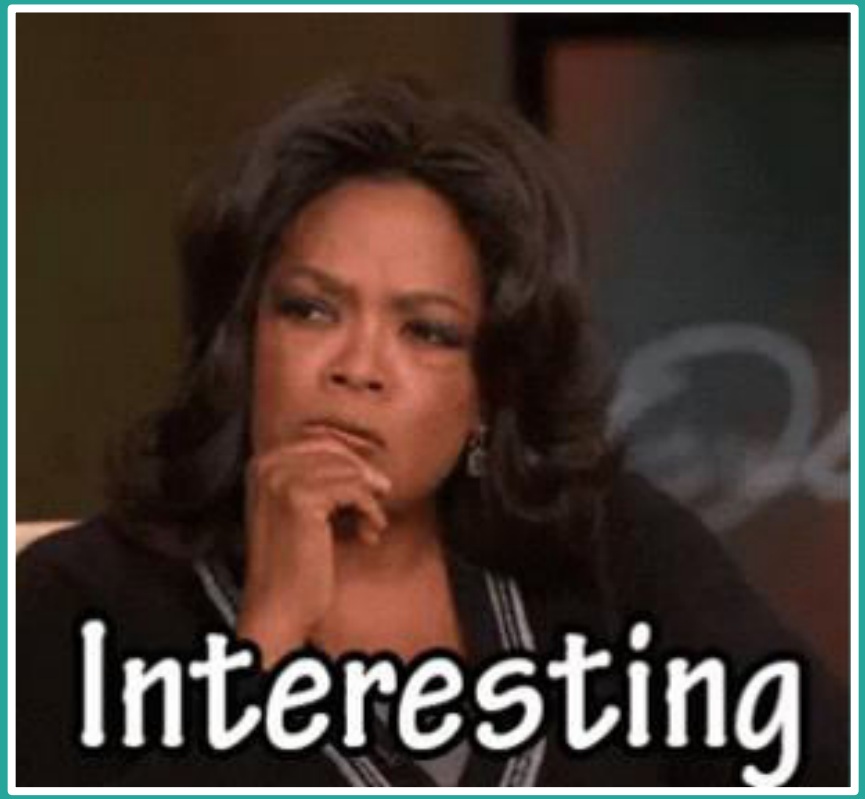
Congruence

Lesson 13

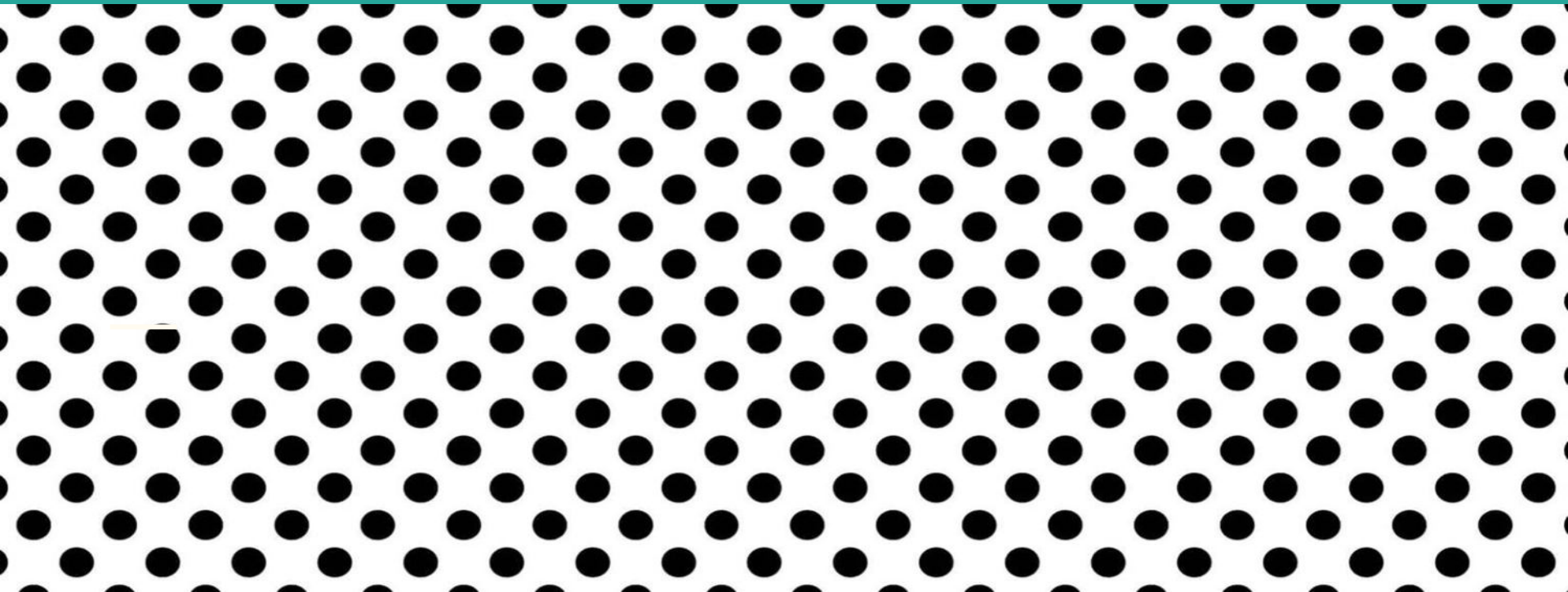
CCSS Standards: Addressing	• 8.G.A.1.a • 8.G.A.2

Let’s find ways to test congruence of interesting figures.



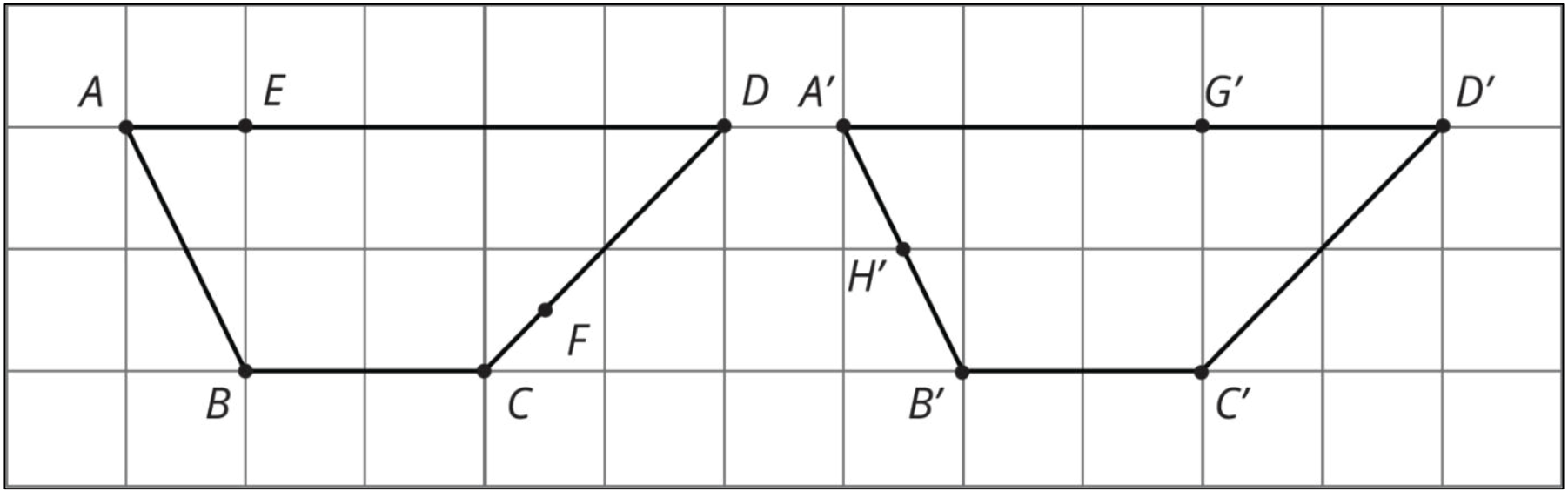
Not Just the Vertices

Warm Up 13.1



Begin with Quiet Think Time. (3 min)

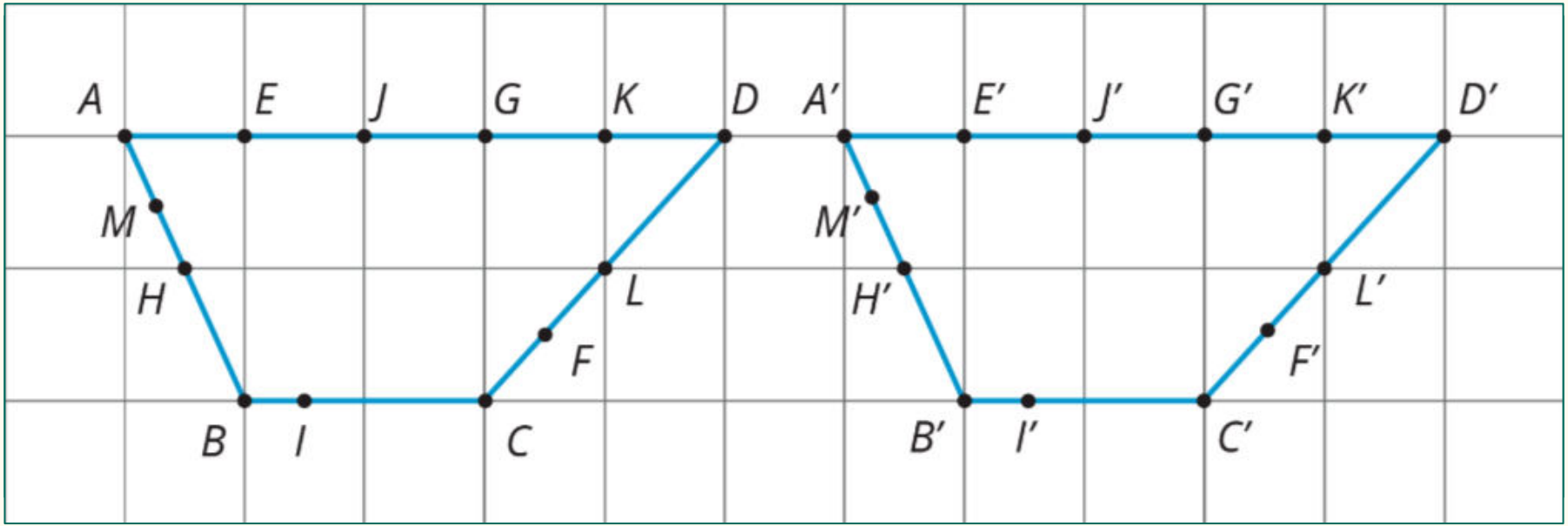
Then we'll share our ideas as a class!



Reminder:

When two figures are congruent, every point on one figure has a corresponding point on the other figure.

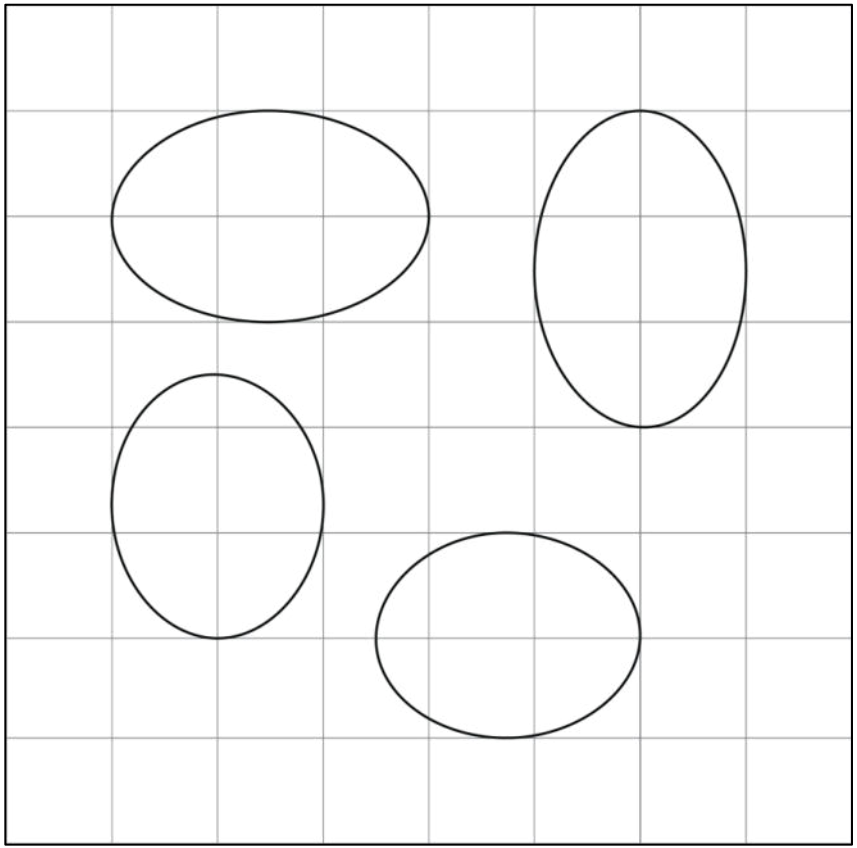
What methods did you use to find your corresponding points?



Congruent Ovals

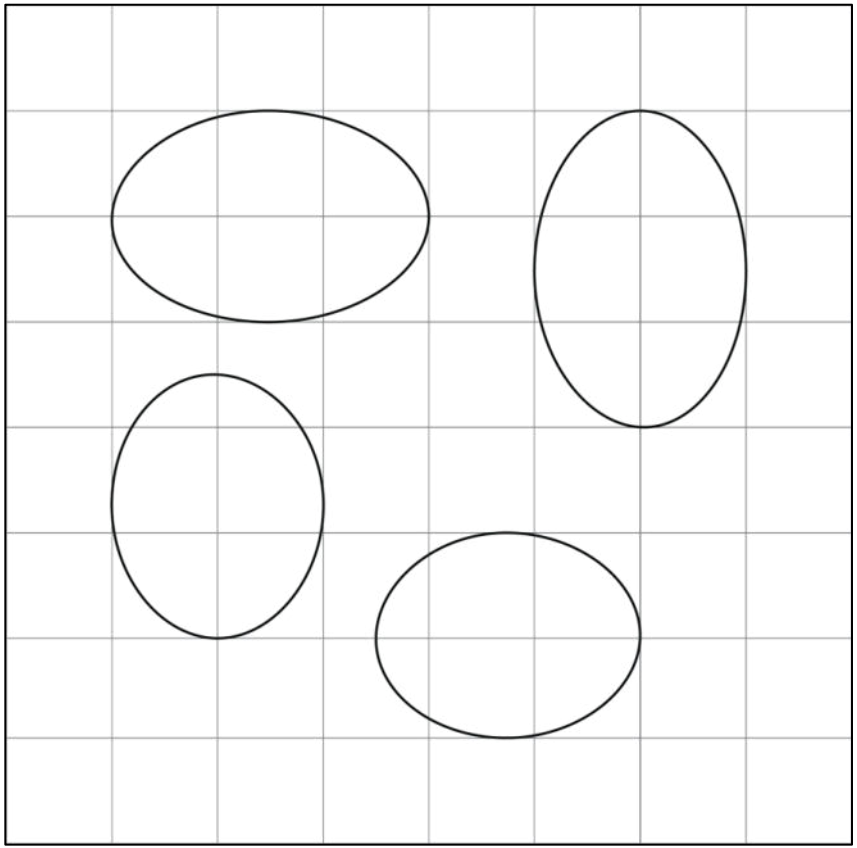
Activity 13.2

- Think, Pair, Share



Begin with
Quiet Work Time.
(3 min)

Share your reasoning with your team.

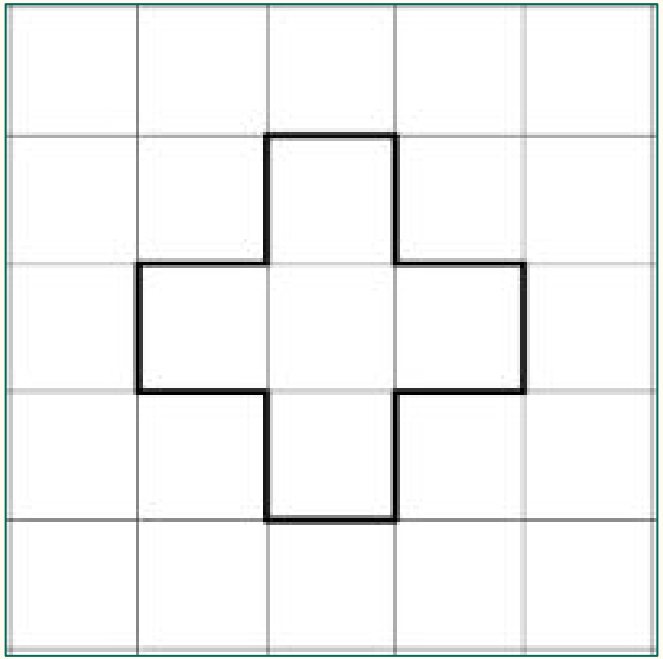


How did you determine which ovals are congruent?

“Are you ready for more?”

You can use 12 toothpicks to create a polygon with an area of 5 square toothpicks, as pictured.

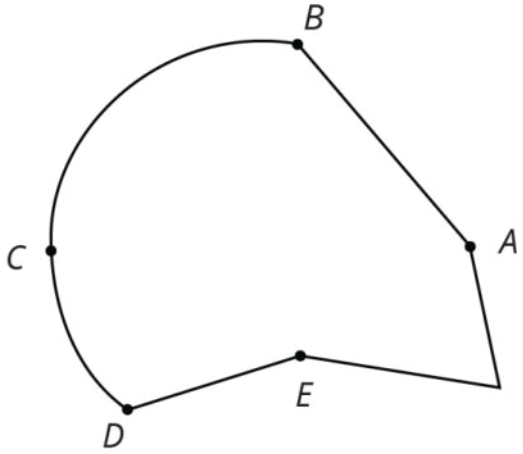
Can you use exactly 12 toothpicks to create a polygon with an area of four square toothpicks?

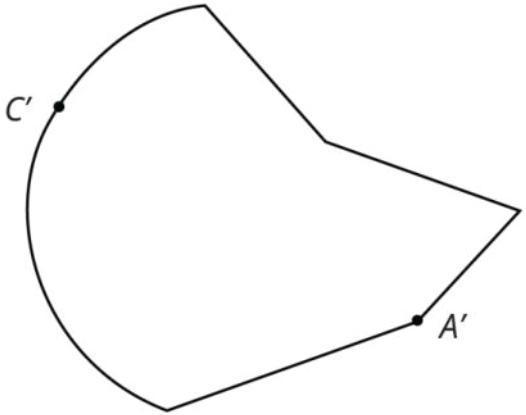


Corresponding Points in Congruent Figures

Activity 13.3

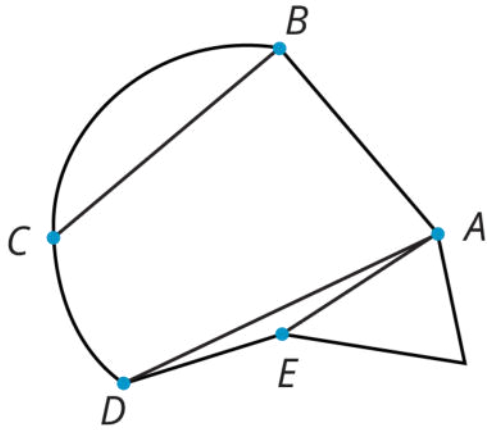
- Discussion Supports

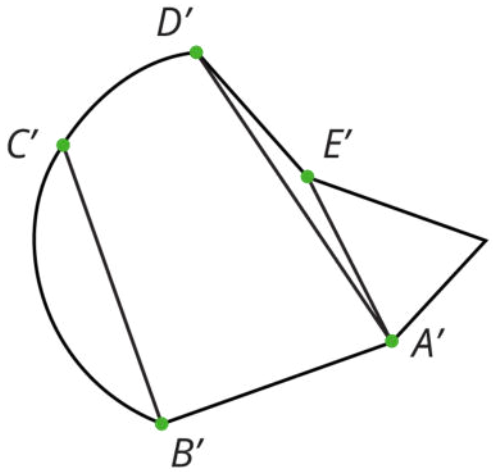




Begin with
Quiet Work Time.
(5 min)

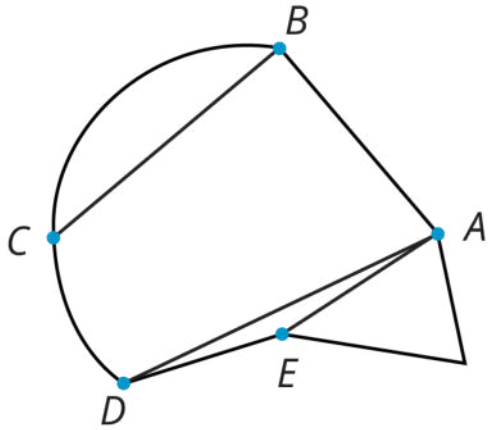
Share your reasoning with your team.

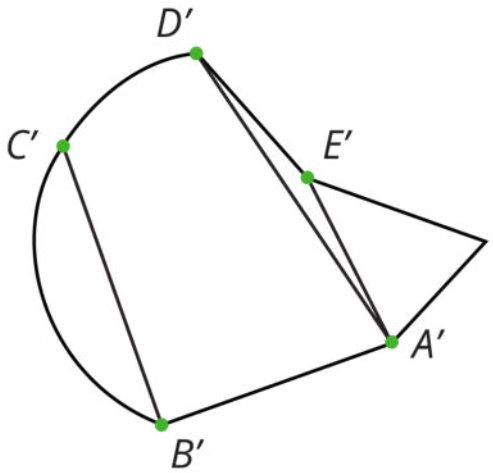




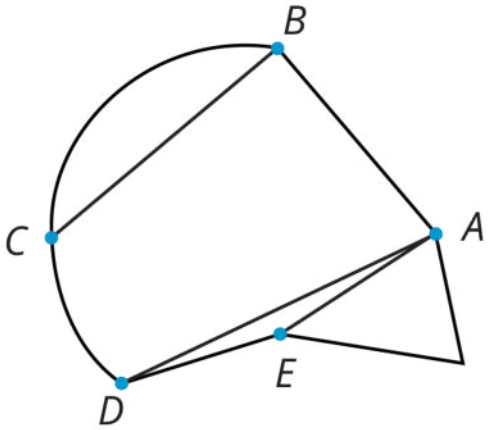
How did you determine the points corresponding to *B*, *D*, and *E*?

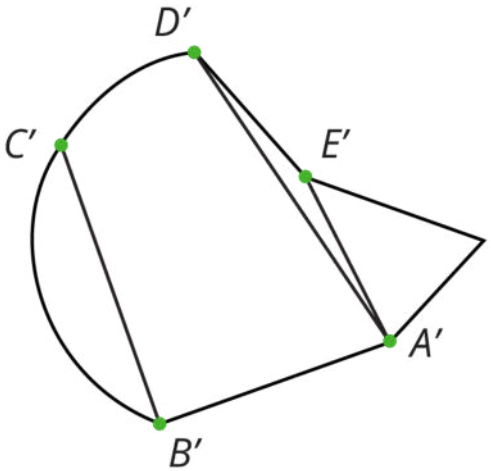
Do our strategies work for finding *C'* if it had not been marked?





Two shapes are congruent when there is a sequence of translations, reflections, and rotations that match up one shape exactly with the other.



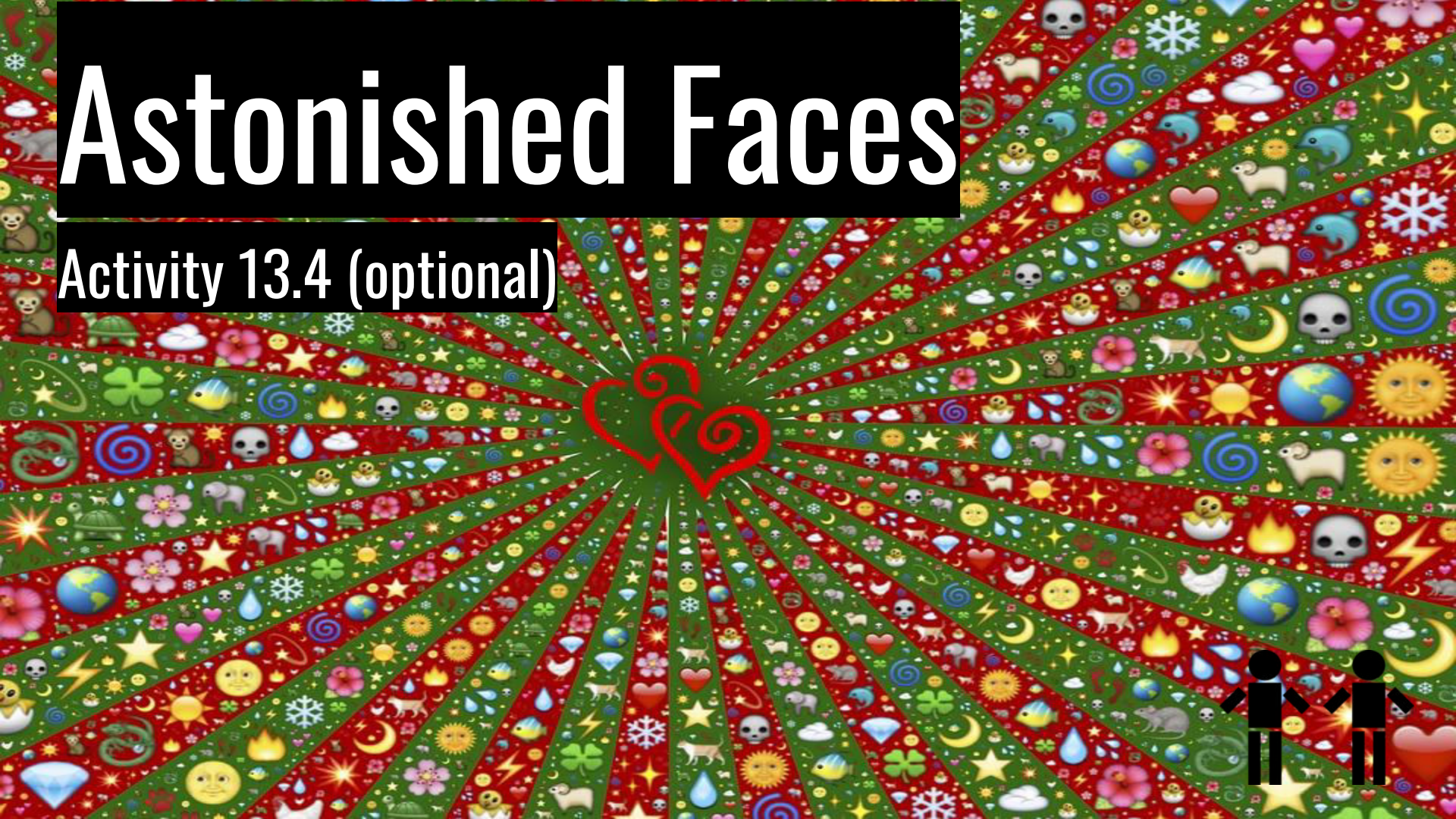


If shapes look congruent, we can use this intuition to find the right motions of the plane to demonstrate that they are congruent.

Through experimenting with rigid motions, we increase our visual intuition about which shapes are congruent.

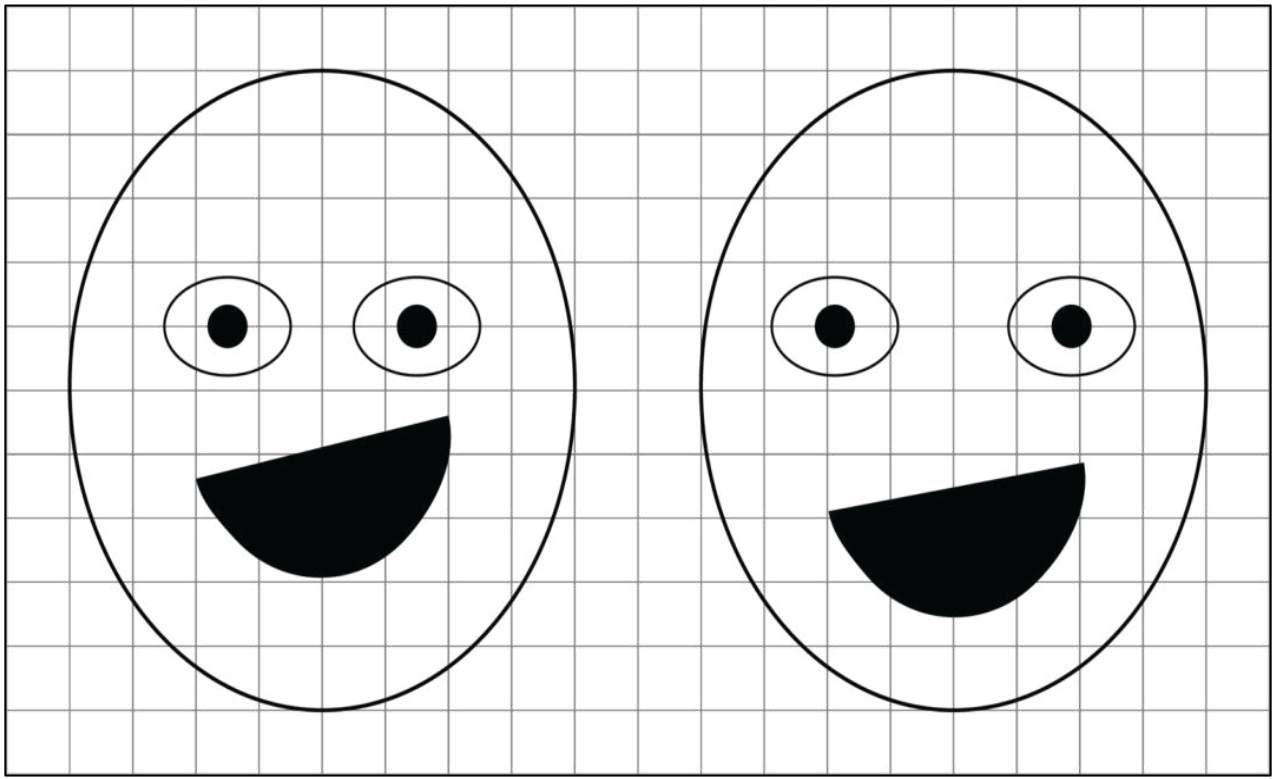
Astonished Faces

Activity 13.4 (optional)

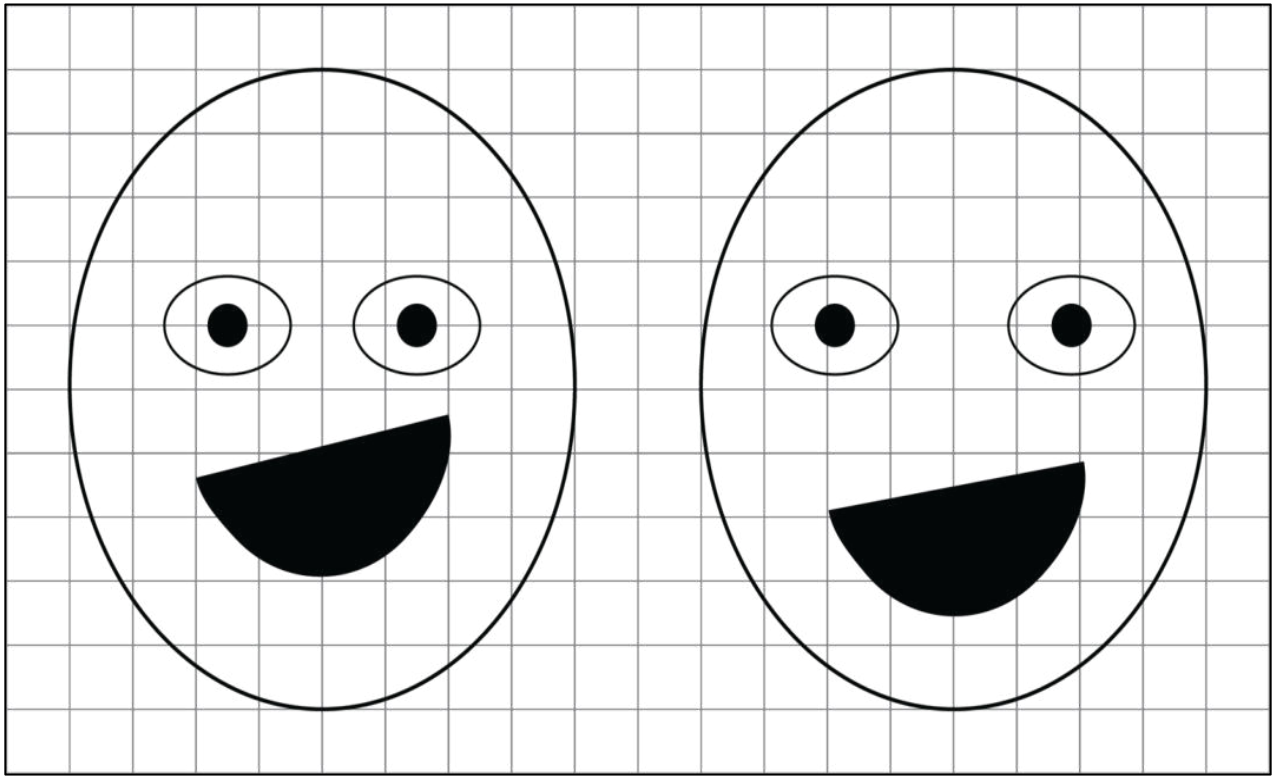


Begin with Quiet Work Time. (5 min)

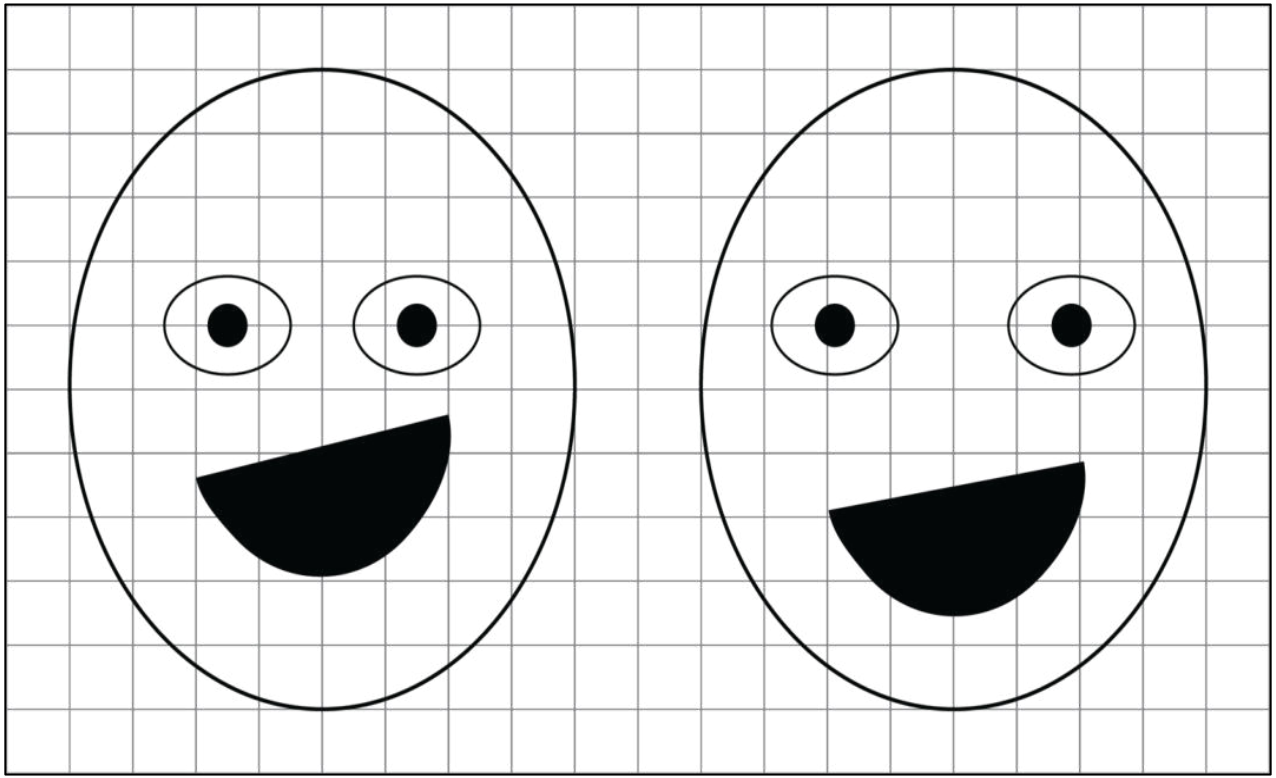
Share your thinking with your team!



Are the face outlines congruent? the eyes? the mouths?

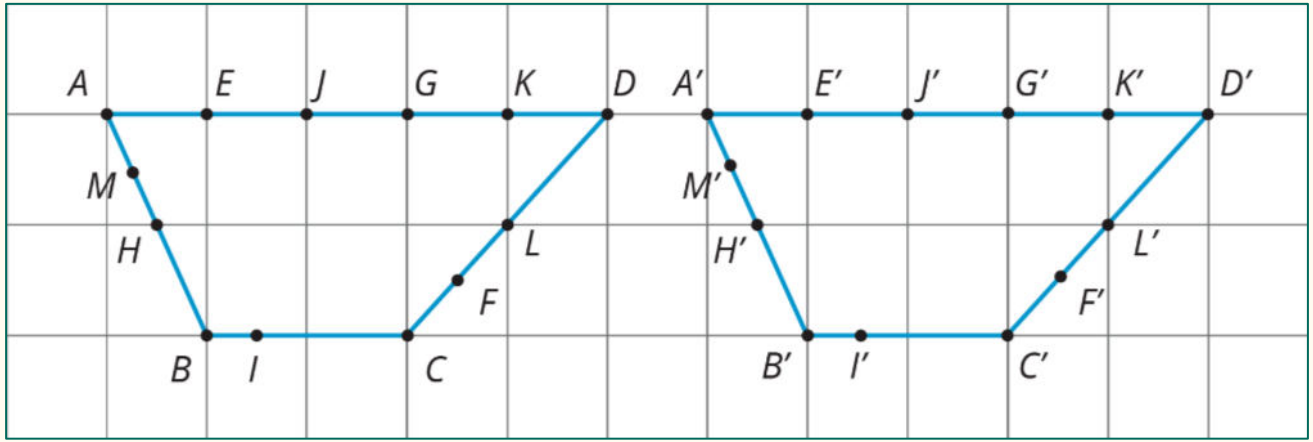


Even though individual parts of the faces are congruent, the faces are not congruent.



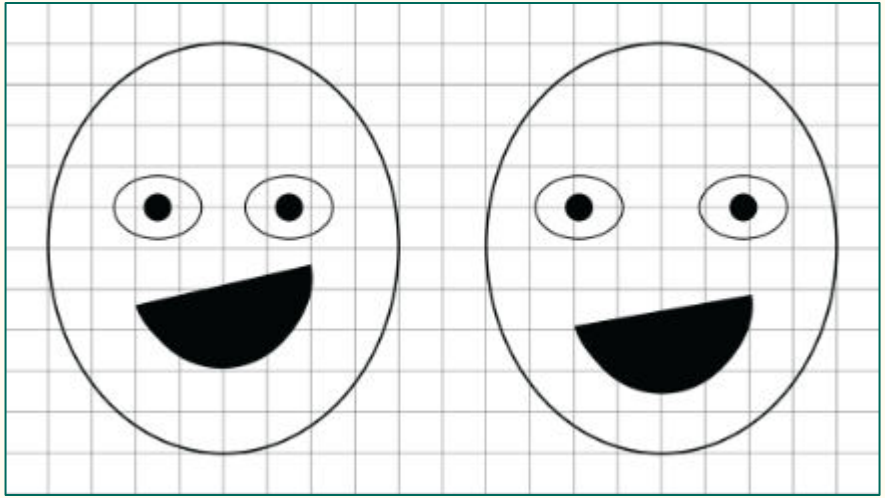
BIG IDEA #1

Two figure are congruent when there is a sequence of translations, rotations, and reflections matching up one figure with the other.



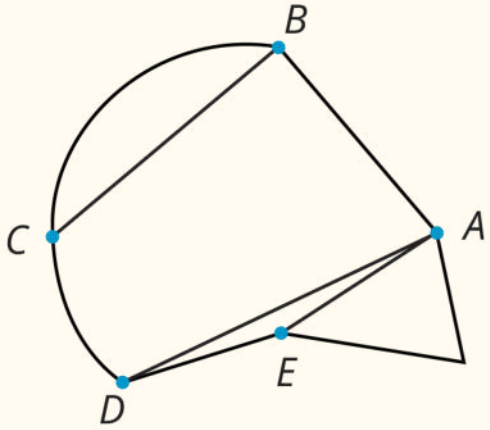
BIG IDEA #2

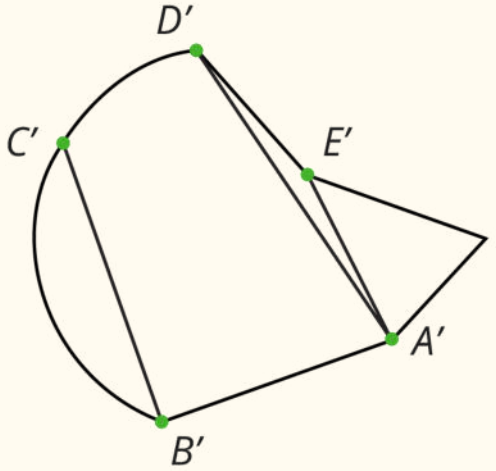
To show that two figures are *not* congruent it is enough to find corresponding points on the figures which are not the same distance apart, or corresponding angles that have different measures.



BIG IDEA #3

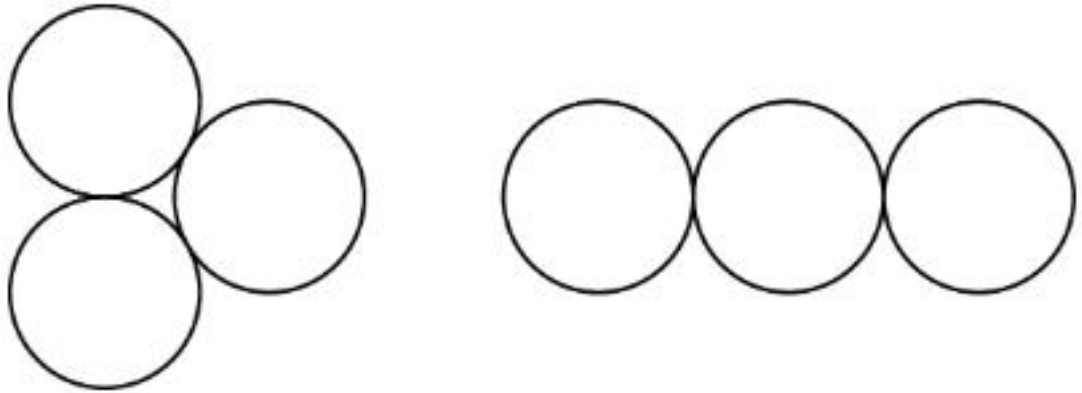
The distance between pairs of corresponding points in congruent figures is the same.





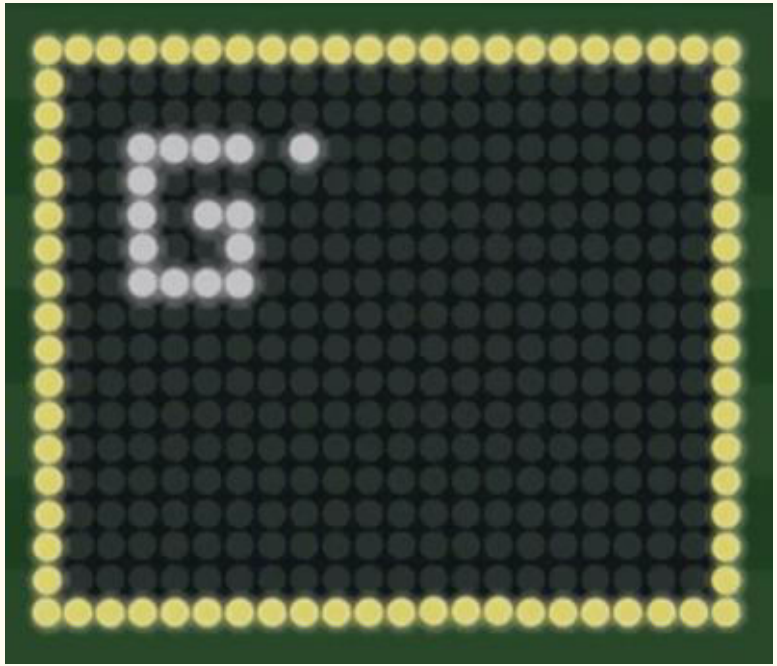
BIG IDEA #4 Some figures are made up of several parts.

Example: All 6 of the circles are congruent. But in the left design, each circle touches both of the other two. The distances between any circle centers in one design will be different than the distances between any two circle centers in the other design.



Today’s Goals

- ❑ I can use distances between points to decide if 2 figures are congruent.



Explaining Congruence

Cool Down 13.5