Breakout

Part 1

Play the game we are building:
click

Today's Game

Challenge: Add features to our Breakout game.

Goal: Build a completely playable game

Features:

- Add blocks that move side-to-side
- Accelerate the ball after every time it hits the paddle
- Add a laser to the ball
- Span pacman to eat the blocks

Moving Bricks

- Set up only certain bricks to move

- **Thoughts on how we do this?**

Moving Bricks

- Add "Sine" behavior to your brick
- Set property "Active on start" to "no" for ALL bricks on ALL levels

4. REPEAT on all layouts

2. Notice all blocks are selected

3. Set "Active on start" to "No"

1. Click to select ALL blocks

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Moving Bricks

- Now, set specific brick's Sine properties
- Use various "Movement" properties to create challenges
  - Test "Wave" and "Movement" values
- **Now ONLY those bricks will move**

2. Set Sine properties

1. Select bricks
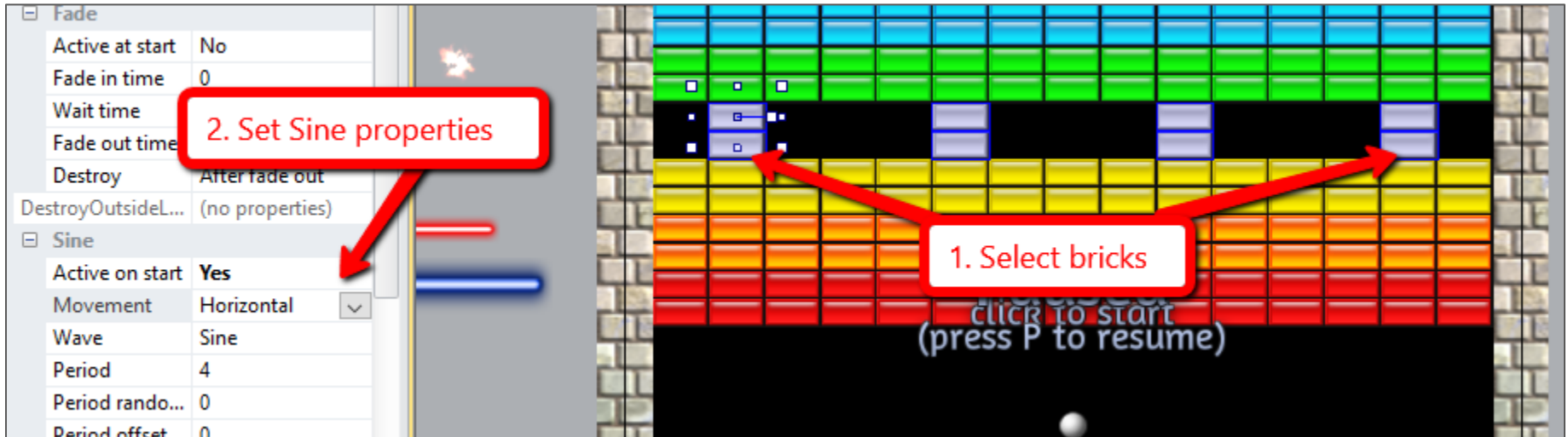
Accelerate the Ball

- Each time the ball hits the paddle, increase it's speed. Making the game move a lot faster.

- **Thoughts on how we do this?**

Accelerate the Ball

- Add another action to "**ball is overlapping paddle**" event
- Roughly line 13

		⚪ ball	Set 🖍 Bullet angle of motion to *ball.direction* degrees
			Add action
13	⚪ ball	Is overlapping 👆 **paddle**	⚪ ball	Set 🖍 Bullet angle of motion to *270+75 * (Ball.X - paddle.X) / (paddle.Width / 2)* degrees
				Add action
14	⊟ **Powerballs**			

- **Hint: Ball is using "Bullet" behavior. What should that action be?**

Accelerate the Ball

- Increase the "**bullet**" speed each time by 1, up to 280
- "**ball.Bullet.Speed**" is the current speed
- Increase by "1"
- Use this value:
  - **max(ball.Bullet.Speed+1, 280)**

Parameters for ball (Bullet): Set speed

The new speed of the object to set, in pixels per second.

Speed | max(ball.Bullet.Speed+1, 280)

Cancel   Help on expressions   Back   Done

ball	Is overlapping ⟶ **paddle**	ball	Set 🖊 Bullet angle of motion to *270+75 * (Ball.X - paddle.X) / (paddle.Width / 2)* degrees
		ball	Set 🖊 Bullet speed to *max(ball.Bullet.Speed+1, 280)*
			Add action
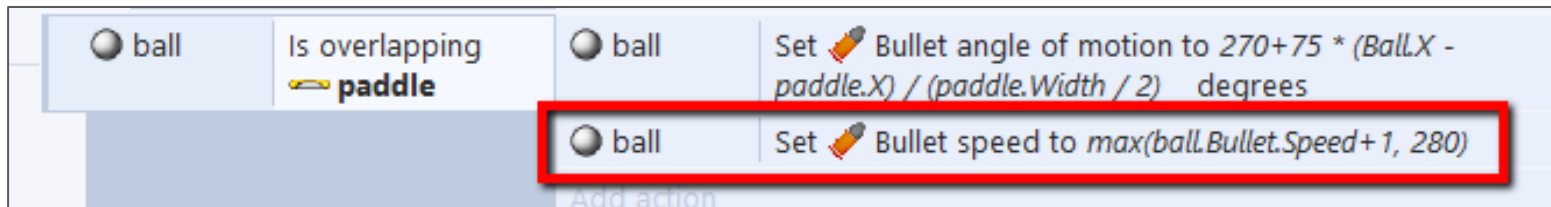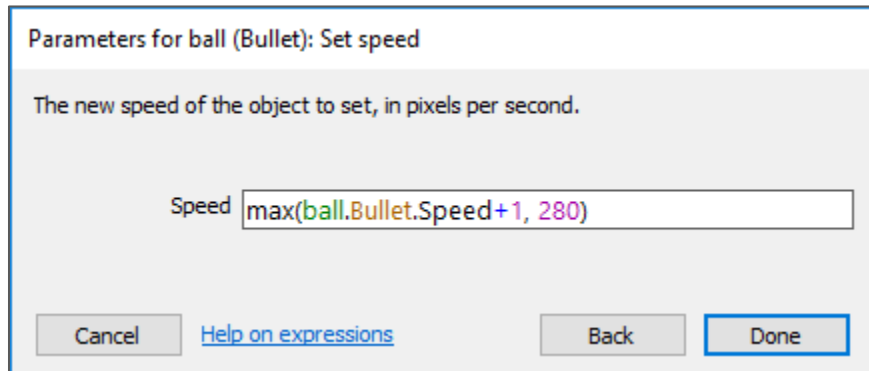
Accelerate the Ball

- Two other minor tweaks
  - Make sure the ball is **NOT** touching your paddle when the game starts
  - Adjust the ball's initial "**angle of motion**" so it goes UP initially
    - (Add action to Event # 7)

Shoot More Lasers

- Change the "small ball" power up to allow the ball to shoot a laser.

- **Thoughts on how we do this?**

Shoot More Lasers

1. Add a new **sub-event** when the "click" occurs
2. Check to see if "**small**" ball animation is playing
3. Spawn "**redLazer**"
4. Set **random angle**

(remember random?)

Spawn Pac-man

- A power-up that turns your ball into Pac-man and let's the player use the keyboard to eat the bricks.

- **Thoughts on how we do this?**
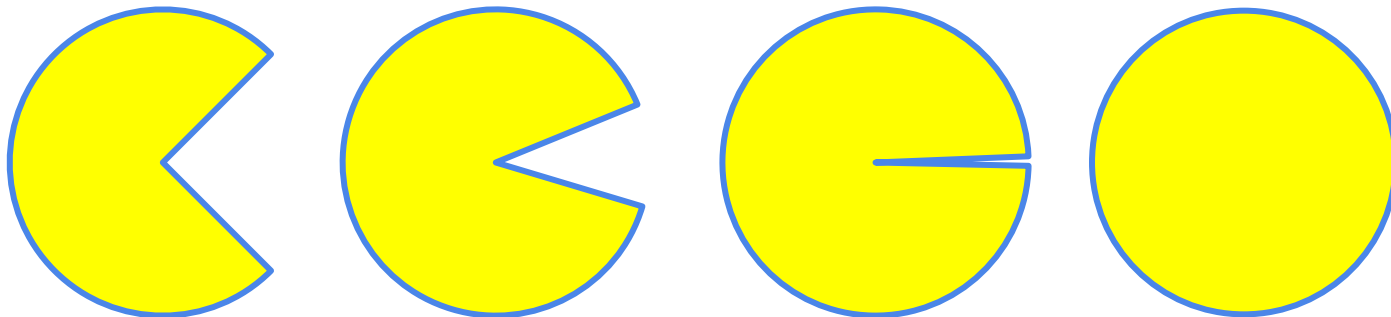
Spawn Pac-man

- Here's what Will would do it
  1. Change the "**large**" ball Power-up to spawn Pac-man
  2. Add keyboard events to change bullet direction while "**pacman**"
  3. Add "**pacman**" behavior to the "**thru**" ball behavior
 4. Celebrate!

- **Want to try it?**

Spawn Pac-man

- Add Pac-man animation to the "**ball**"
- Change animation on "**largeBall**" power up (roughly row 17)

17	→ powerup	On collision with **paddle**	ball	Set animation to "large" (play from beginning)
			ball	Set animation to "pacman" (play from beginning)
	powerup	Is animation "largeBall" playing	powerup	Destroy

- Add keyboard Events to change direction

| 54 | ball | Is animation "pacman" playing | | Add action |
55	Keyboard	**Up arrow** is down	ball	Set Bullet angle of motion to *270* degrees
				Add action
56	Keyboard	**Right arrow** is down	ball	Set Bullet angle of motion to *0* degrees
				Add action
57	Keyboard	**Down arrow** is down	ball	Set Bullet angle of motion to *90* degrees
				Add action
58	Keyboard	**Left arrow** is down	ball	Set Bullet angle of motion to *180* degrees
				Add action

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Spawn Pac-man

- Add an "**or**" condition to the "**thur**" ball action for "**pacman**" animation

○ ball	Is animation "thru" playing	▭brick	Spawn ■ **explosion** on layer **2** *(image point 0)*
		■explosion	Set animation to **"blue"** (play from beginning)
	- or -	■explosion	Rotate *random(360)* degrees clockwise
○ ball	Is animation "pacman" playing	▭brick	Destroy
		○ ball	Set 🖌 Bullet angle of motion to *ball.direction* degrees

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- Fix cheat code!

48	➡⌨Keyboard	On **2** pressed	○ ~~ball~~	~~Set animation to **"large"** (play from beginning)~~
			○ ball	Set animation to **"pacman"** (play from beginning)
			○ ball	Set 🖌 Bullet speed to *200*