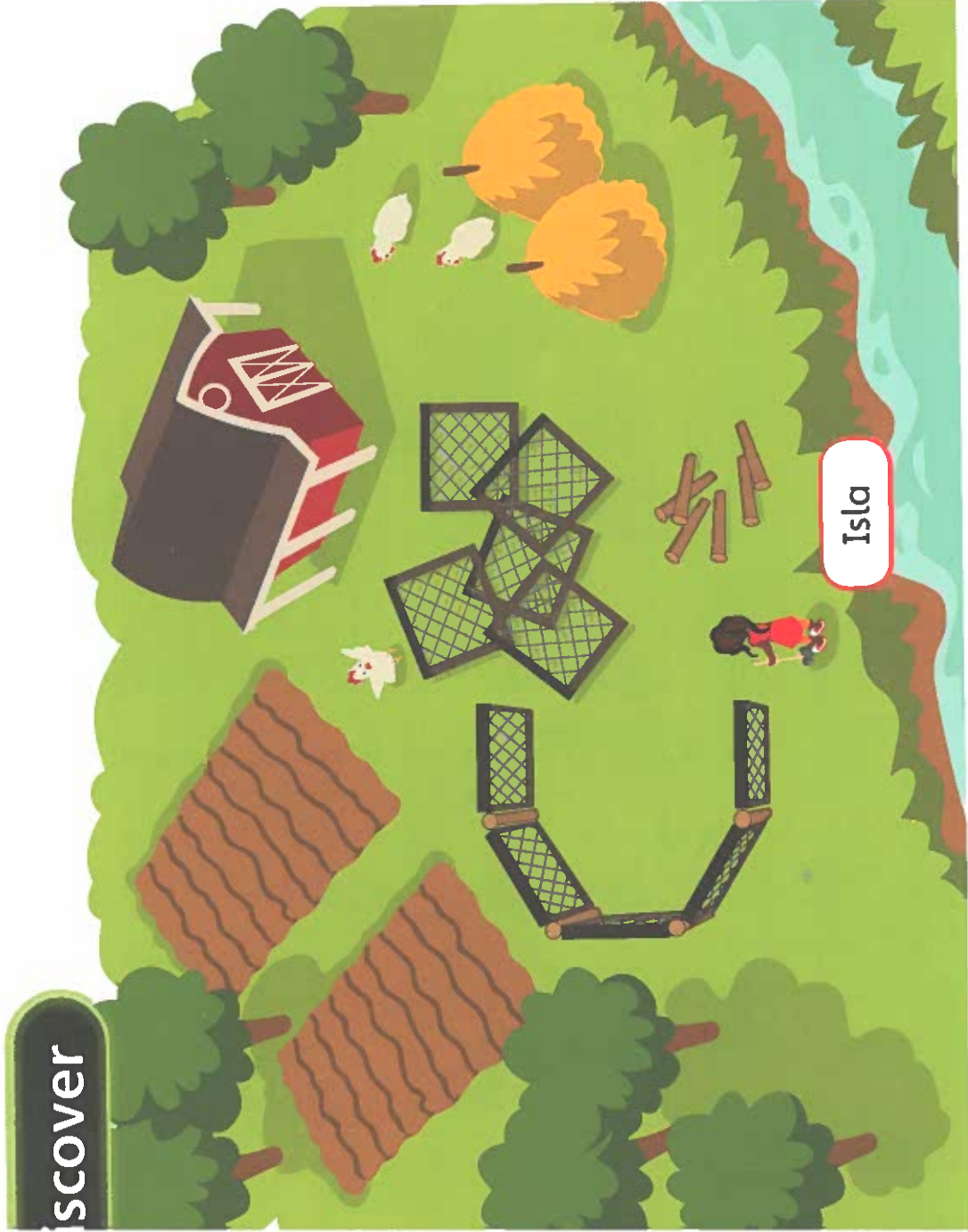


Completing a symmetric shape

Discover

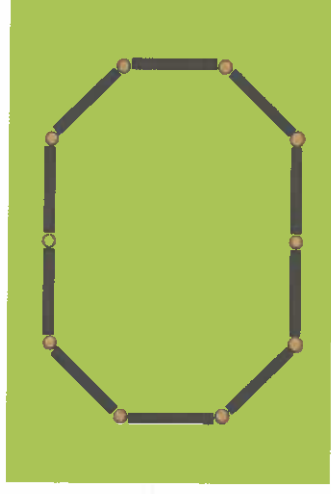


Isla is building a symmetric, octagonal pen for her chickens. She has used five pieces of fence so far.

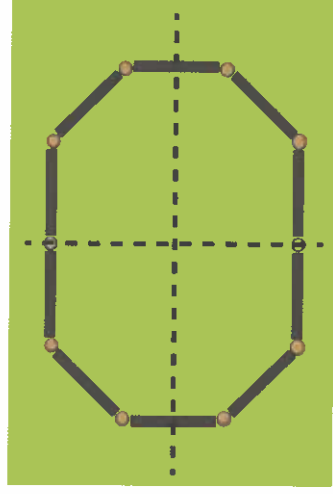
- She uses five more lengths of fence. What does her chicken pen look like? How many lines of symmetry does it have?
- Could she complete the symmetric pattern with less than five pieces of fence?

Share

- Isla's chicken pen would look like this once it has been completed with five more pieces of fence.



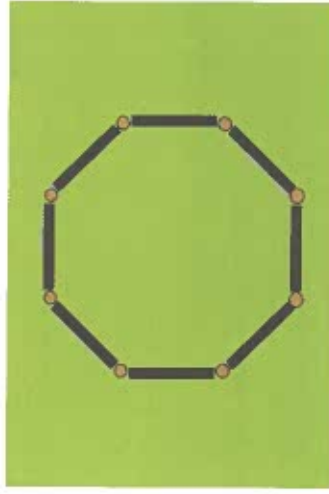
This shape has two lines of symmetry.



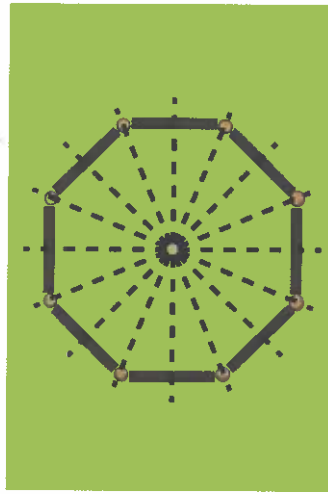
This irregular octagon has one vertical and one horizontal line of symmetry.



- Isla could complete a symmetric, octagonal pen by using only three more pieces of fence. This is what the pen would look like.

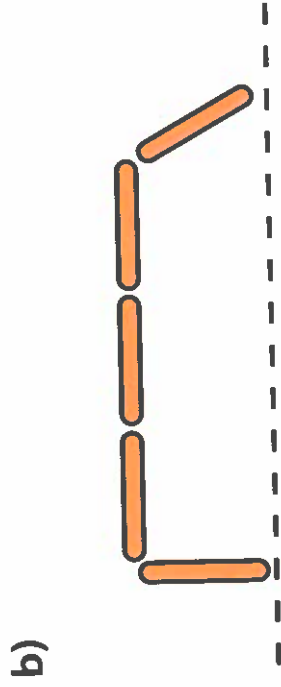
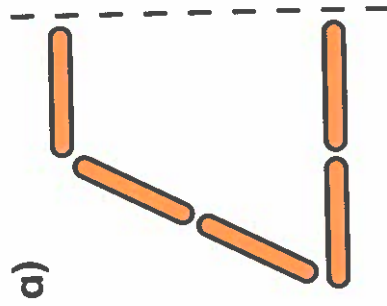


This regular octagon has 8 lines of symmetry.

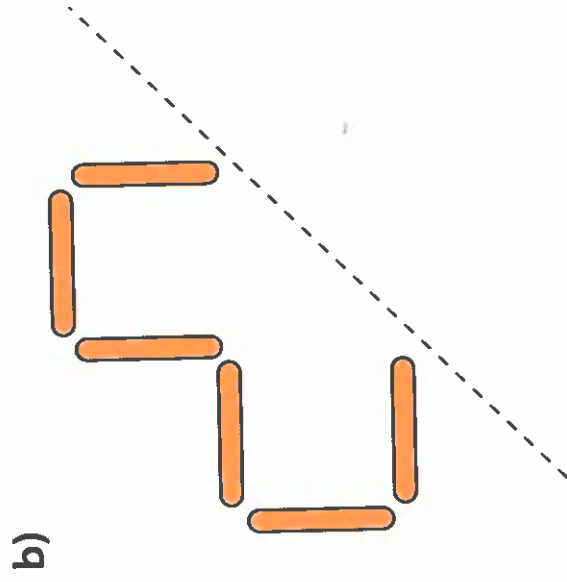
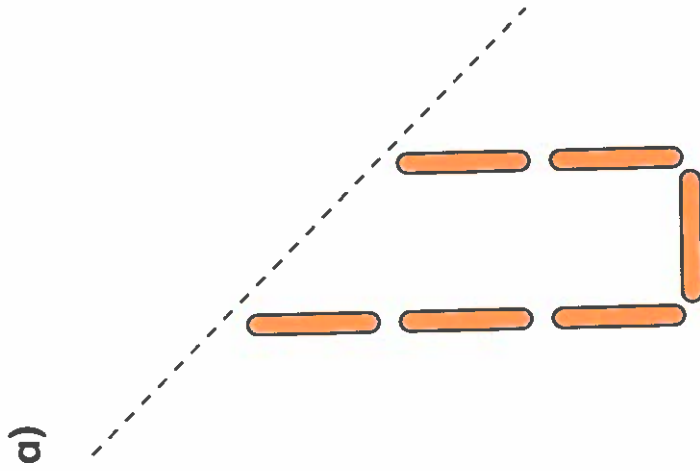


Think together

- Complete the symmetric figures using lolly sticks.



- Complete these symmetric shapes made of lolly sticks.



CHALLENGE

- Kate makes three conjectures about symmetric shapes.

Prove which are true and which are false.

Use squared paper to help you.

I can draw a quadrilateral that when reflected along one side will create a pentagon.

If half my shape has three sides then the reflected shape must be a hexagon.

If I reflect a shape the number of sides always doubles.



Kate