

# TRANSLATION

## DEFINITION-WRITING

### ACTIVITY

*A Hands-On and Cooperative Activity*

#### Protocol

1. There are six translations in total. Within your four-student group, two students perform translations #1–3 and two students perform translations #4–6.
2. Upon completion, compare your translations with other members of your group.
3. Scaffolds and supports were included in the last two definition-writing activities to help you build momentum and confidence. They have been removed from this activity. Part 2 asks that you brainstorm individually for a few minutes, record your ideas, and then collaborate on writing a precise definition of “Translation.”
4. When you settle upon the final version of your definition, please write it on chart paper and be prepared to defend it.

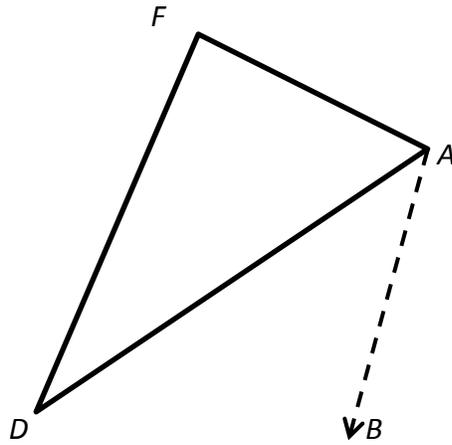
## Translations Along a Vector.

### Part 1. Exercises

#1. Vector  $v$  is defined by  $\overrightarrow{AB}$ .

Translate  $\triangle FAD$  along  $\vec{v}$ .

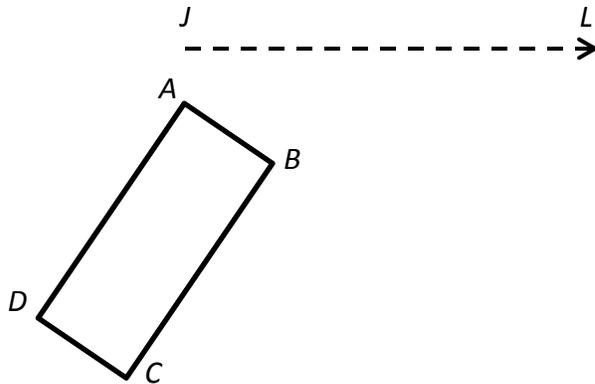
Then explain to your table partners how you translated the triangle.



#2. Vector  $v$  is defined by  $\vec{JL}$ .

Translate rectangle  $ABCD$  along  $\vec{v}$ .

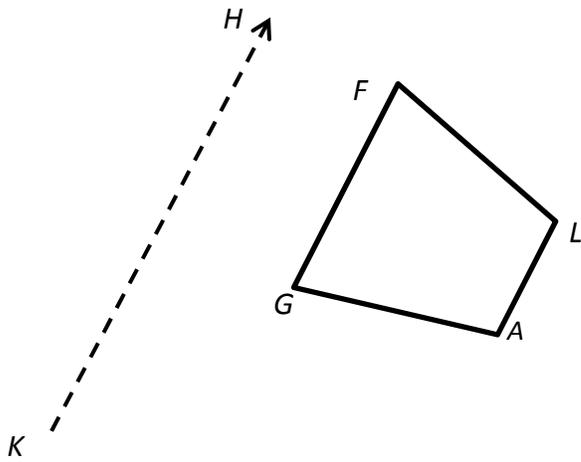
Then explain to your table partners how you translated the rectangle.



#3. Vector  $v$  is defined by  $\overrightarrow{KH}$ .

Translate trapezoid  $FLAG$  along  $\vec{v}$ .

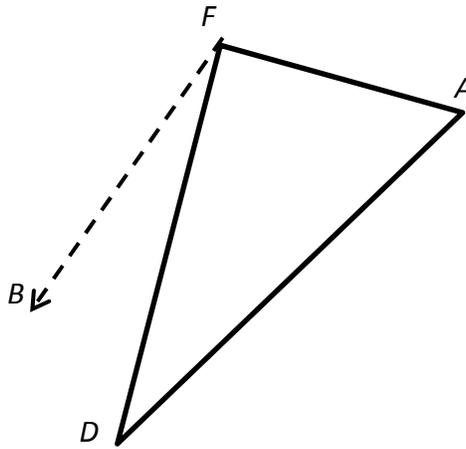
Then explain to your table partners how you translated the trapezoid.



#4. Vector  $v$  is defined by  $\overrightarrow{FB}$ .

Translate  $\triangle FAD$  along  $\vec{v}$ .

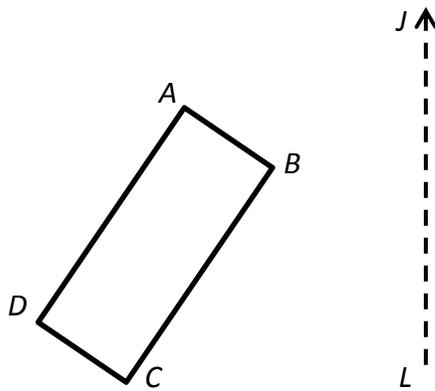
Then explain to your table partners how you translated the triangle.



#5. Vector  $v$  is defined by  $\vec{LJ}$ .

Translate rectangle  $ABCD$  along  $\vec{v}$ .

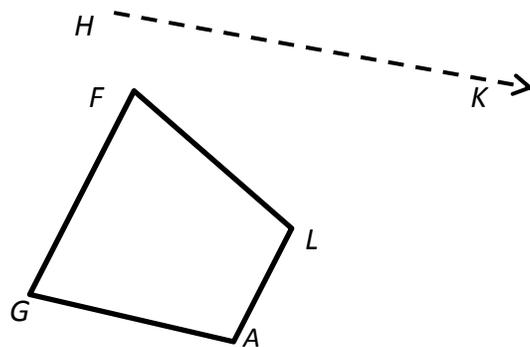
Then explain to your table partners how you translated the rectangle.



#6. Vector  $v$  is defined by  $\overrightarrow{HK}$ .

Translate trapezoid  $FLAG$  along  $\vec{v}$ .

Then explain to your table partners how you translated the trapezoid.



## Translations Along a Vector

### Part 2. Write a Precise Definition of Translation

\*\*A thorough definition will include references to

- Translating a point that does not lie on the vector
- Translating a point that does lie on the vector
- Translating a point along the zero vector
- Parallel lines
- Congruent segments