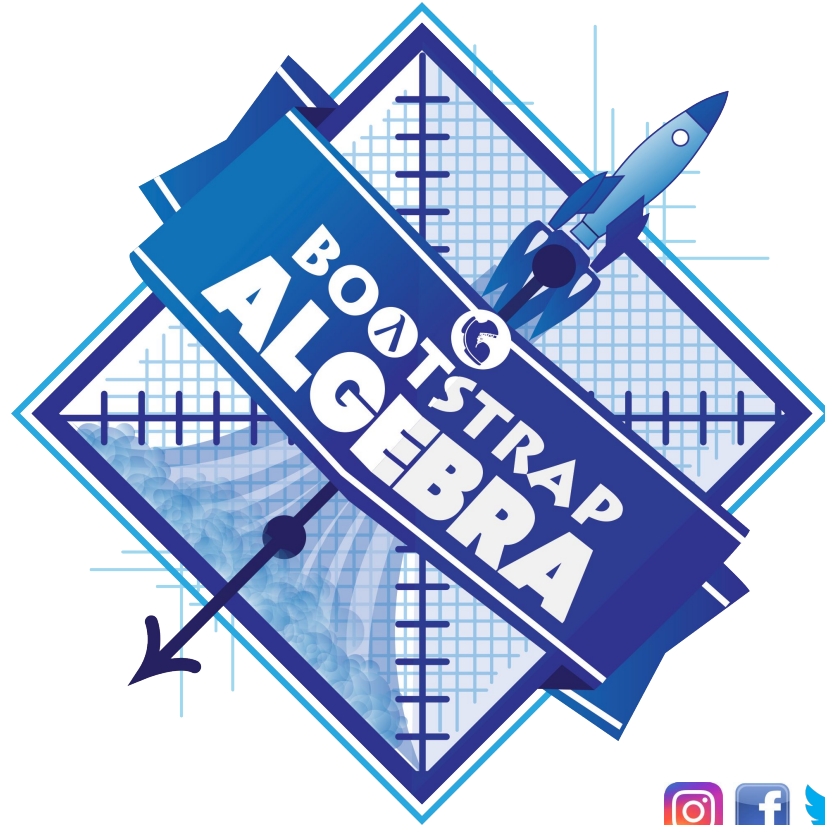


# The Numbers Inside Video Games





# Reverse Engineering a Video Game

Take turns playing the [Ninja Cat Game](#) in pairs.

Turn to [Notice and Wonder](#).

1. Write down what you *notice* about the game.
2. Write down what you *wonder* about the game?



# Reverse Engineering a Video Game

Complete [Reverse Engineer a video game](#) with your partner.



# Reverse Engineering a Video Game

- If the x- and y-coordinates are each numbers, how many numbers does it take to represent a single frame of the video game?
- How are those numbers changing - or *varying* - as the game plays? When do they increase? Decrease?
- How many numbers would we need if the dog could also move up and down?
- How many numbers would we need to have a two-player game?
- How many numbers would we need if the entire game was in 3d?
- How many numbers would we need to make a modern game?



# Connecting to Real Games

What are your favorite video games?



# Connecting to Real Games

Let's focus on one of the games we just brainstormed.

- How long do you think it took to create that game?
- How *many people* do you think it takes to create a game like that?
- How *much money* does it take to create a game like that?

*Optional:* Use the Internet to research these questions and compare the actual numbers to your estimates.



# Connecting to Real Games

There's a lot of variability, especially between game consoles and cell phone games! These are just a few examples.

Title	Time	Team Size	Budget
Call of Duty: Modern Warfare 2	2 years	500+	50m+
Final Fantasy VII	3 years	100+	40-45m
Shadow of the Tomb Raider	3+ years	100+	75m+



# Connecting to Real Games

Are we likely to create games like the ones you researched?