

ACTIVITY 7.1

Developing Concepts

GROUP ACTIVITY

Work with a partner.

MATERIALS

- tracing paper
- pencils

Group Activity for use with Lesson 7.1

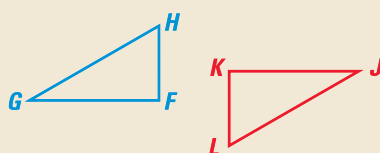
Motion in the Plane

► **QUESTION** Which types of motion in the plane maintain the congruence of a figure?

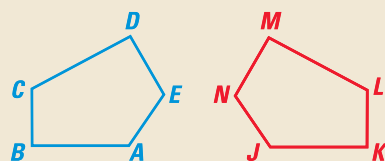
► EXPLORING THE CONCEPT

1. In the pairs of figures below, the blue figure was transformed to produce the congruent red figure. For each pair, name the corresponding sides. (For example, in part (a) \overline{FG} corresponds to \overline{KJ} .)

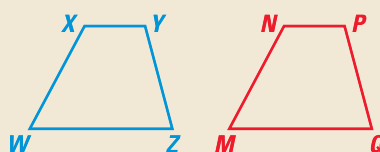
a.



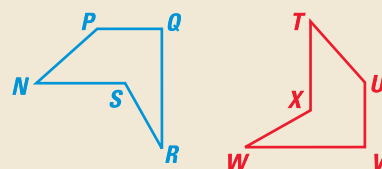
b.



c.



d.



2. For each pair above, use words such as “flip,” “slide,” and “turn” to describe how to move from the blue figure to the red figure. Tracing paper can be used to help you.

► MAKE A CONJECTURE

3. State the types of motion that preserve the congruence of a figure when it is moved in the plane.

► INVESTIGATE

- Describe the motion that moves $ABCD$ onto $EFGH$.
- Copy the figures at the right. Flip $EFGH$ over line m and name the corresponding vertices of the new figure $JKLM$. Is $EFGH$ congruent to $JKLM$?
- Describe the motion that maps $ABCD$ onto $JKLM$. Is $ABCD$ congruent to $JKLM$?
- Can one “flip” be used to move $ABCD$ onto $JKLM$? Explain why or why not.

