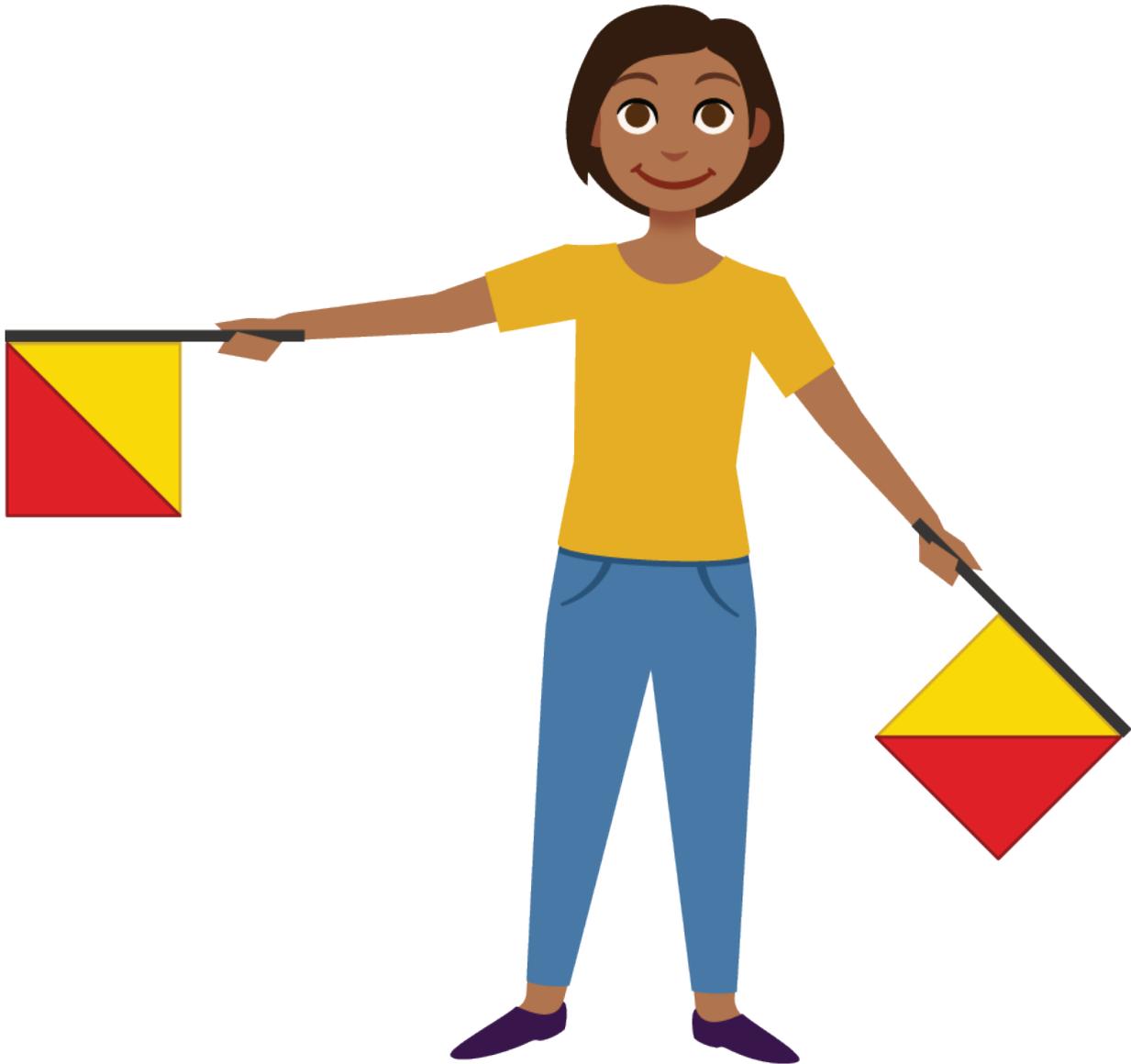# Unit 1 Lesson 13: Incorporating Rotations

1 Left to Right (Warm up)
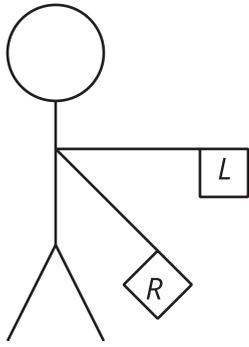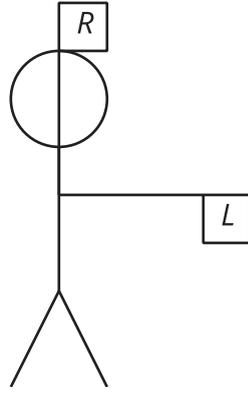
Images for Launch

Student Task Statement

The semaphore alphabet is a way to use flags to signal messages. Here's how to signal the letters Z and J. For each, precisely describe a rotation that would take the left hand flag to the right hand flag.
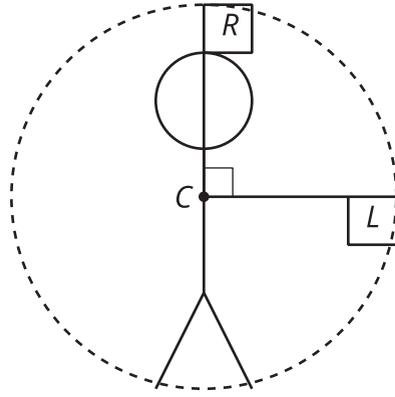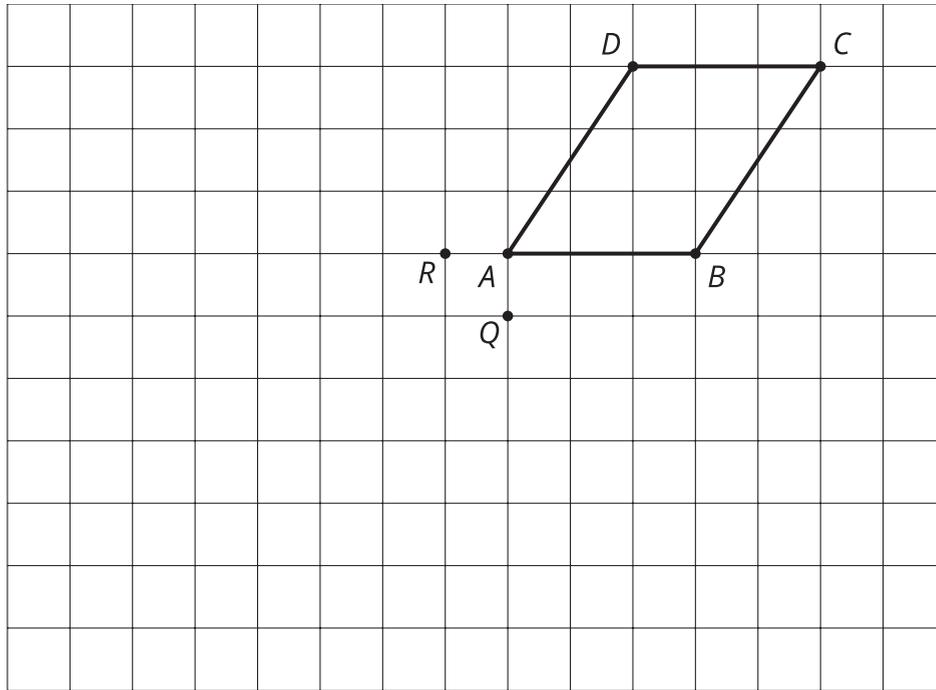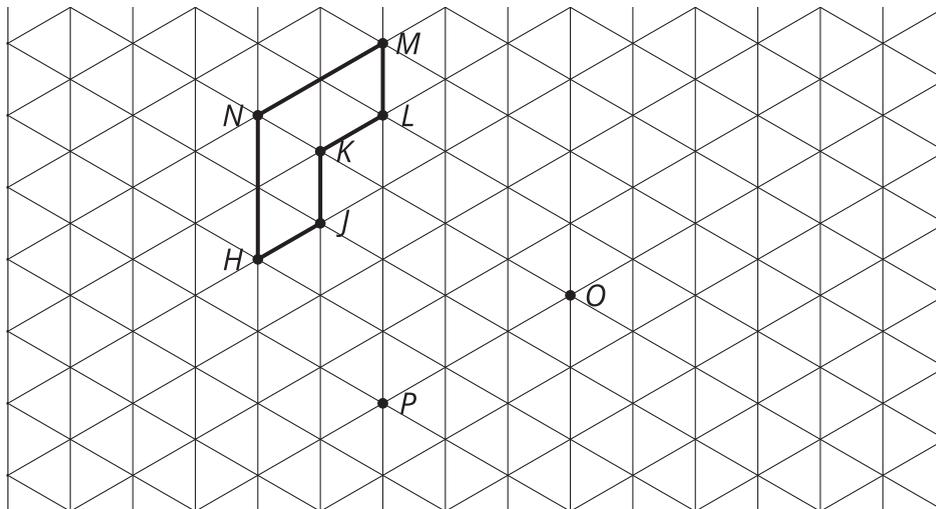
Z

J

Activity Synthesis

2 Turning on a Grid

Student Task Statement

1. Rotate $ABCD$ 90 degrees clockwise around Q.

2. Rotate $ABCD$ 180 degrees around R.

3. Rotate $HJKLMN$ 120 degrees clockwise around O.

4. Rotate $HJKLMN$ 60 degrees counterclockwise around P.

3 Translate, Rotate, Reflect

Student Task Statement

Mai suspects triangle ABC is congruent to triangle DEF. She thinks these steps will work to show there is a rigid transformation from ABC to DEF.
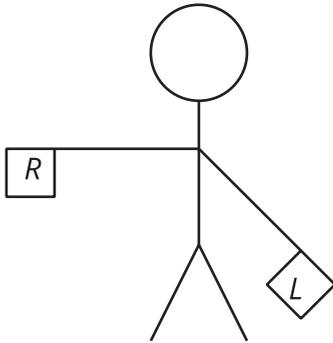
- Translate by directed line segment v.

- Rotate the image ____ degrees clockwise around point D.

- Reflect that image over line DE.

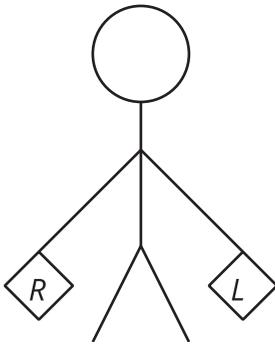Draw each image and determine the angle of rotation needed for these steps to take ABC to DEF.
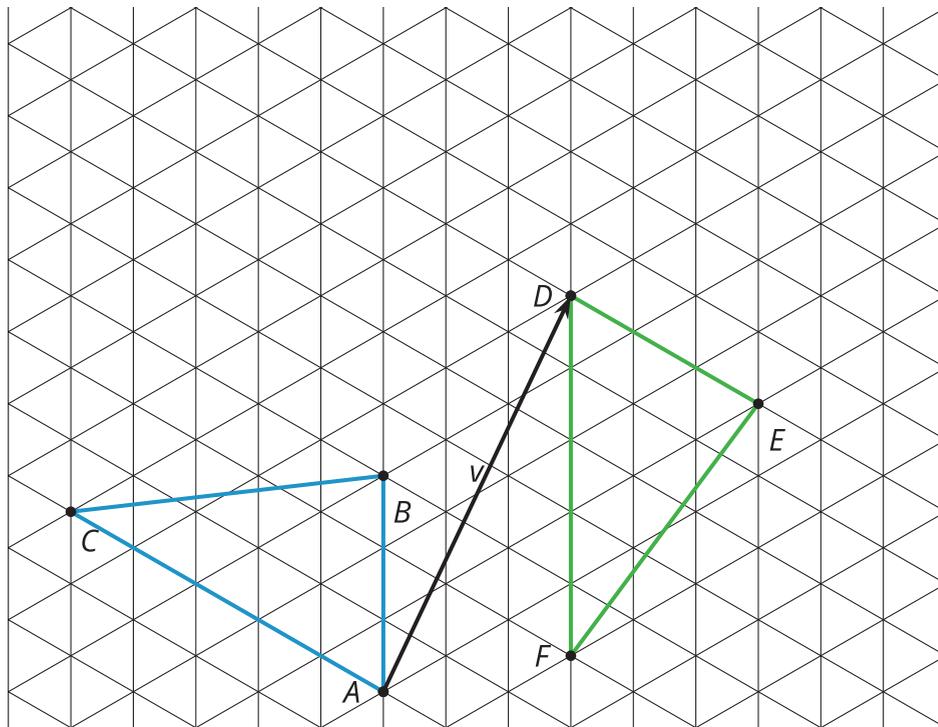
Images for Activity Synthesis

S

N

O