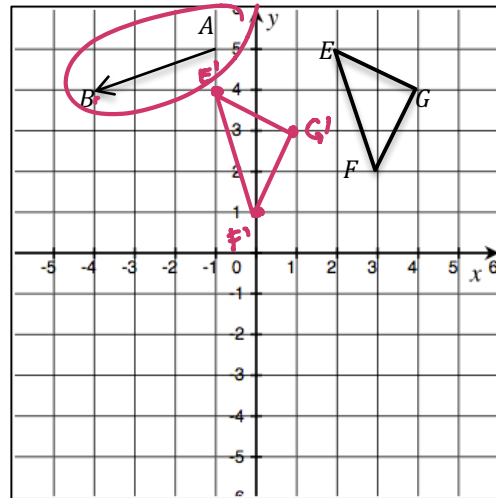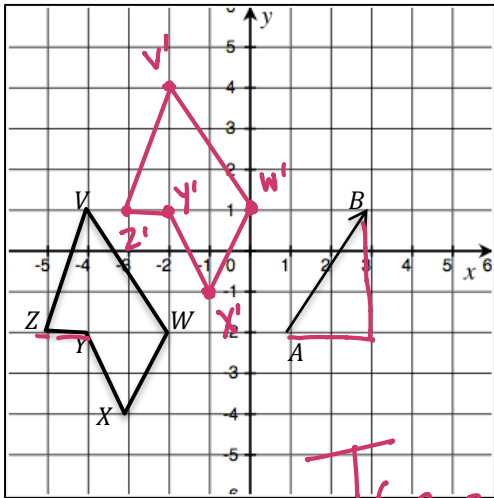**LEARNING OBJECTIVE:** We will perform a sequence of translations along a given vector. (G8M2L4).
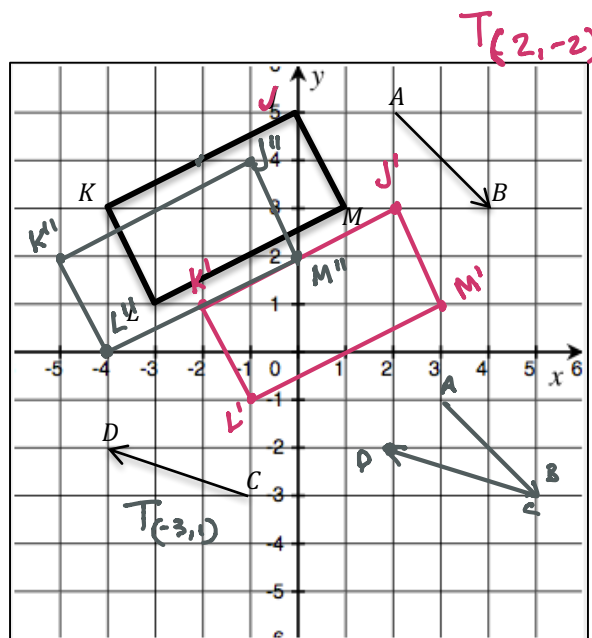
ACTIVATING PRIOR KNOWLEDGE:
We can perform translations along a vector.

CONCEPT DEVELOPMENT:
- We can translate objects along more than one vector.
- The length of line segments and the measurement of angles stay the same after multiple translations.
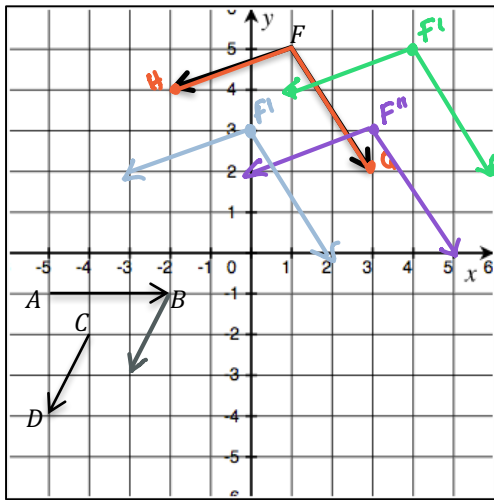
Example:

G8M2L4: Sequencing Translations

Guided Practice:

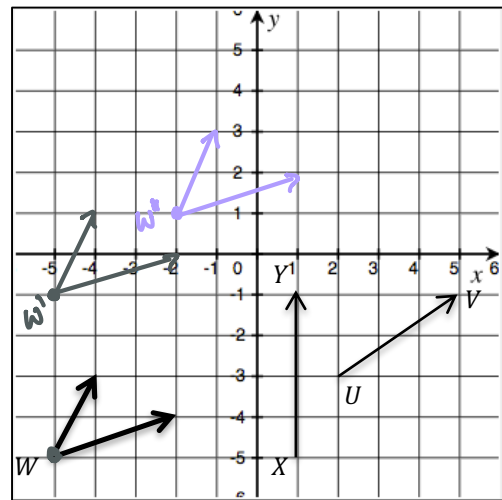**Steps for Sequencing Translations**

1. Perform your first translation, making sure to preserve angle measurement and line segment length. Label your translation.
2. Perform second translation, again making sure to preserve angle measurements and line segment lengths. Label this translation as well.

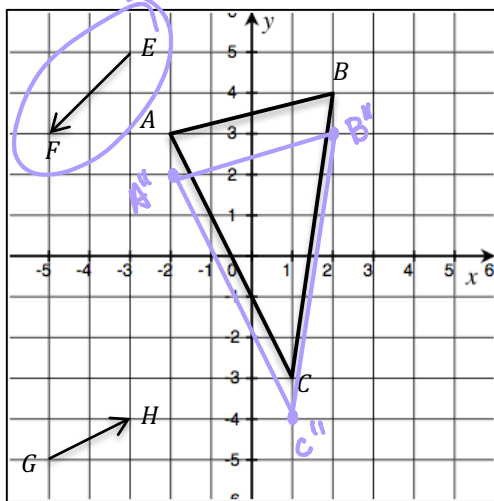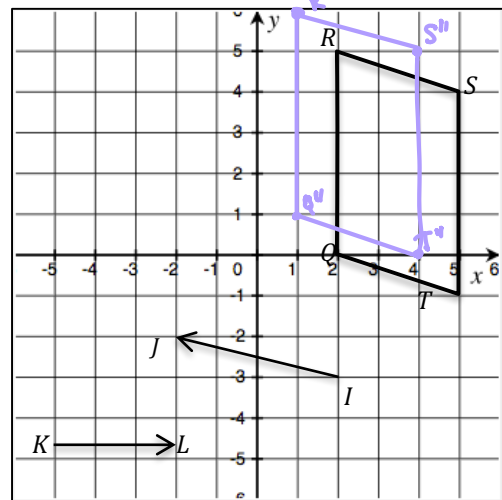| Translate along $\overrightarrow{AB}$ and then along $\overrightarrow{CD}$	Translate along $\overrightarrow{XY}$ and then along $\overrightarrow{UV}$
$T_{(3,0)}$ and $T_{(-1,-2)}$ $T_{(2,-2)}$	$T_{(0,4)}$ and $T_{(3,2)}$
Translate along $\overrightarrow{EF}$ and then along $\overrightarrow{GH}$	Translate along $\overrightarrow{IJ}$ and then along $\overrightarrow{KL}$
$T_{(-2,-2)}$ and $T_{(2,1)}$	$T_{(-4,1)}$ and $T_{(3,0)}$

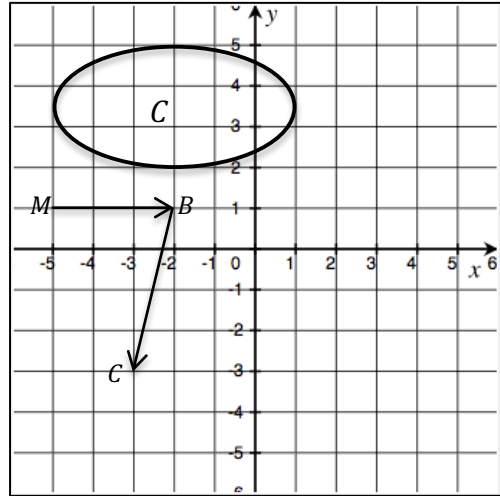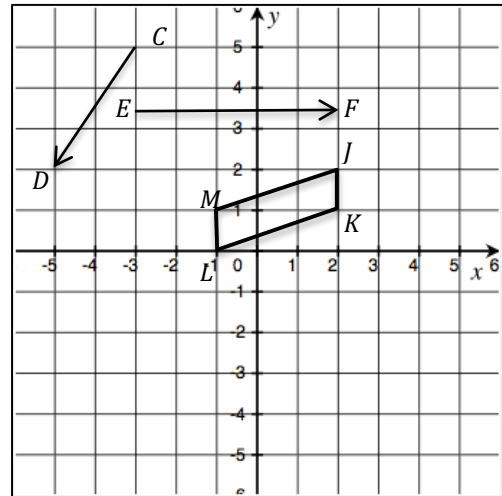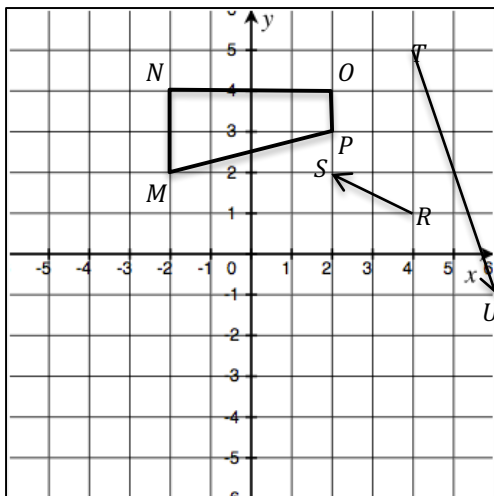| Translate along $\overrightarrow{AJ}$ and then along $\overrightarrow{JR}$	Translate along $\overrightarrow{MB}$ and then along $\overrightarrow{BC}$
$T_{(0,-4)}$ and $T_{(-3,-1)}$	$T_{(3,0)}$ and $T_{(-1,-4)}$
Translate along $\overrightarrow{EF}$ and then along $\overrightarrow{FE}$	Translate along $\overrightarrow{GH}$ and then along $\overrightarrow{HG}$
$T_{(0,2)}$ and $T_{(0,-2)}$	$T_{(\ ,\ )}$ and $T_{(\ ,\ )}$
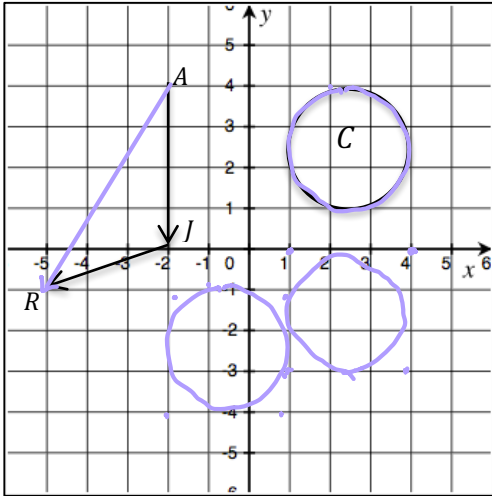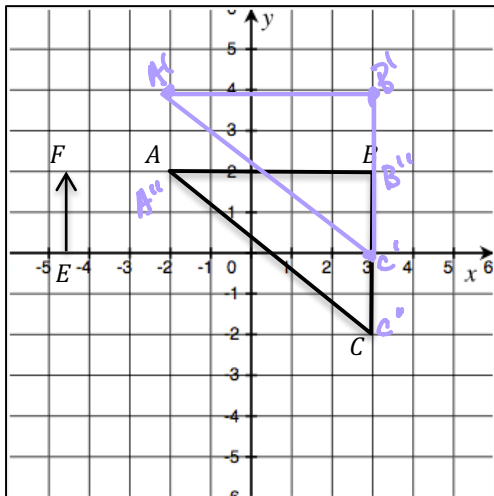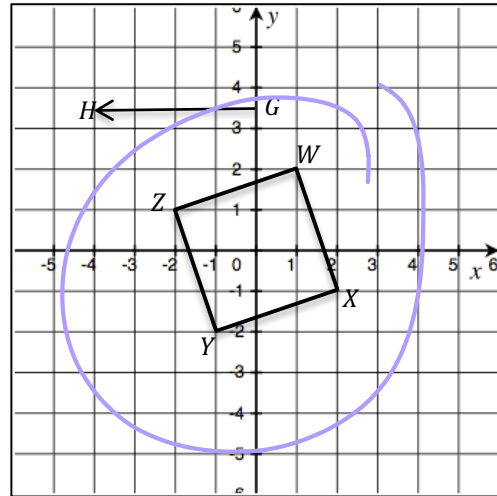
Independent Practice:

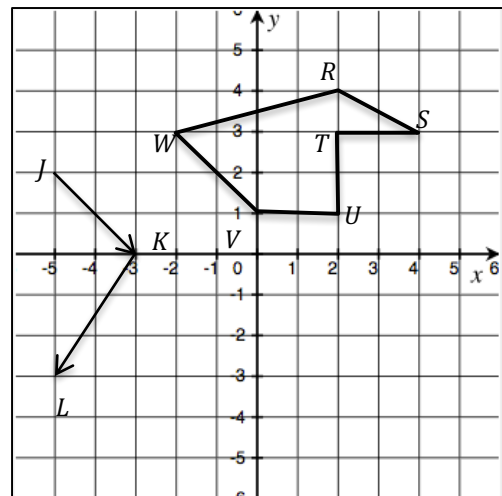| Translate along $\overrightarrow{AB}$ and then along $\overrightarrow{BA}$	Translate along $\overrightarrow{CD}$ and then along $\overrightarrow{EF}$
Translate along $\overrightarrow{RS}$ and then along $\overrightarrow{TU}$	Translate along $\overrightarrow{JK}$ and then along $\overrightarrow{KL}$
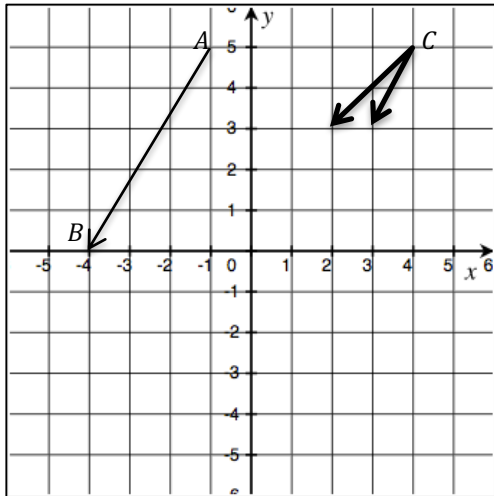
Closure:

If you are sequencing translations, does it matter which translation you perform first?

Teacher Notes:

Go over notation that students will see on Khan Academy for "Translation of Polygons" $T_{(x, y)}$

HW: Translations of Polygons on Khan Academy