

You will need

- pattern blocks
- grid paper
- a ruler

Performing Translations

GOAL

Perform, describe, and identify translations of 2-D shapes.

Tyler is looking at Métis sashes to get ideas for the sash he is designing.



How can Tyler create his own design?





translation

The result of sliding a shape along a straight line



Tyler's Design

I'll make a design using the shape of the blue pattern block.

I'll create my design by sliding the pattern block, without turning it, on grid paper.

This slide is called a translation.

I'll slide the pattern block to different parts of the grid paper using different **translation rules**.



translation rule

A way of describing a translation with pictures or numbers

For example, "I translated the triangle two units left and two units up. I used the red slide arrow."



- **A.** What translation rule did Tyler use to move shape A to shape B?
- **B.** Create a translation rule that Tyler could use to move shape A to another position on the design.
- **C.** Predict where shape A will move with your new rule.
- D. Test your prediction by drawing the shape in its new position. Label it C.

Reflecting

- E. How are shapes A, B, and C the same? How are they different?
- F. What can you say about the size and shape of a polygon when you translate it?

Checking

 Janet moved shape D to shape E. What translation rule did she use?



Practising

 Which shape is a translation of shape F? How do you know?



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- **3.** a) Copy triangle J onto grid paper.
 - **b)** Translate triangle J one unit right and two units down. Label the new shape K.
 - c) Translate triangle J two units left and one unit up. Label the new shape L.

Reading Strategy Predicting

Predict the answer to each part of the question. Complete the question, and check your answers with a partner.



- **4.** Which shape shows each translation of shape M?
 - a) three units right and one unit up
 - b) two units left and two units down
- 5. a) Copy triangle R onto grid paper.
 - b) Translate triangle R to another position. Describe the translation rule.





- c) Create a different translation rule. Predict the new position of triangle R with this rule.
- d) Test your prediction by translating triangle R. Were you correct?
- **6. a)** Copy quadrilateral A onto grid paper.
 - b) Translate quadrilateral A three units to the left.
 Sketch the new shape.



- a) Identify four green triangles that are translations of the yellow triangle on the flag.
 - **b)** Describe each translation rule.
- 8. a) Give an example of a translation of a polygon in your classroom.
 - **b)** Describe the translation rule.
- a) Which shapes are translations of shape R? Explain how you know.
 - **b)** Describe each translation rule.

