CoderDojo Athenry

EXPLORERS

Code and Notes by Martha Fahy, 2019

CoderDojo Athenry
"Above all, be cool"

Every week:
- ✓ Sign in at the door

If you are new:
- ✓ Fill in Registration Form
- ✓ Ask a Mentor how to get started

Make sure you are on the Athenry Parents/Kids Google Group: email coderdojoathenry@gmail.com

Weekly Reminders

- **Fire exit doors/main doorways must be kept clear AT ALL TIMES**

- **In the case of an emergency , please proceed in a calm and orderly manner to the nearest Exit and go to your Assembly Point**

Fire assembly point

Do **NOT** take anything with you
If you have a child in another room, do **NOT** go to them, a Mentor will look after them

- **Please leave passageways between desk and keep CLEAR at all times**

THINK SAFETY FIRST!

- **If power cable goes across passageways – must be TAPED DOWN ask mentor for tape**

- **ONLY NINJAS** need a table - parents, please only use a chair

- **If FIRST AID is required please alert a Mentor**

There are a number of trained first responders on site every week

€2

Coffee / Tea +

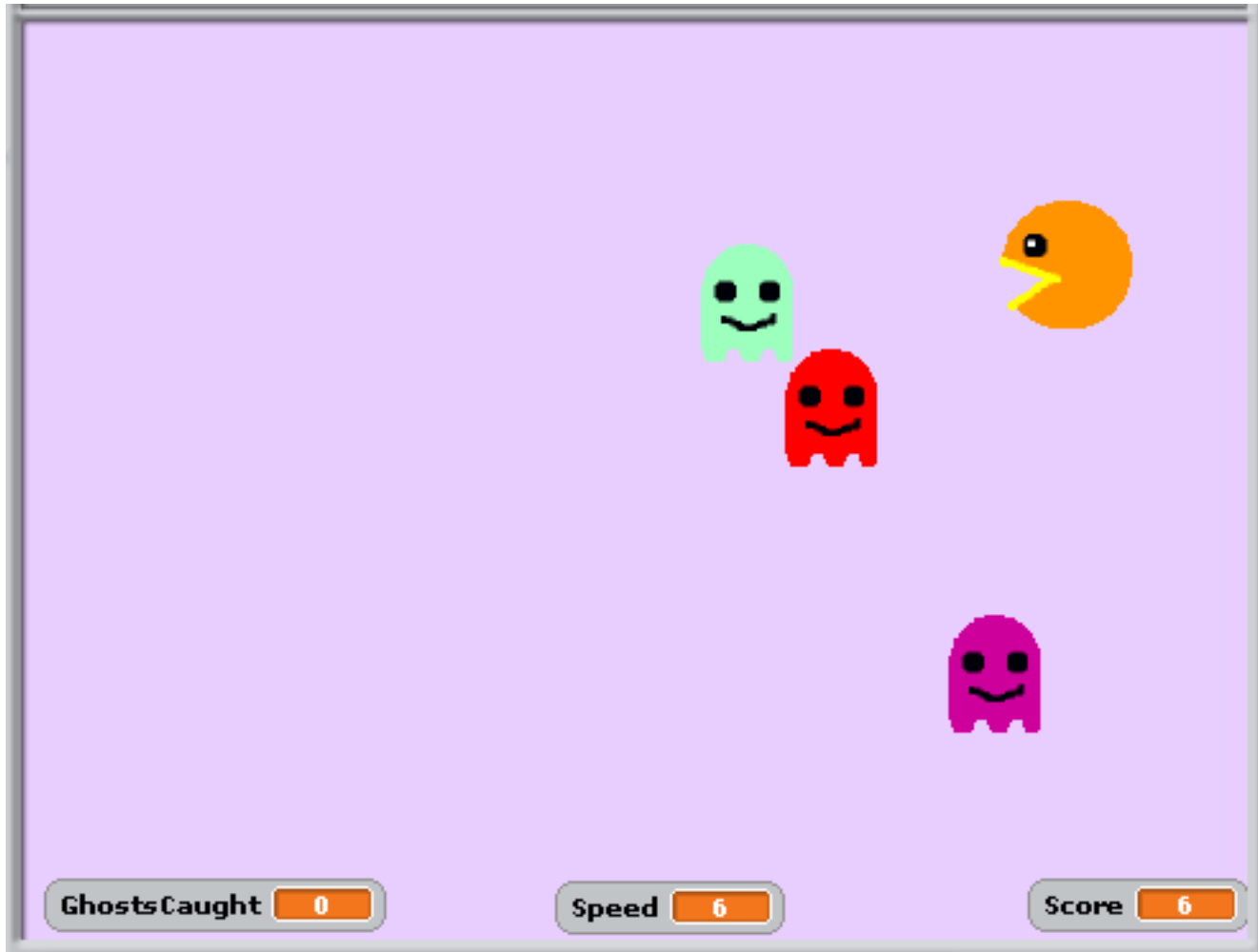# *Help us cut down on Single Use Cups*

Bring your own cup (must have lid)

€1.50

Today's Challenge:
Create a GhostBuster Game Like This

Today's **Big** Ideas

Designing your game

Loops & Decisions

Variables

How to Get Started

Plan the Design

- Think first!
- Start simple: add more later

Create First Character

- Design it: appearance & behaviours
- Write script (Code) to control its behaviours

Test It

- Any bugs? (Not working as expected)
- Debug and Improve

Extend It

- More Characters, More Behaviours, More Testing!

Steps To Make This Game

Create your **Ghost Catcher**: appearance?

Code to control it with Arrow Keys

Change the **Stage**:
Plain coloured background or Maze?

Create first **Ghost**: appearance & code
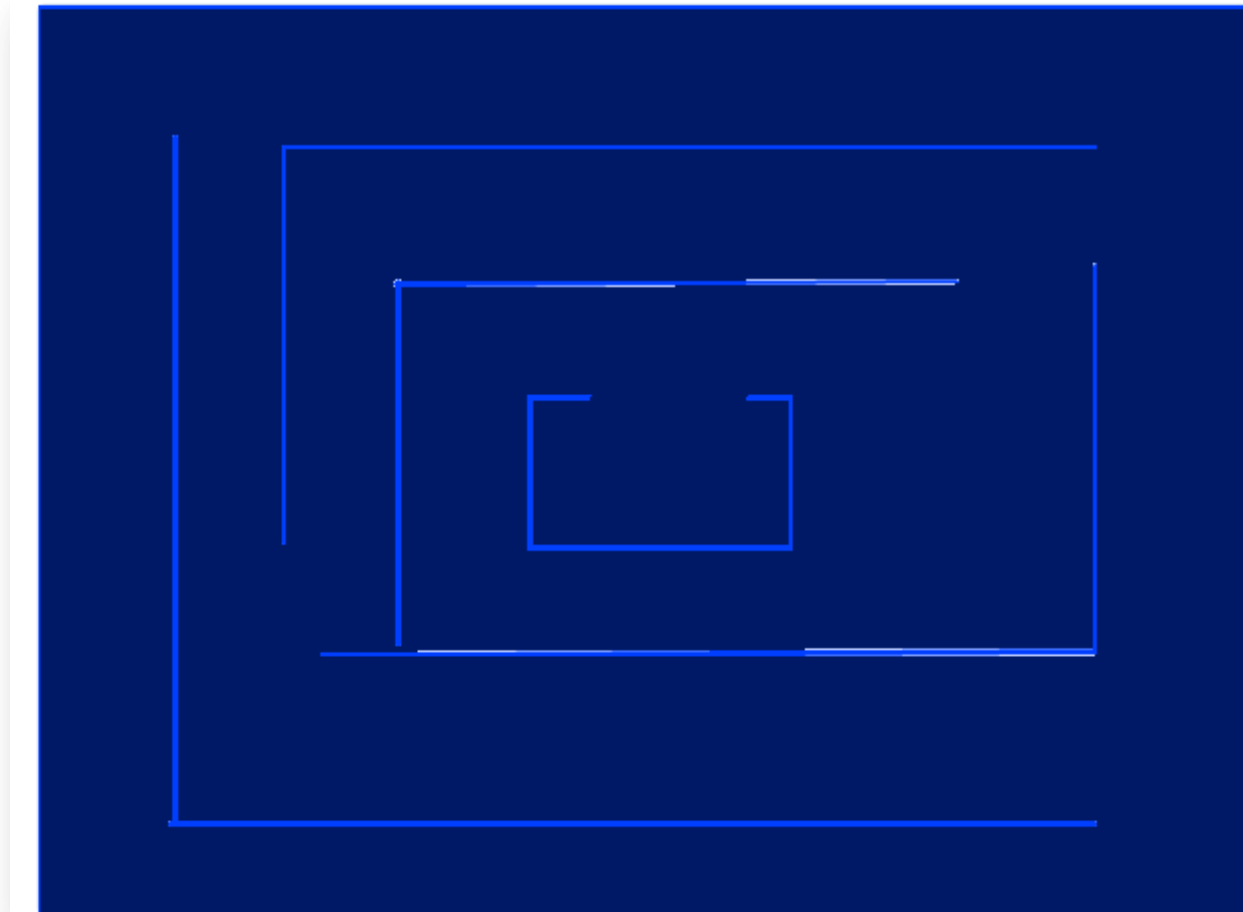
Duplicate it when it is working

Make things happen when
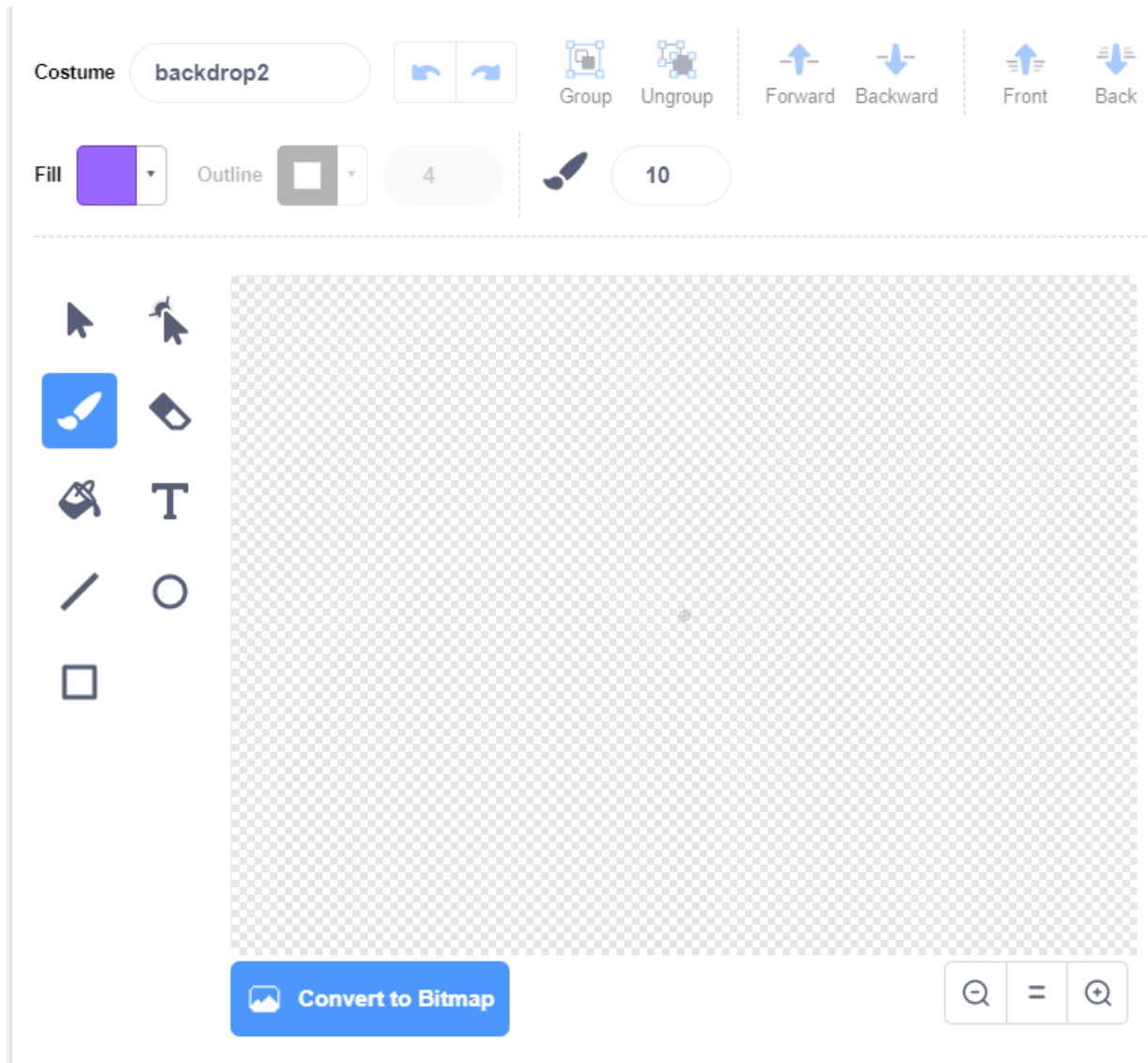a Ghost is **caught**

Add **variable** for **Score**
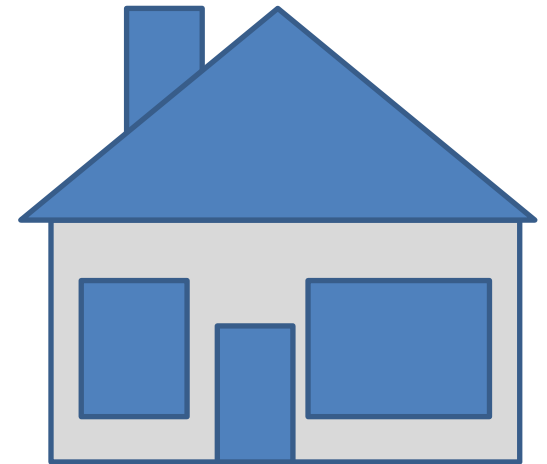
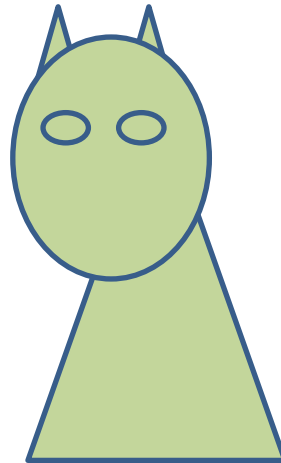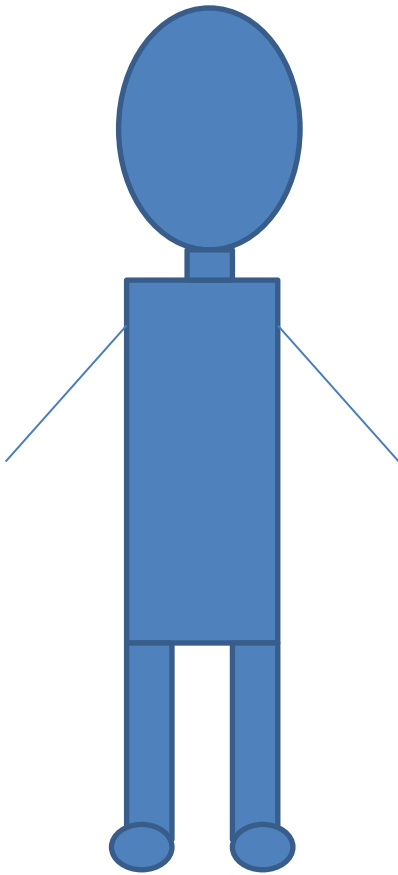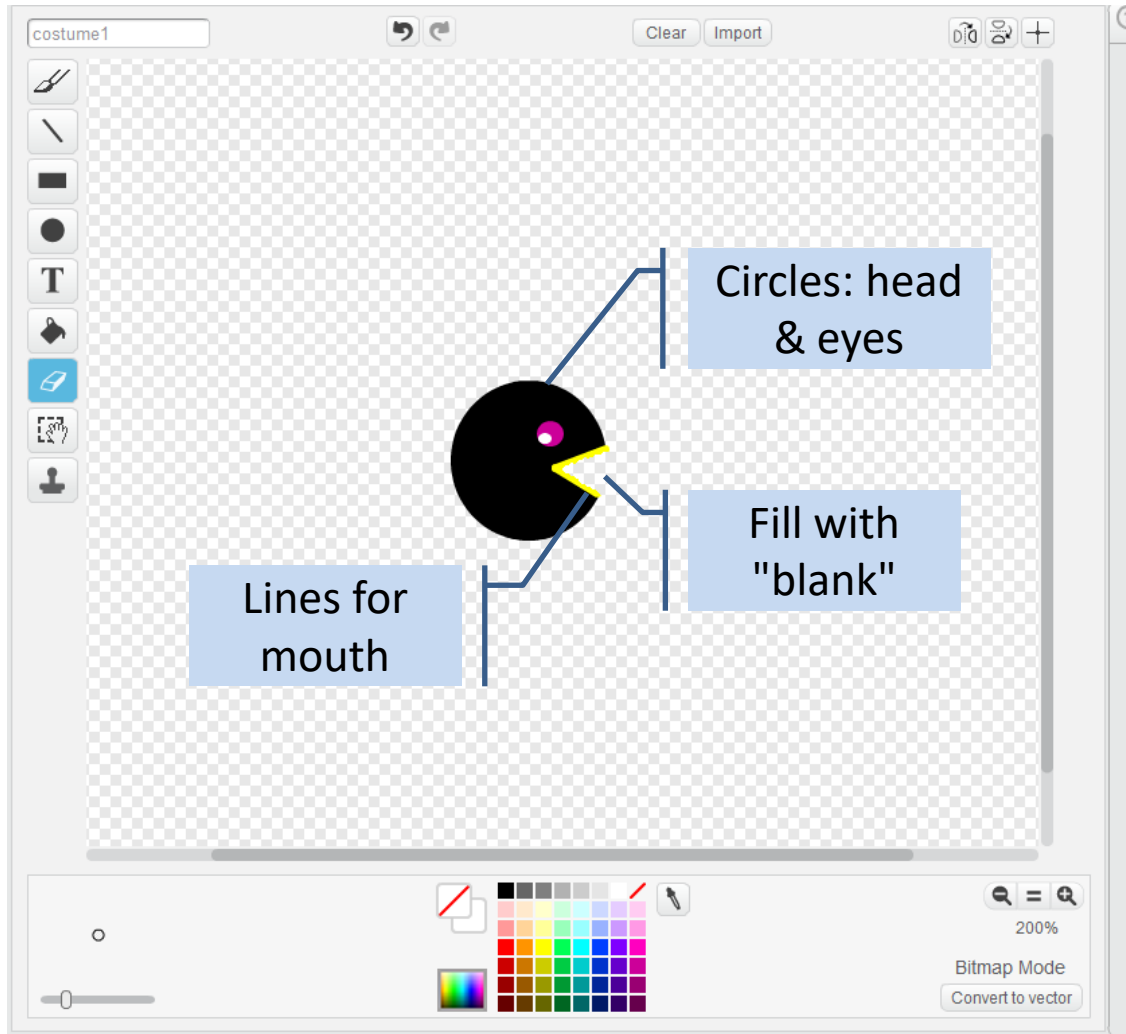Optional: New **level** when all caught

Background
Draw a Maze!

Paint Editor in Scratch

Think in Shapes

Design PacMan and a Ghost

costume1 | Clear | Import | 200%

Circles: head & eyes

Fill with "blank"

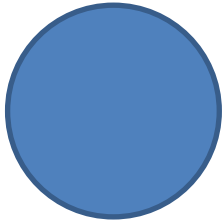Lines for mouth

Circles, Rectangle & Paintbrush

Bitmap Mode
Convert to vector

TIP: Use distinctive colour (e.g. yellow) at front/mouth: will use this when detecting if ghost is eaten
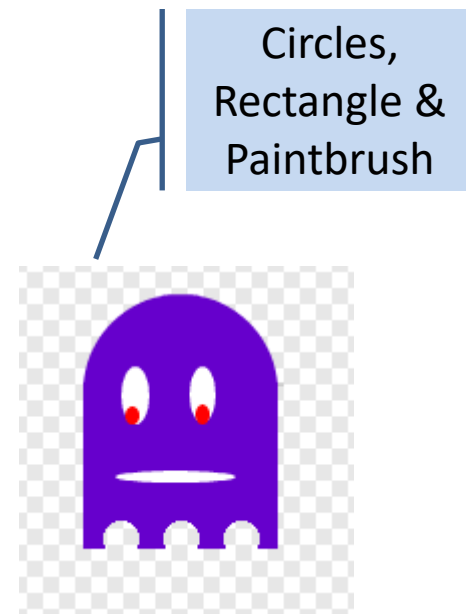
Design food for PacMan

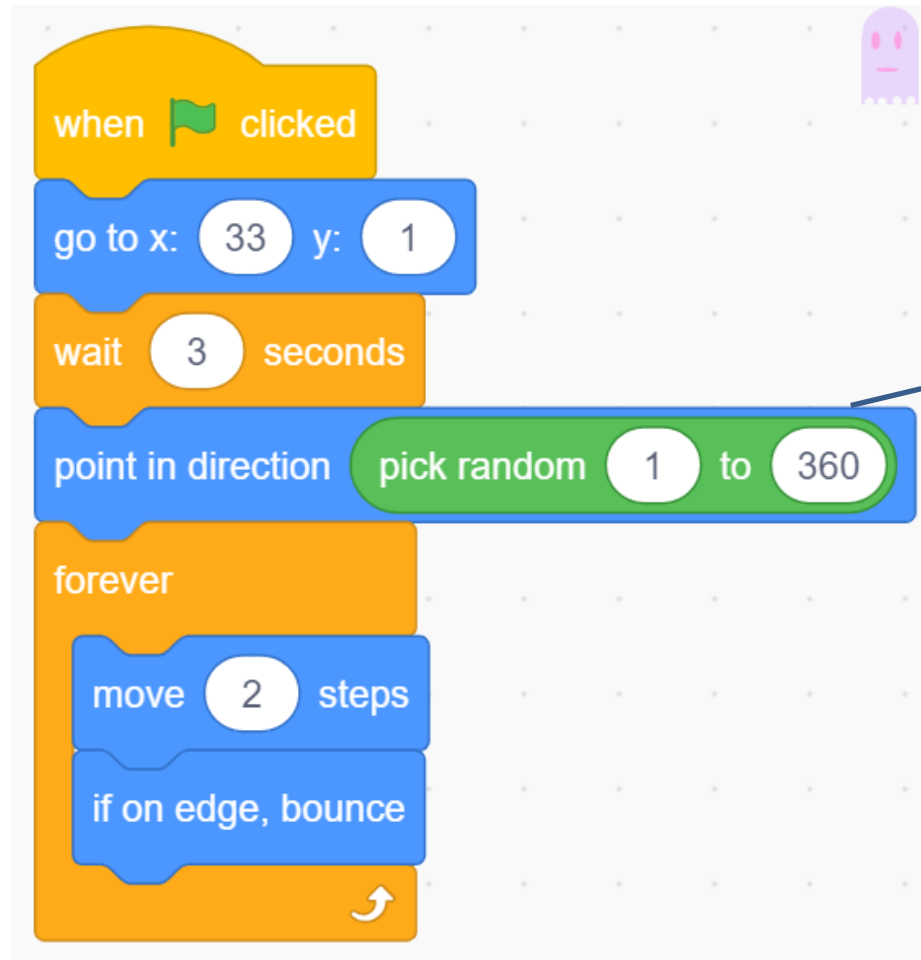# Make PacMan Move with Arrow Keys

Code for Food


```
when 🚩 clicked
show
forever
    if  touching PacMan ? then
        broadcast eaten
        hide
```
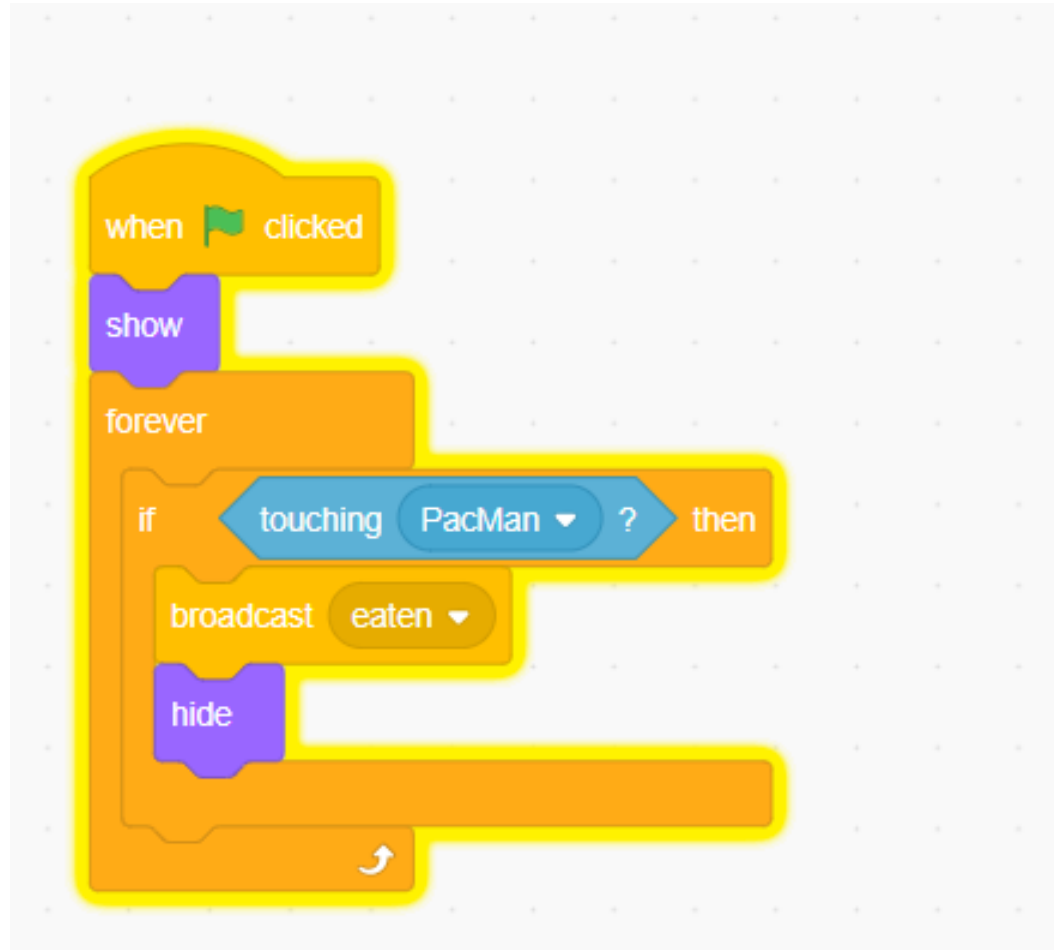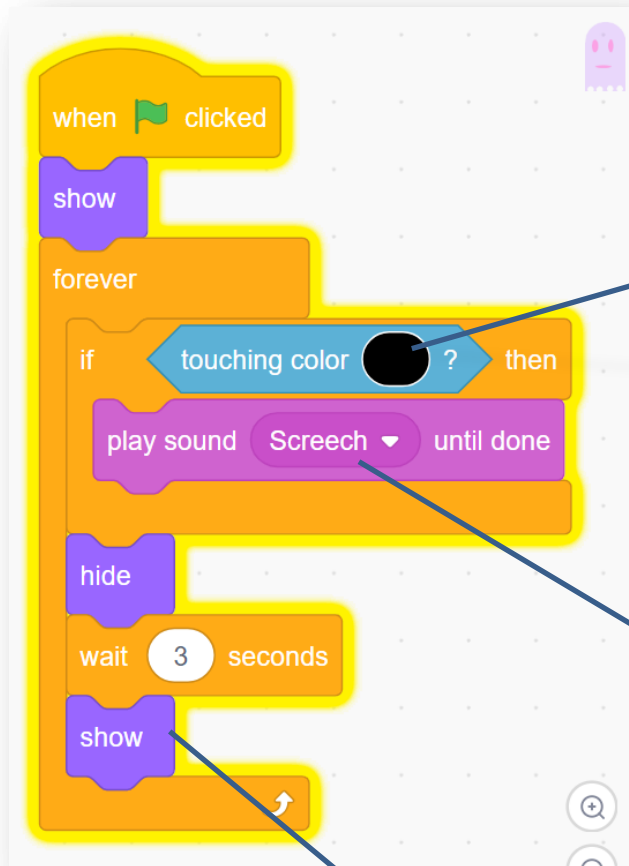
Make Ghost Move Around

What is significance of 1-360?

TIP: Get one ghost working fully – you can duplicate it later.
Right-click on a sprite to duplicate it.
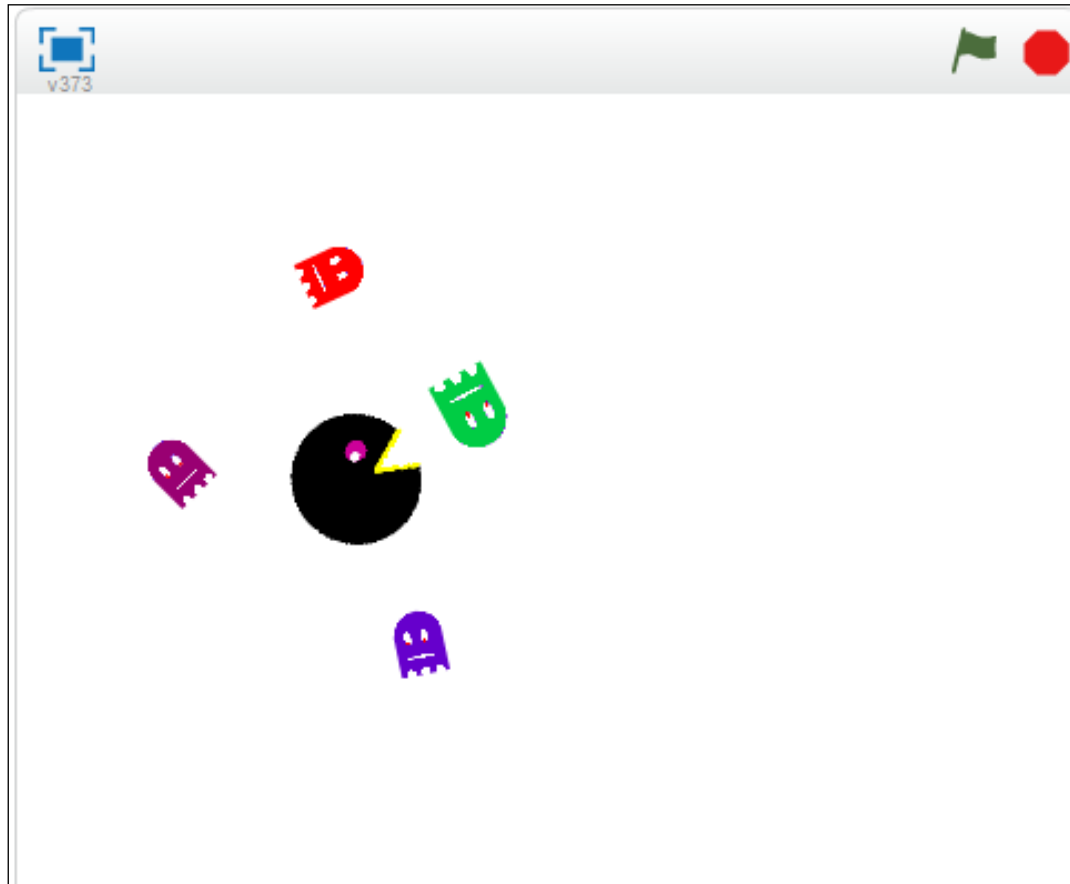
When PacMan **Gets Ghost** …

when 🚩 clicked
show
forever
if touching color ⬤ ? then
play sound Screech ▼ until done
hide
wait 3 seconds
show

How we detect PacMan: colour of its mouth

Switch to Sounds tab & RECORD sound

Show at start.
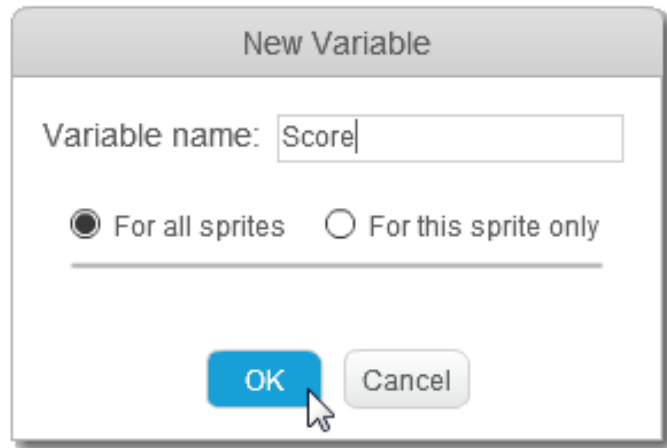Hide when eaten.
Wait & show again.

Duplicate Ghost,
Make Each One Look Different

Variables

To keep score, need a **Variable**:

- A key programming concept
- Stores a **Value** (number/text data): this can vary
- Has a **Name** – this is fixed: use this in the code to compare/change values
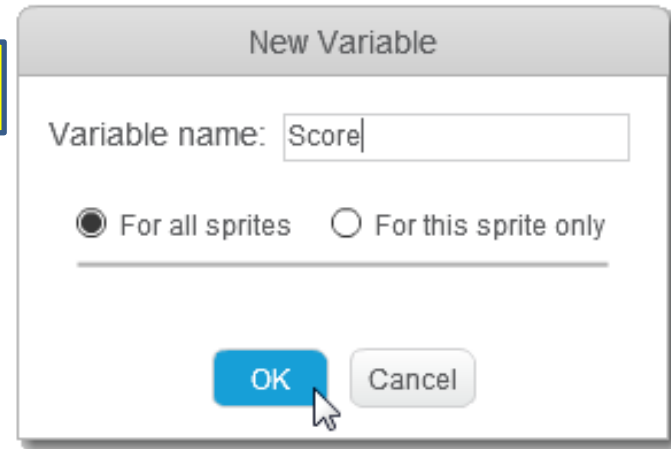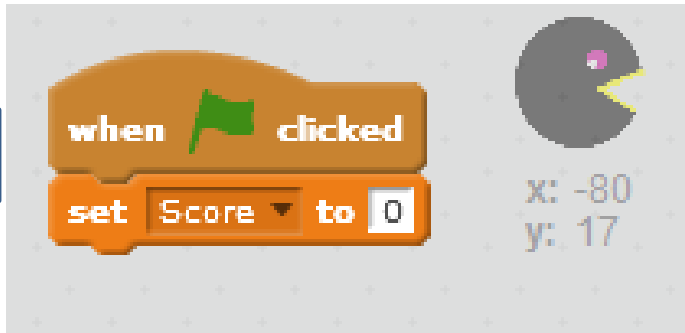
Variable to Keep Score

To do:

1. Make variable

2. Set it to 0 at start

3. Add 1 each time a ghost is killed

New Variable

Variable name: Score

◉ For all sprites   ○ For this sprite only

OK   Cancel

when 🚩 clicked

set Score to 0

x: -80
y: 17

If You Want to Do More …

Add Levels:

When you have caught 6 ghosts,
make the ghosts go faster

You will need:

Variable for **Speed**, initially 2

Variable for **GhostsCaught**

Code: when **GhostsCaught** = 6,
set it back to 0 and increase Speed by 2

If You Want to Do More …

Make a variable **Speed**

Set it to 2 at start

Change ghosts to move at that speed

Make variable **GhostsCaught**
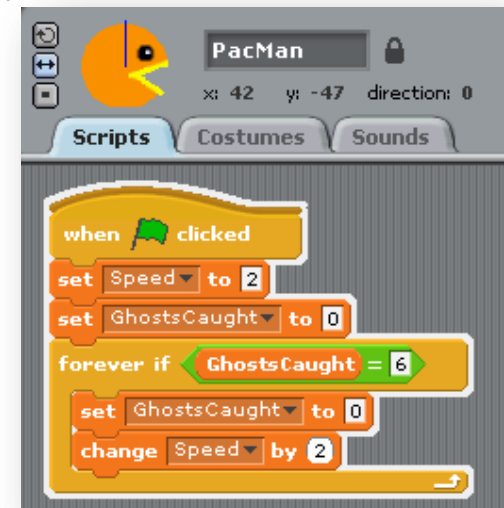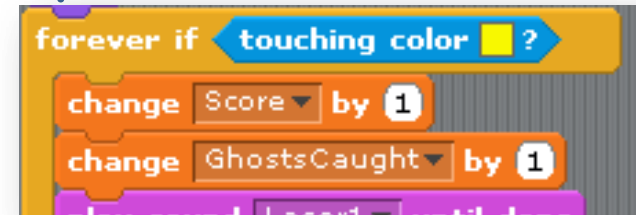
When ghost is caught,
Change by GhostsCaught by 1
(beside where you change Score by 1)

Add code to PacMan:

Set **GhostsCaught** to 0 at start

If **GhostsCaught** is 6

- Change back to 0
- Increase **Speed** by 2

Keep In Touch!

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