Unit 1 Transformations – Some Definitions and Pictures

Reflection

Students have said “flip” across a line

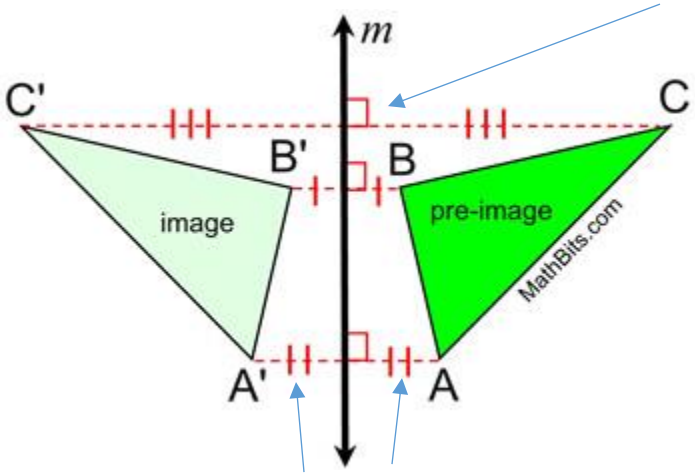
Teachers provided this definition

A reflection of a set of points in a plane . . .

• moves points across a specified line of reflection so that the line of reflection is the perpendicular bisector of each line segment connecting corresponding pre-image and image points

But here it is in a picture:

Notice the reflection line makes a 90° with the line between preimage point and image point



So 90° and bisector – means the line of reflection is a *Perpendicular Bisector*

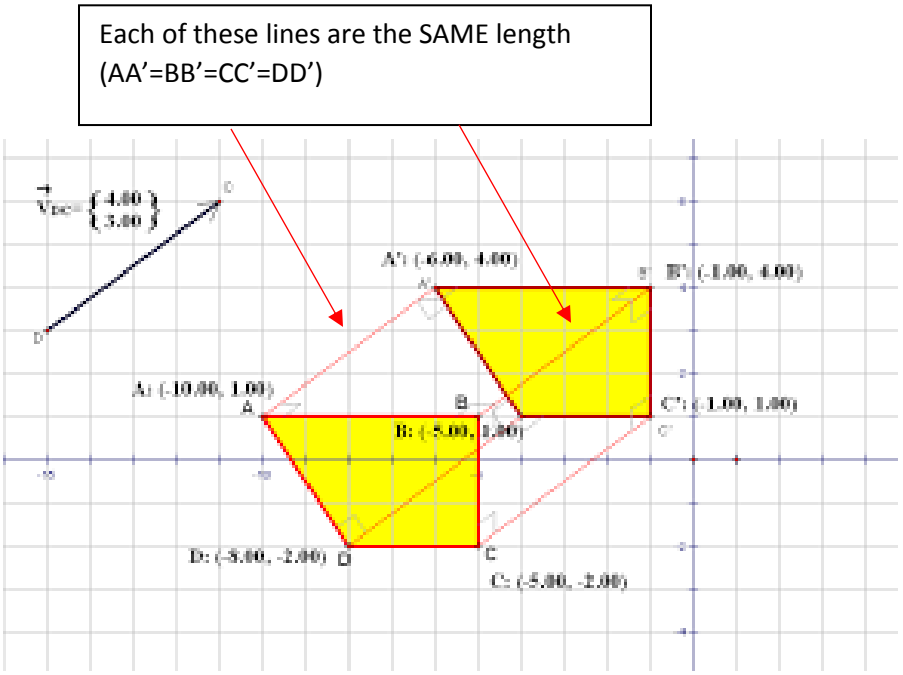
The reflection line splits the line into two equal pieces. (Notice they are **NOT** the same on each line) This makes the reflection line *a bisector* because it splits the line into two equal pieces

Translations

The students call this a slide – movement along the x and y only

A translation of a set of points in a plane . . .

- moves points the same distance and direction along lines that are parallel to each other



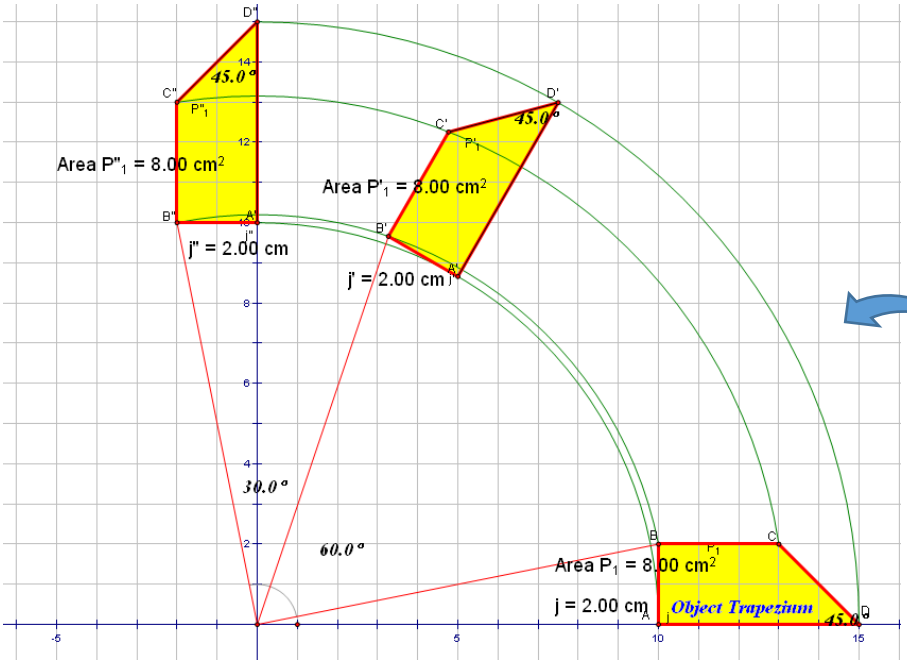
Rotation

Students say to turn it

Teacher provided this definition as well

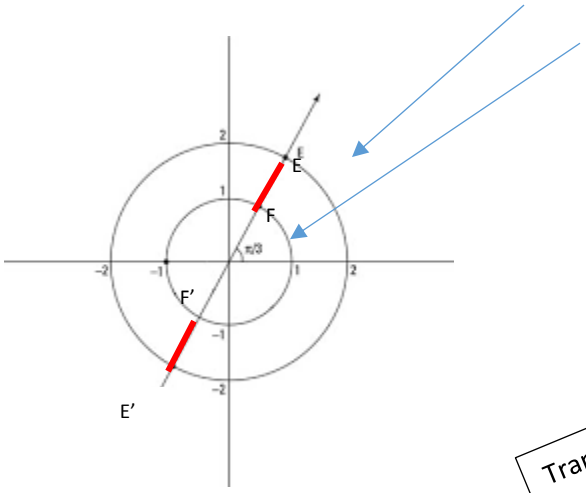
- moves points the same direction along concentric circles and through the same angle of rotation

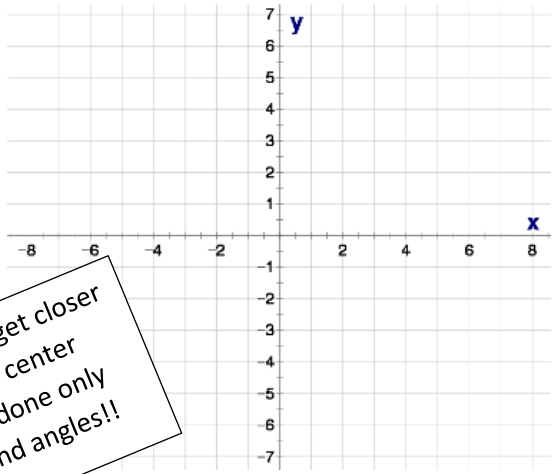
Rotations can occur two directions counter clockwise (CCW) or clockwise (CW)



This would be a CCW rotation

Circle 1 is the same distance (radius) from the center all the way around. Circle 2 has another fixed distance all the way around the SAME center. These are *concentric circles*





Transformations CAN NOT get closer to or move away from the center point BECAUSE we have done only ones that KEEP shape and angles!!