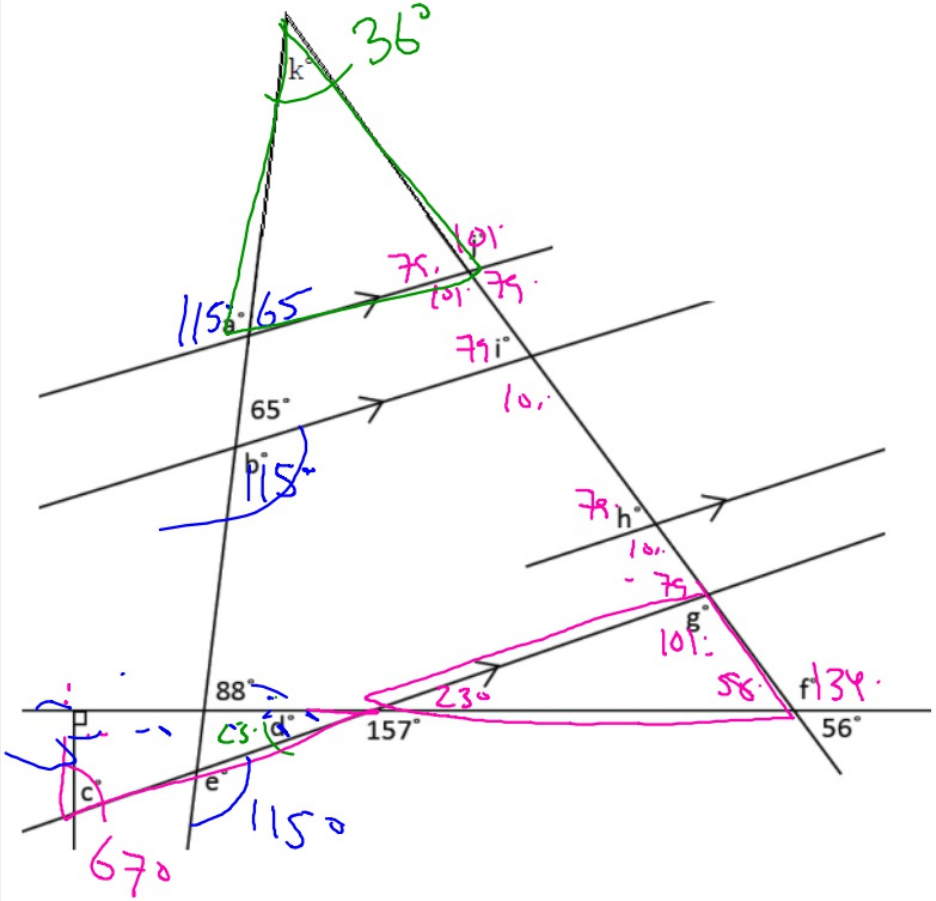
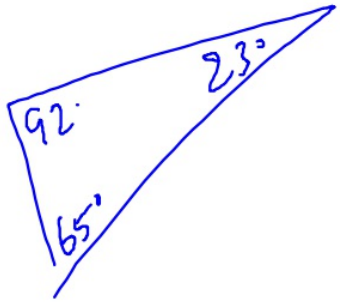
Good morning and welcome back! Attach to notes,
then find all the angles!

**will need a device
today if you have one**





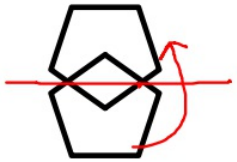
Transformations

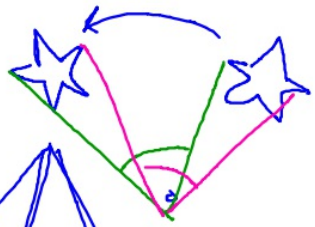
NOTES

Why study them?

rigid
- translations
- reflections
- rotations

non-rigid
- dilation

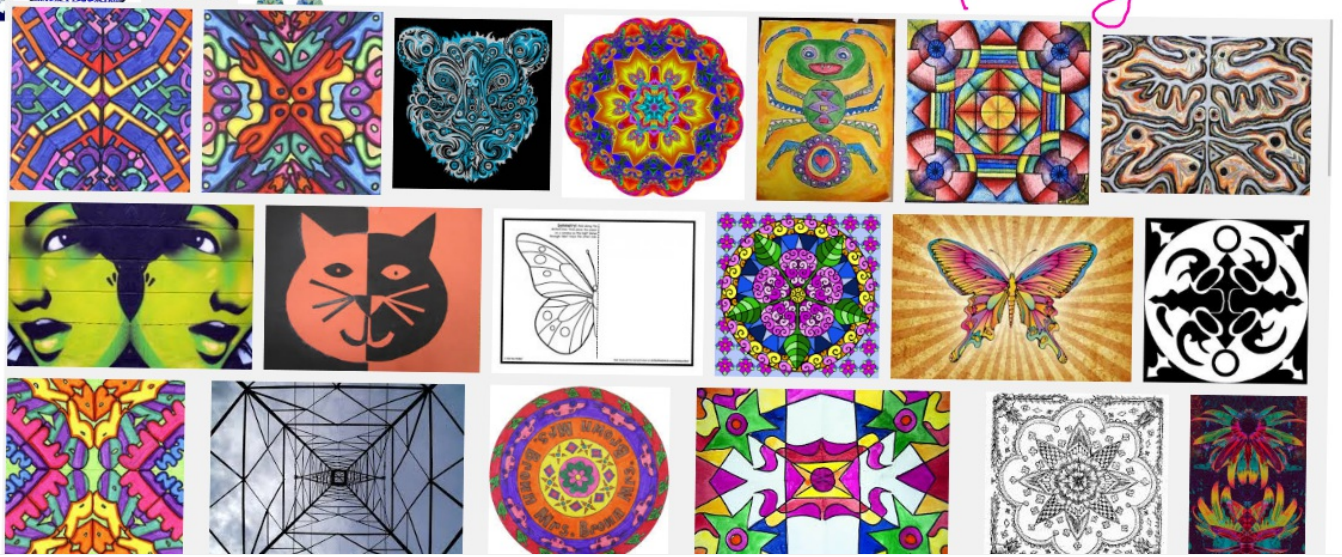


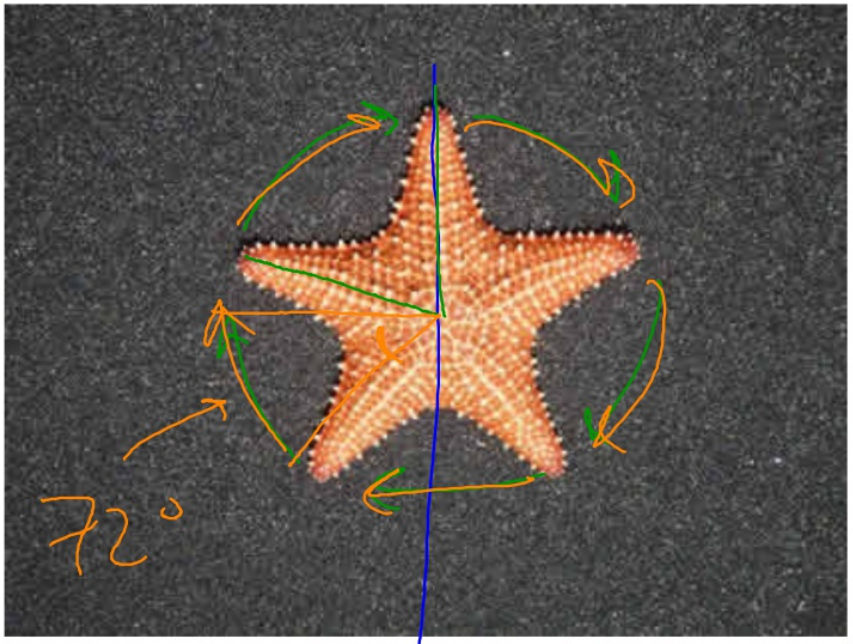


https://www.youtube.com/watch?v=MHiaNY3idLA

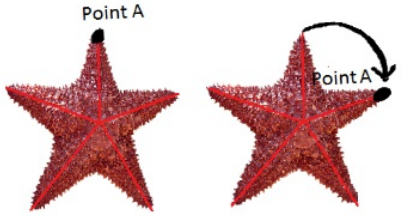
Rotational Symmetry

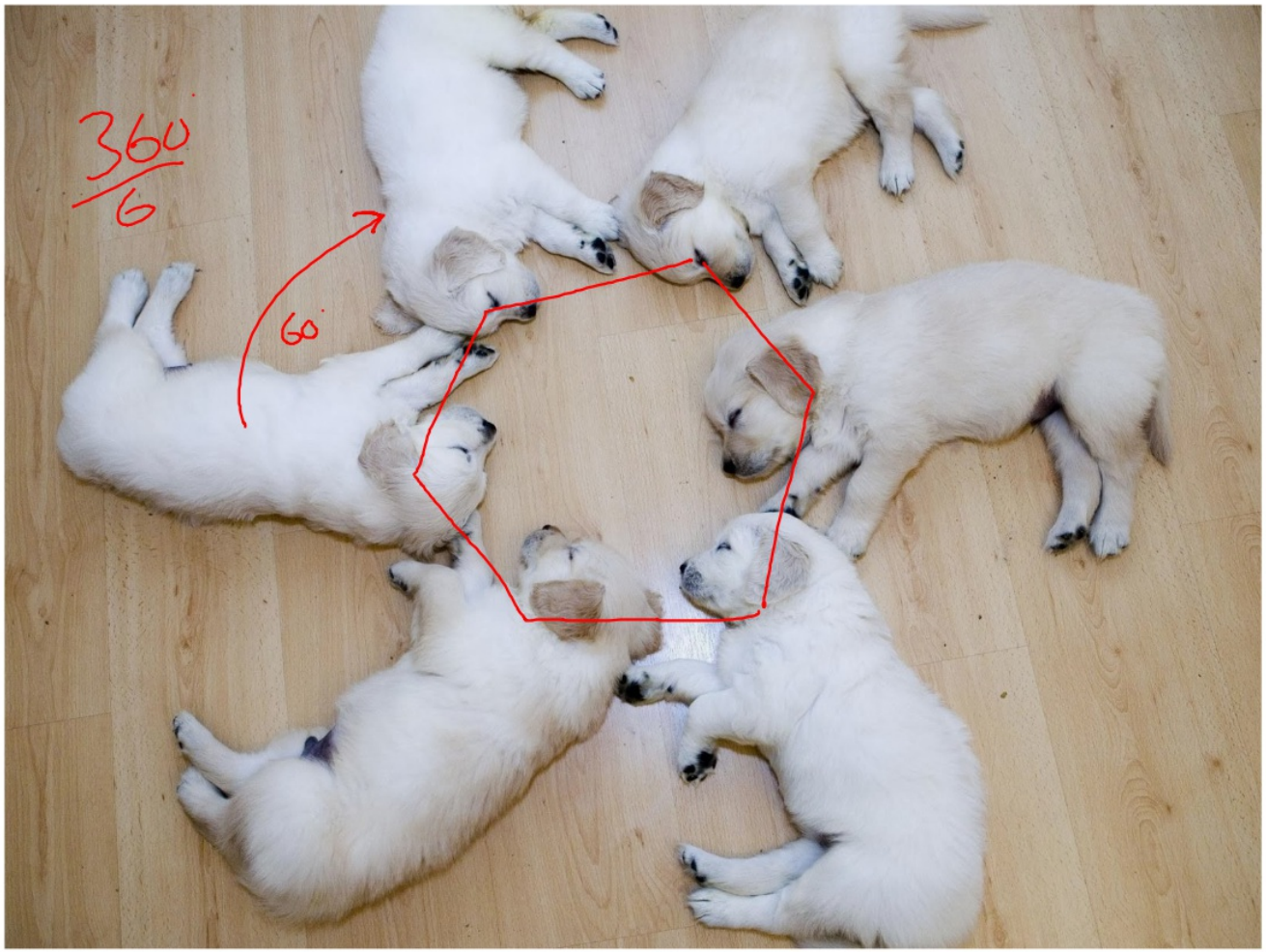
Reflectional Symmetry

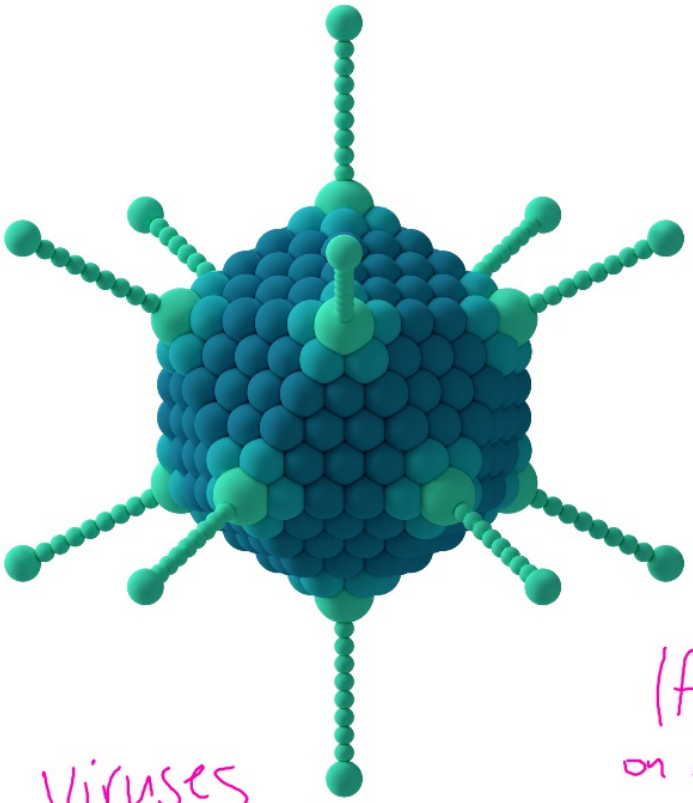




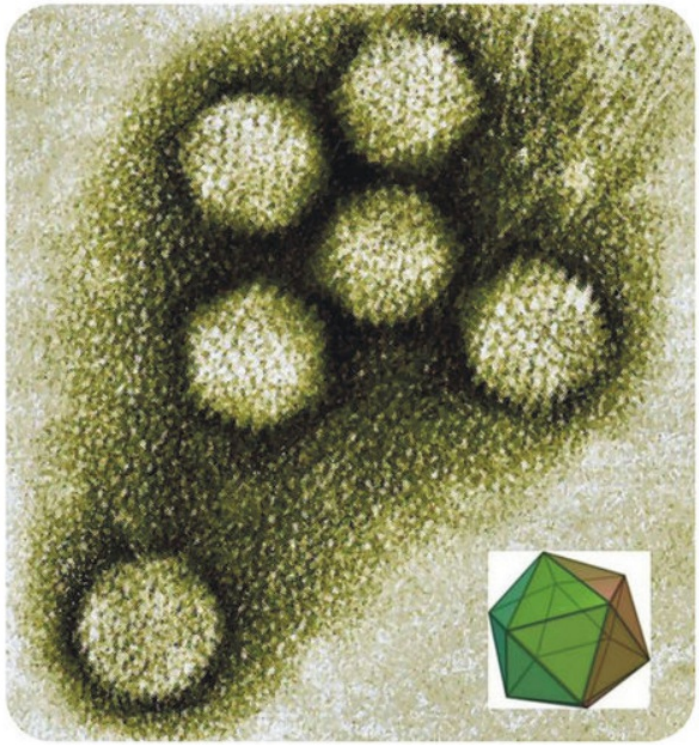
$\frac{360}{5} = 72$




360/6
60°



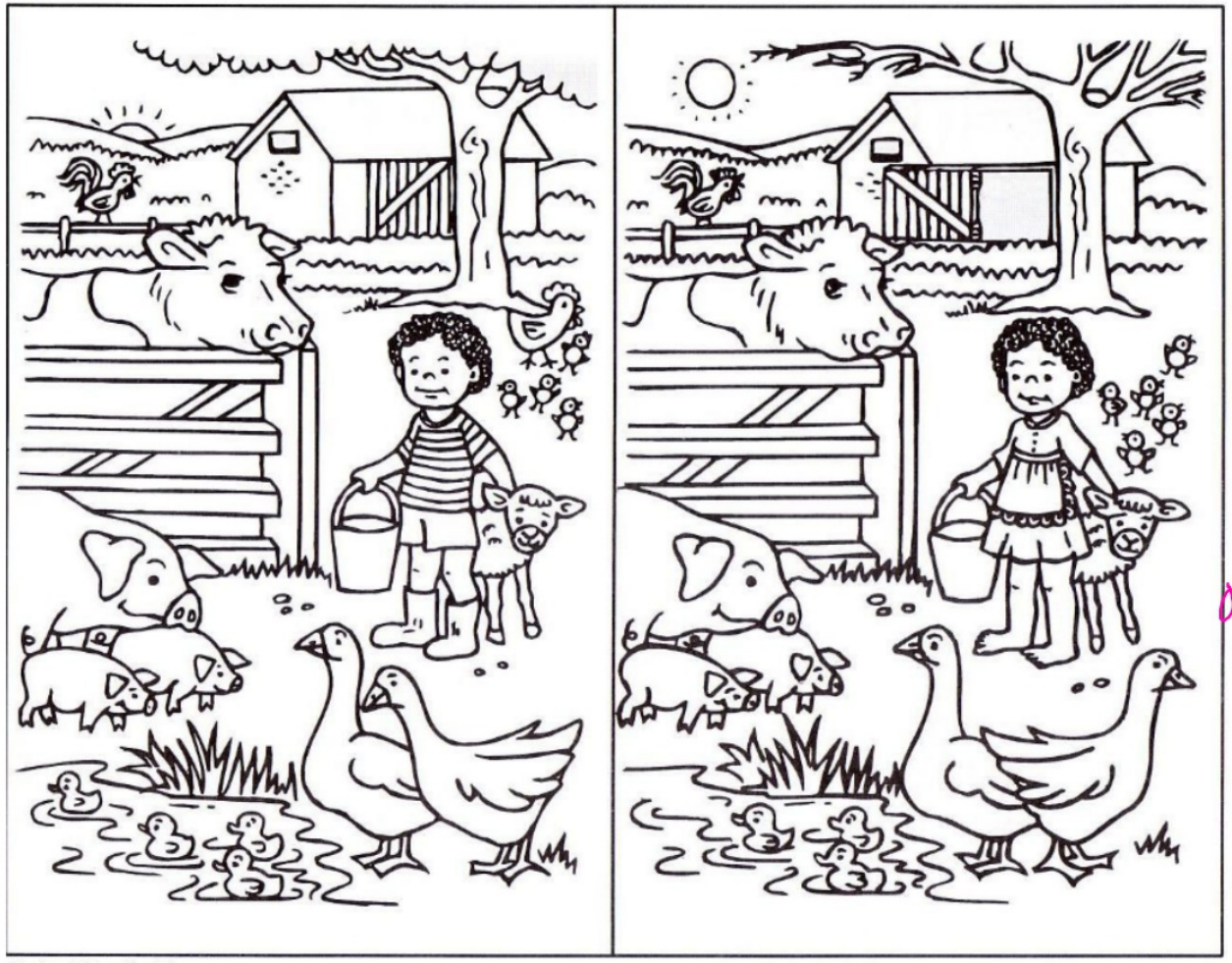
Viruses



If all viruses on earth were lined up end to end they would stretch 200,000,000 LIGHTYEARS

(1 LY ≈ 6,000,000,000,000 miles)

Congruence and Isometries



Are these images congrue

PRIVATELY
spot at least 3
differences

Think of how
to find ALL
differences at once

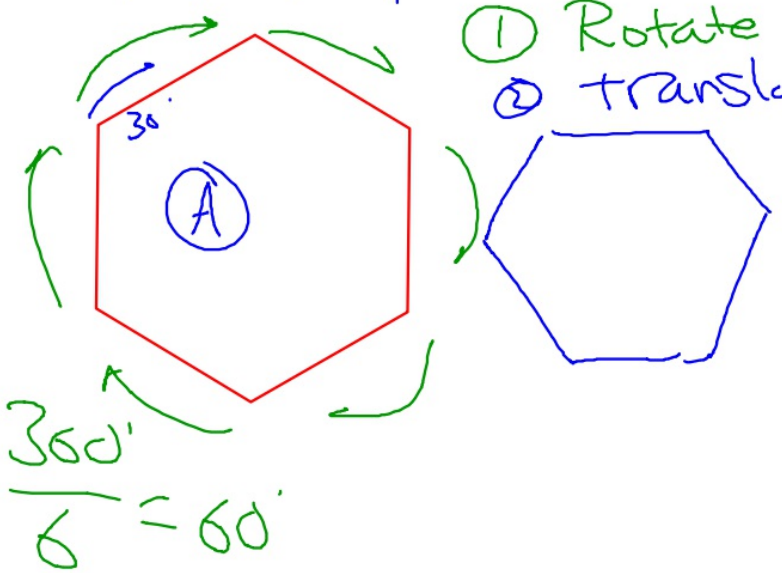
overlay one image atop the other

Share with your
elbow partner

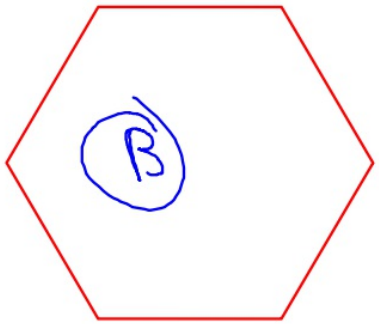
Two figures are <u>congruent</u> if and only if you can show that one figure can be carried onto the other with a sequence of rigid motions (isometries).

Are A ; B $\cong$?

① Rotate A 30° Clockwise
② translate down ; right. → yes.



$\frac{360°}{6} = 60°$



Practice with Transformations NEWCOMERS, DO THIS

- Create a coordinate grid and plot+label the points, creating a quadrilateral

A(-3,3)
B(-1,1)
C(2,3)
D(0,5)

+ connect

"arrow notation"

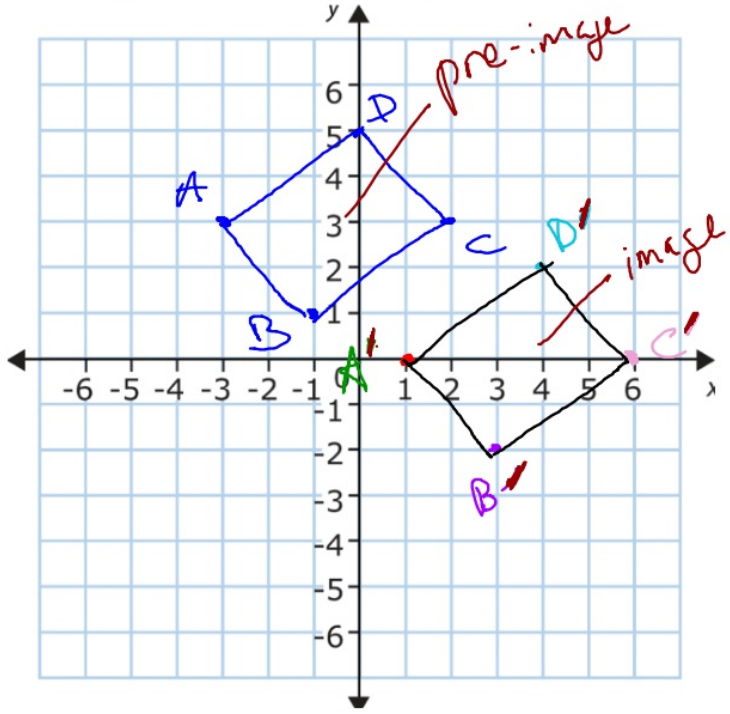
Apply the transformation (x,y)→(x+4, y-3) to each coordinate pair

A'(1, 0)
B'(3, -2)
C'(6, 0)
D'(4, 2)

"A prime"

right 4 down 3

translation



Plot and label the points, connecting them to make the image. What kind of isometry was performed?

How can we describe Ms. Pacman's movement?

Is it accurate to say Ms Pacman "slides" around the screen?

No.

She also must flip/reflect

What was the very first thing Ms Pacman did?

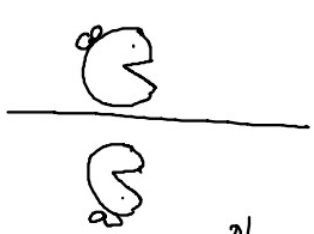
reflect H (horizontally)

Are translations and reflections enough?

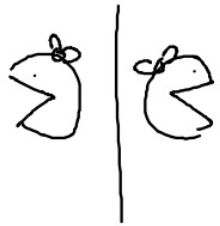
No. Need turns too

Things to think about:

- translation: in what direction(s) and how far?
- rotation: what amount, around what point, and in what direction?
- reflection: across what line/in what direction?



vertical reflection w/ horizontal axis of symmetry



Horizontal Reflection w/ vertical axis of symmetry

Goal: list out the specific steps Ms. Pacman uses to move around

Work with your elbow partner
Will need a device to re-play video mgeo.weebly.com/pacman

(Pro tip: use the comma and period keys to move frame by frame)

Use grid and manipulative Pacmans to play/experiment with rotations and reflections if needed

HW: p106 #8-11 and 107