

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

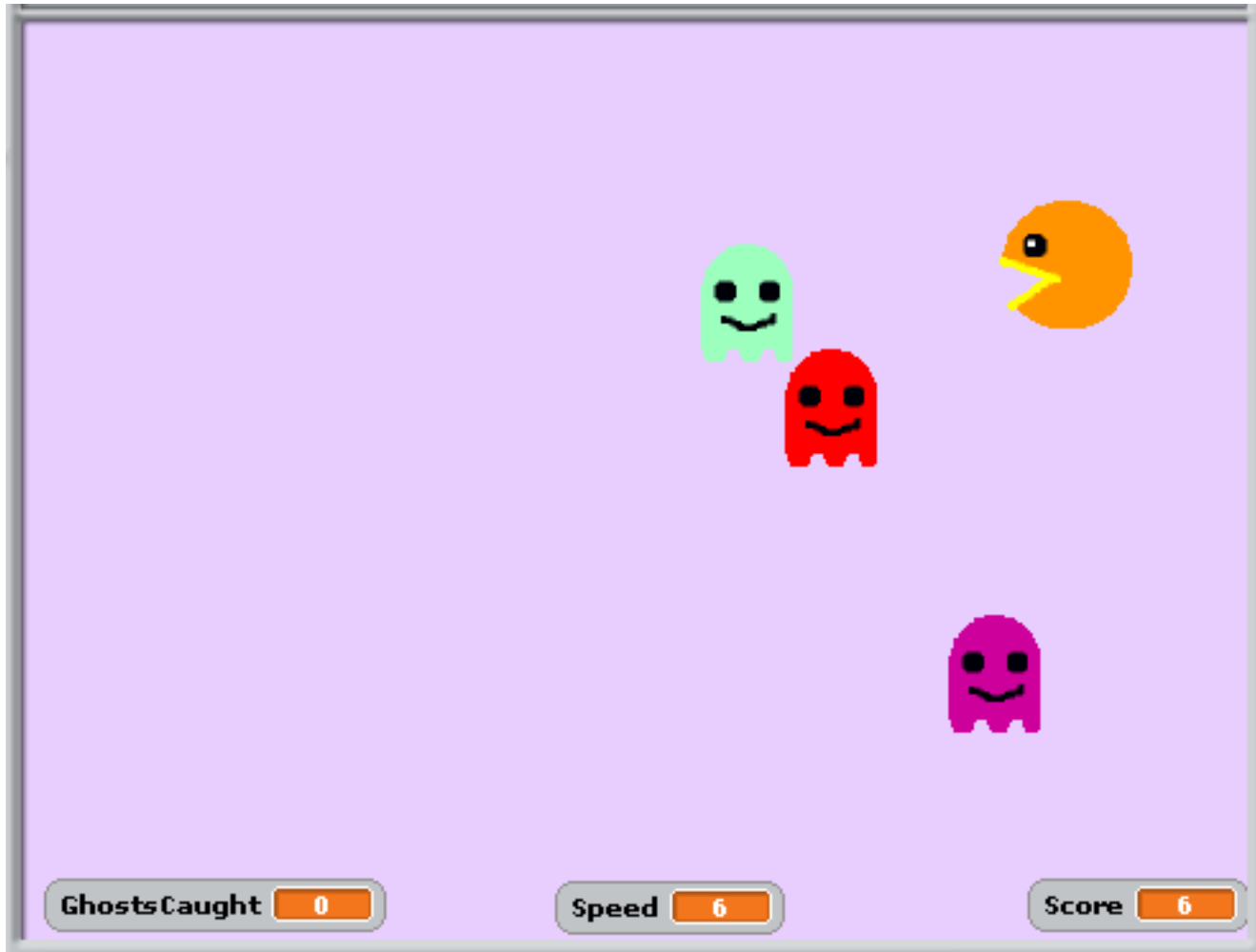
CoderDojo Athenry

SCRATCH Beginners



Code and notes by Martha Fahy, 2014

Today's Ninja Challenge: Create a **GhostBuster** Game Like This



Today's **Big** Ideas

Designing
your game

Loops &
Decisions

Variables



How to Get Started

Reminder
from Week 1

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 mouse



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



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

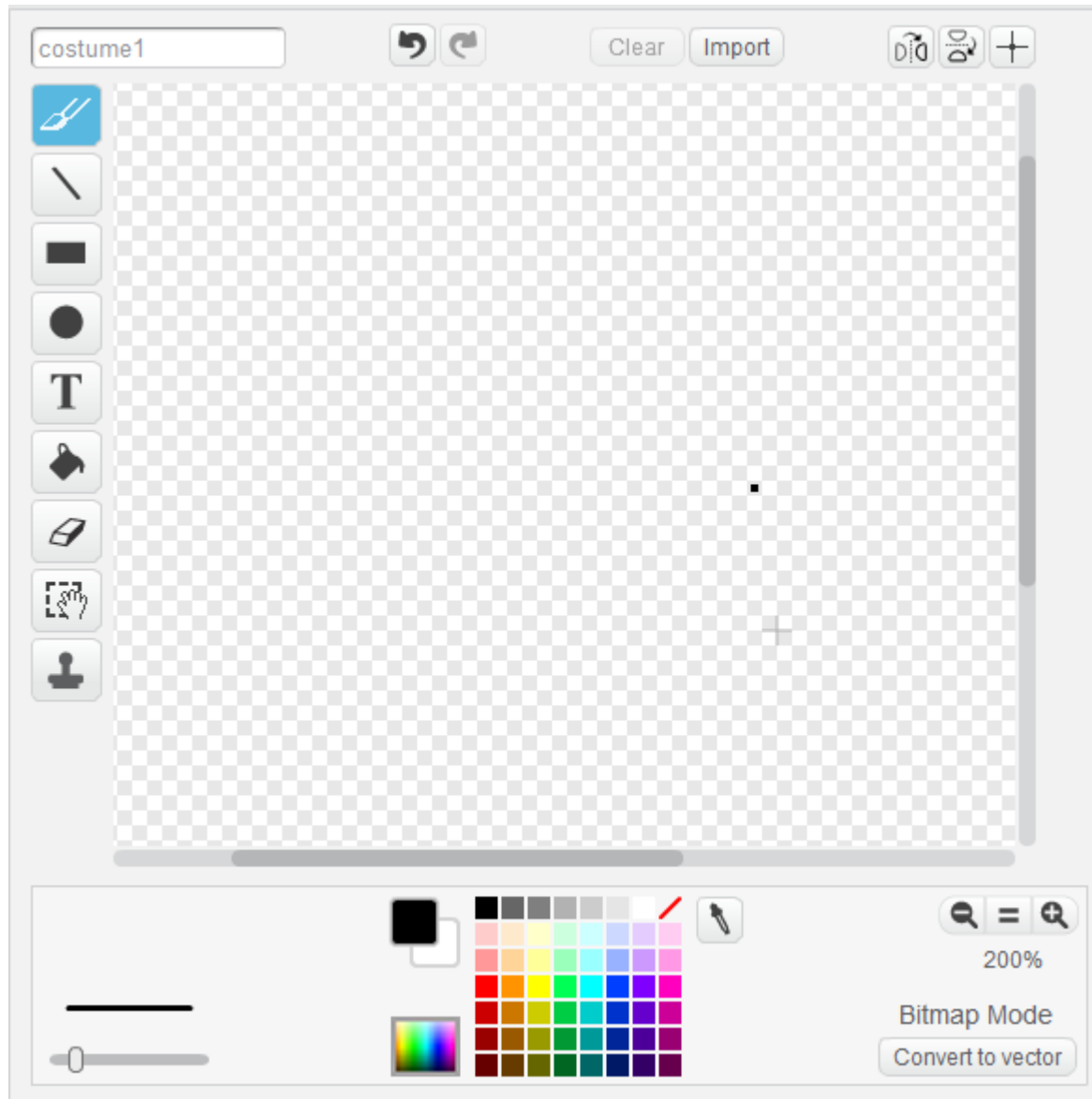


Make things happen when
a Ghost is **caught**

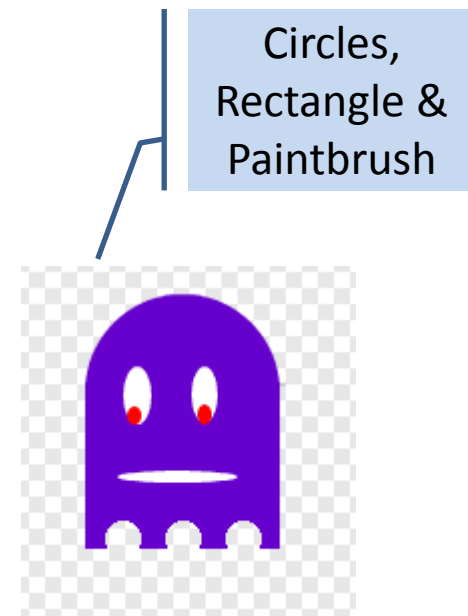
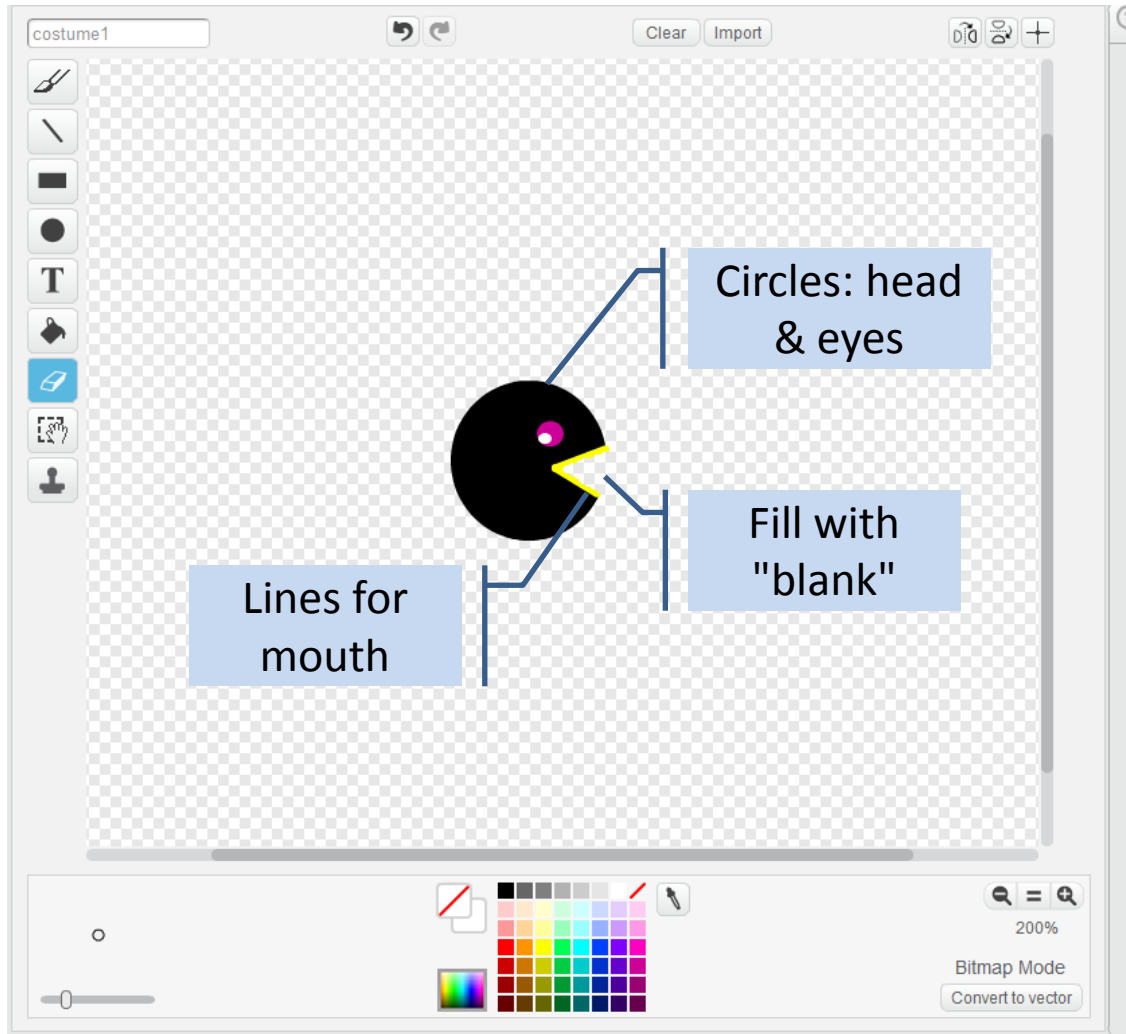


Add **variable** for **Score**
Optional: New **level** when all caught

Paint Editor in Scratch

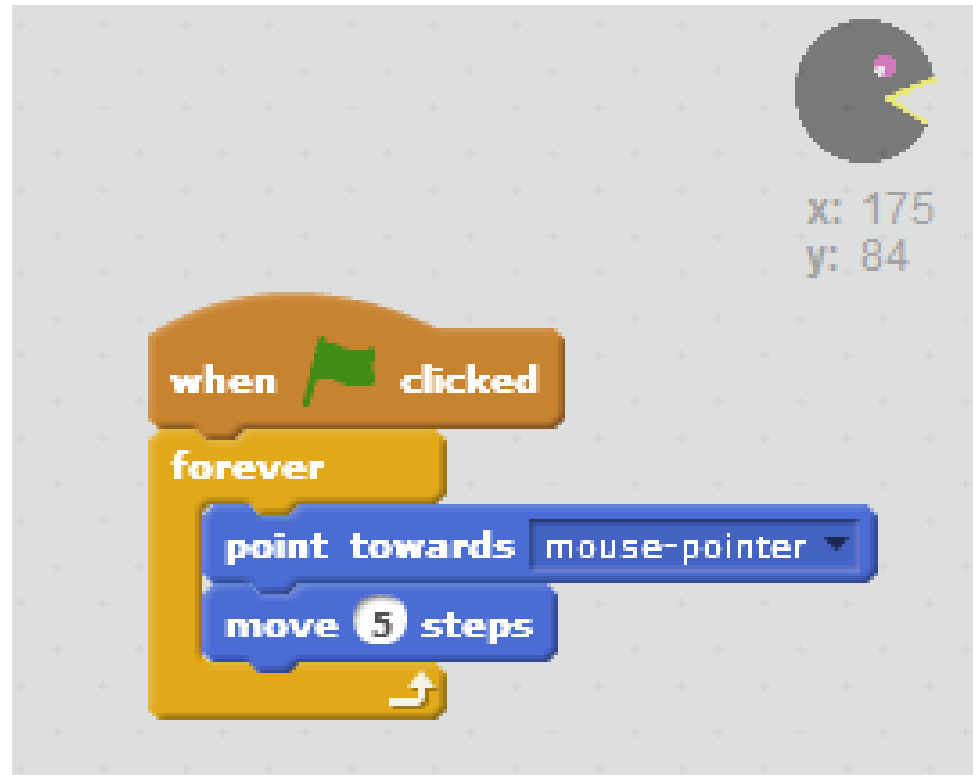


Design PacMan and a Ghost

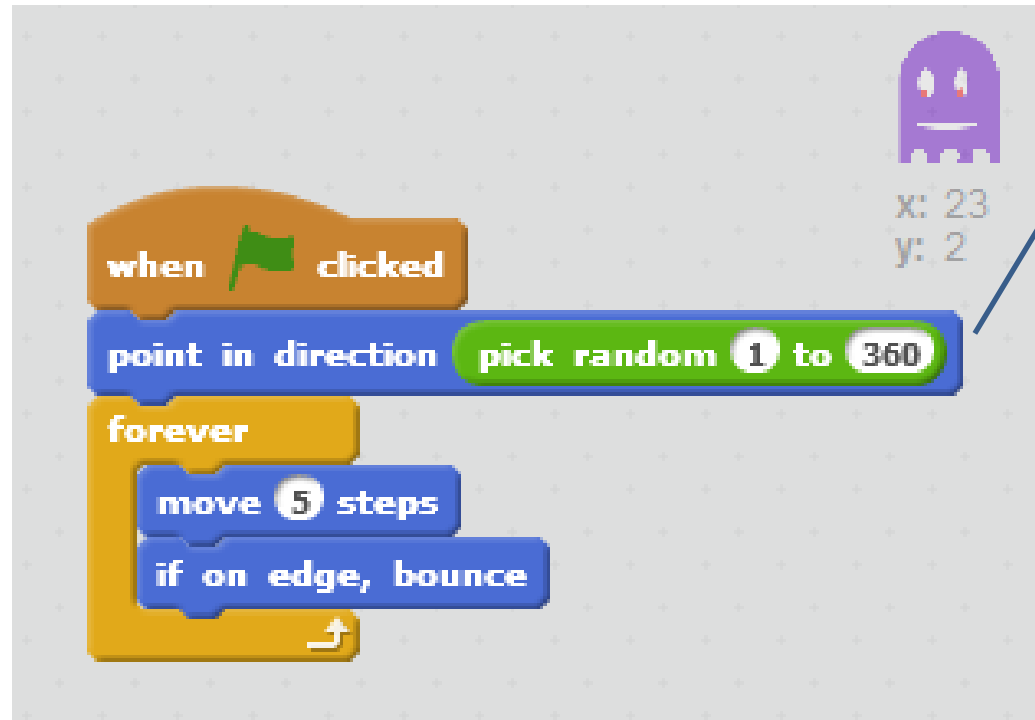


TIP: Use distinctive colour (e.g. yellow) at front/mouth: will use this when detecting if ghost is eaten

Make PacMan Follow the Mouse



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.

Loops and Decisions

Key programming concepts

Loop:

Repeat code multiple times

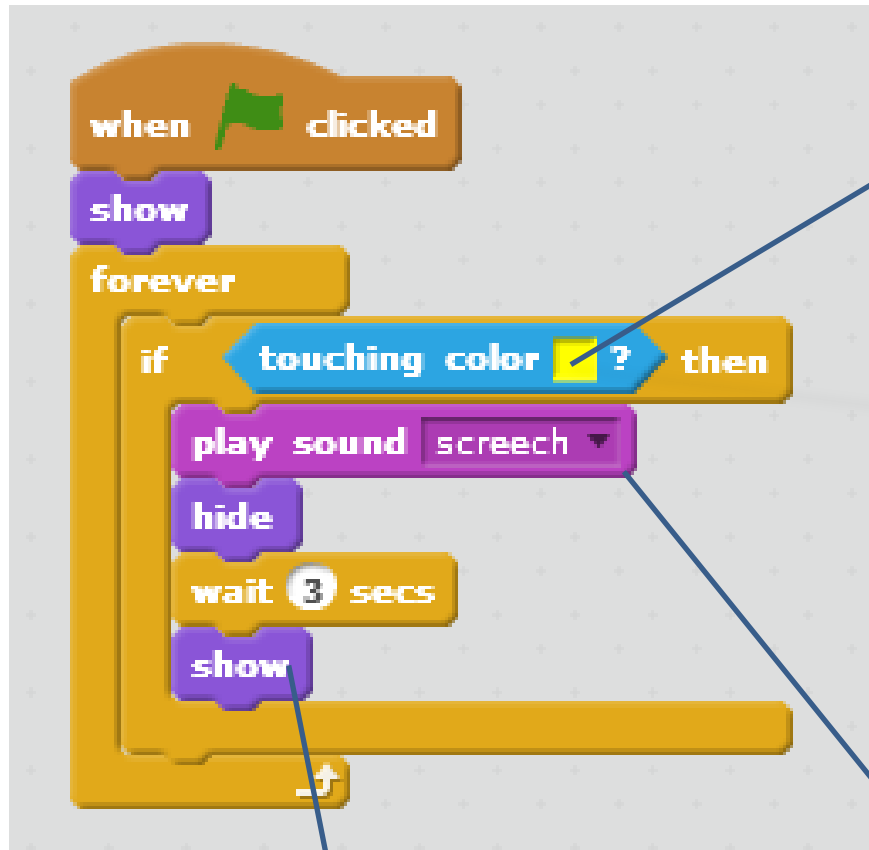


Decision:

Decide whether or not to do something



When PacMan Gets Ghost ...

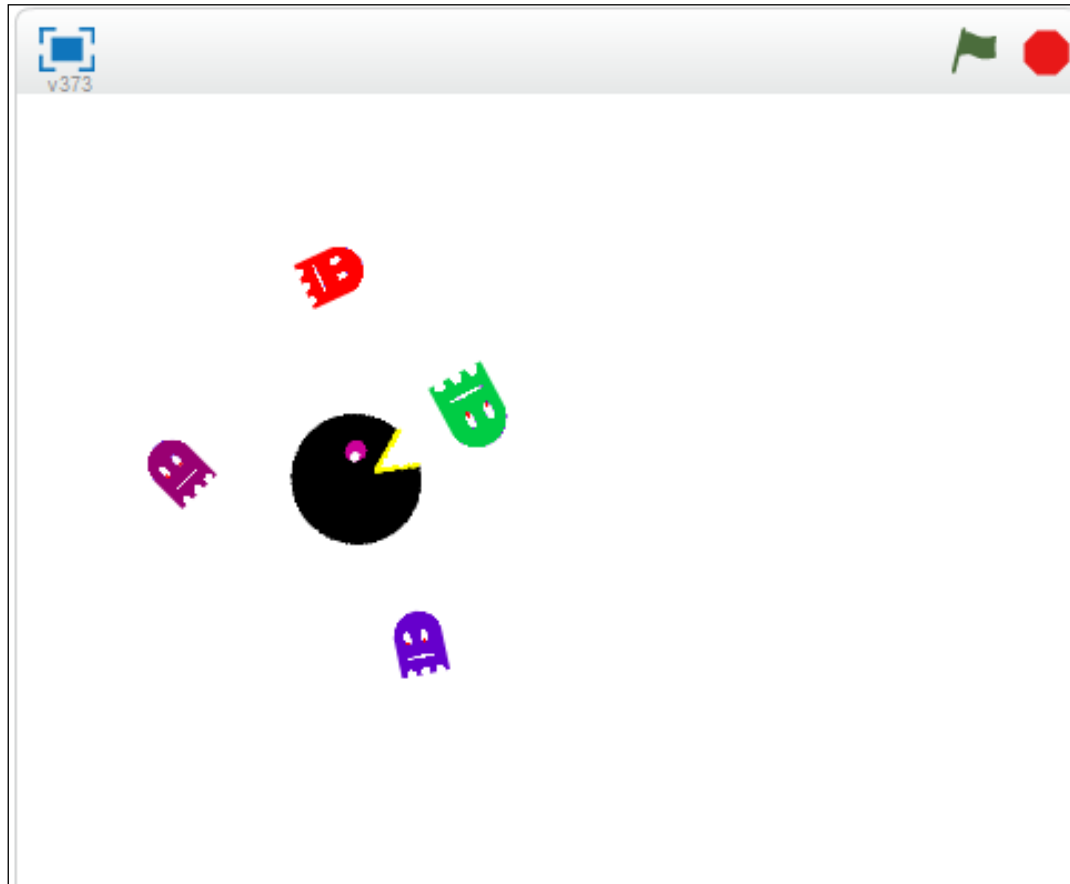


How we detect PacMan: colour of its mouth

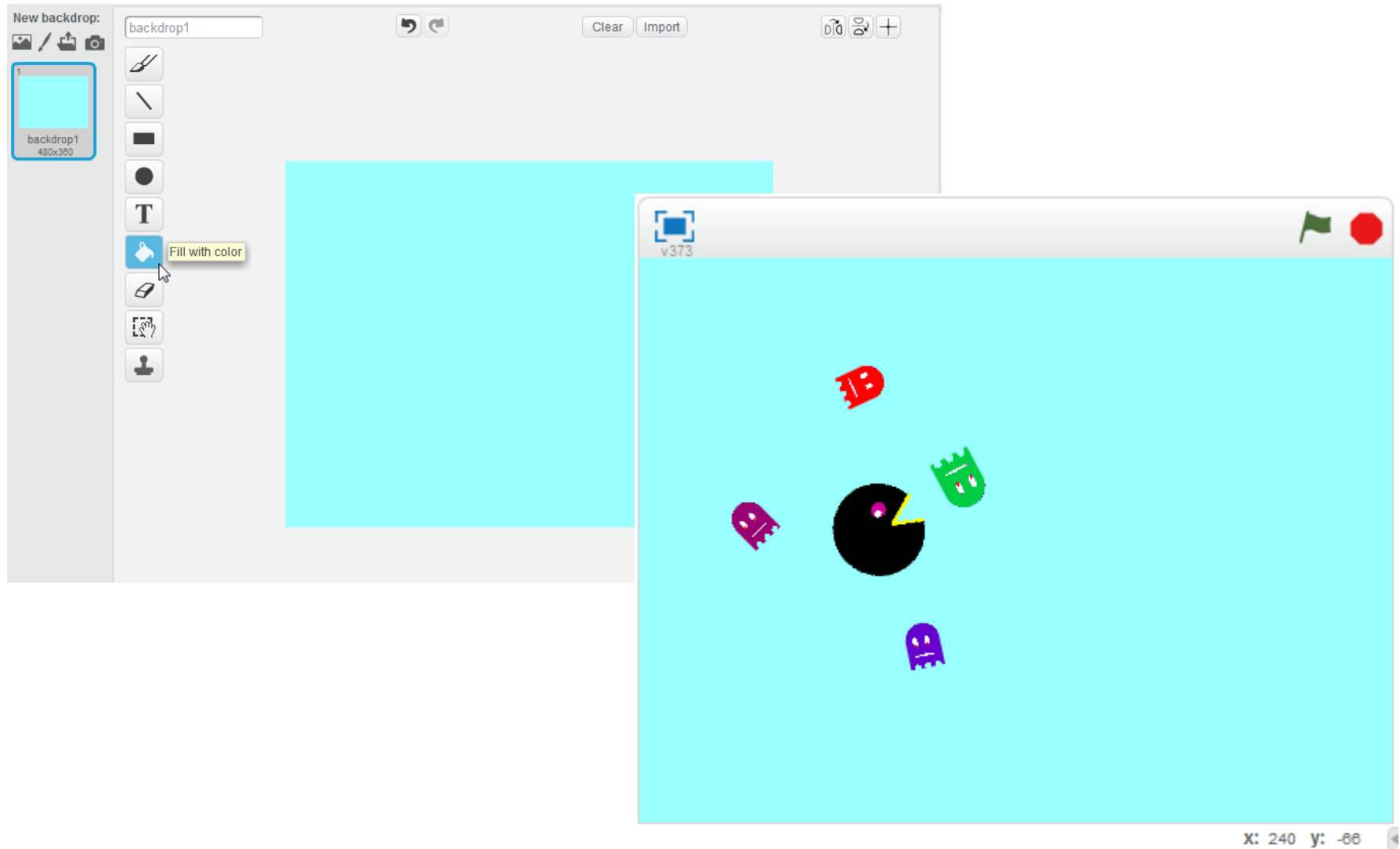
Switch to Sounds tab & RECORD sound

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

Duplicate Ghost, Make Each One Look Different



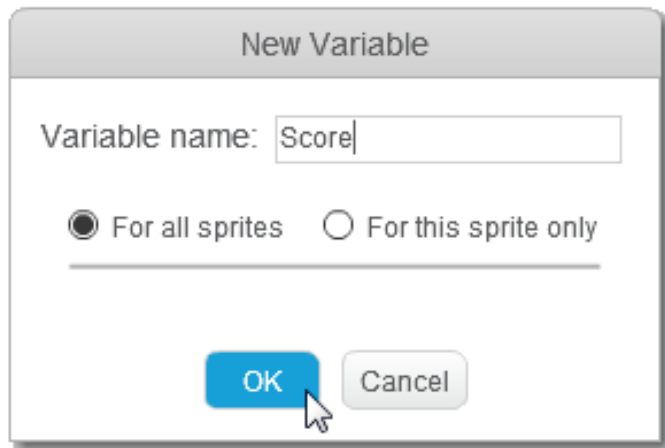
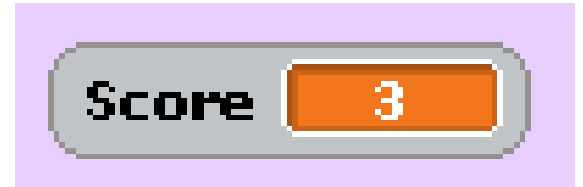
Add a Colour Background,



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

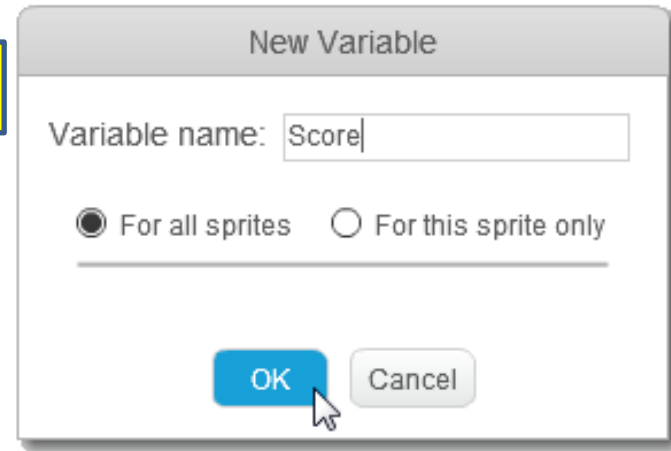
Variables can be:

- **Global** (for all sprites): what we will use
- **Local** (one sprite only)

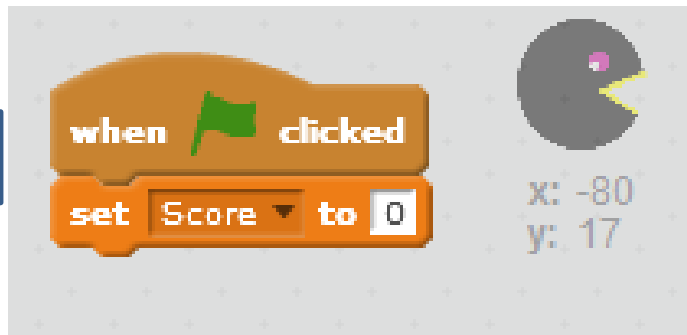
To do:

1. Make variable
2. Set it to 0 at start
3. Add 1 each time a ghost is killed

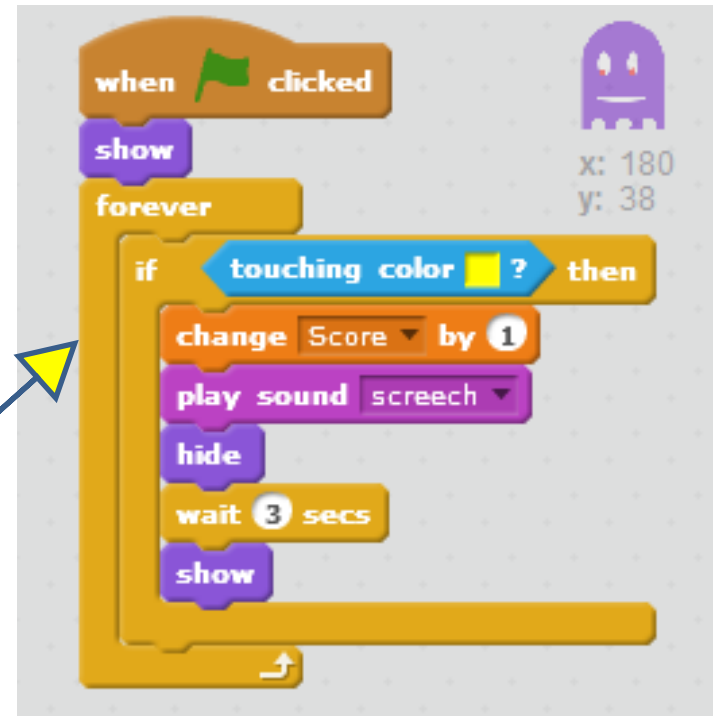
1



2



Add this to every ghost



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**

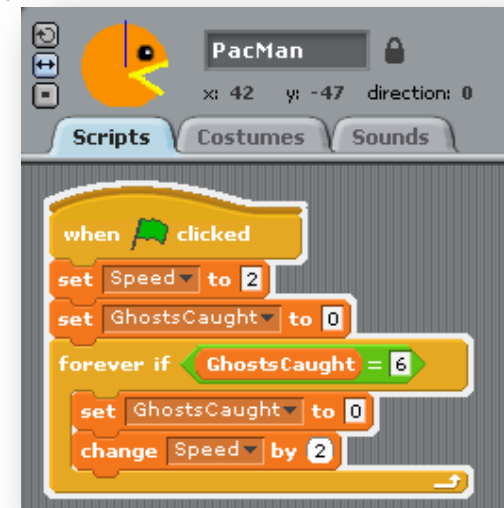
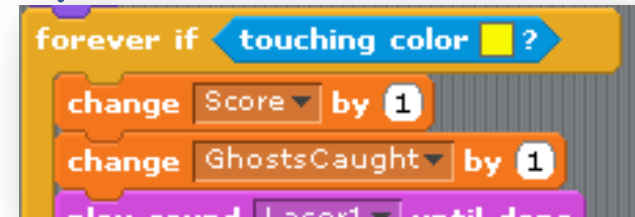
When ghost is caught,
Change by **GhostsCaught** by 1
(beside where you change Score by 1)

Add code to PacMan:

Set **GhostsCaught** to 0 at start

If **GhostsCaught** is 6

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



At the End ...

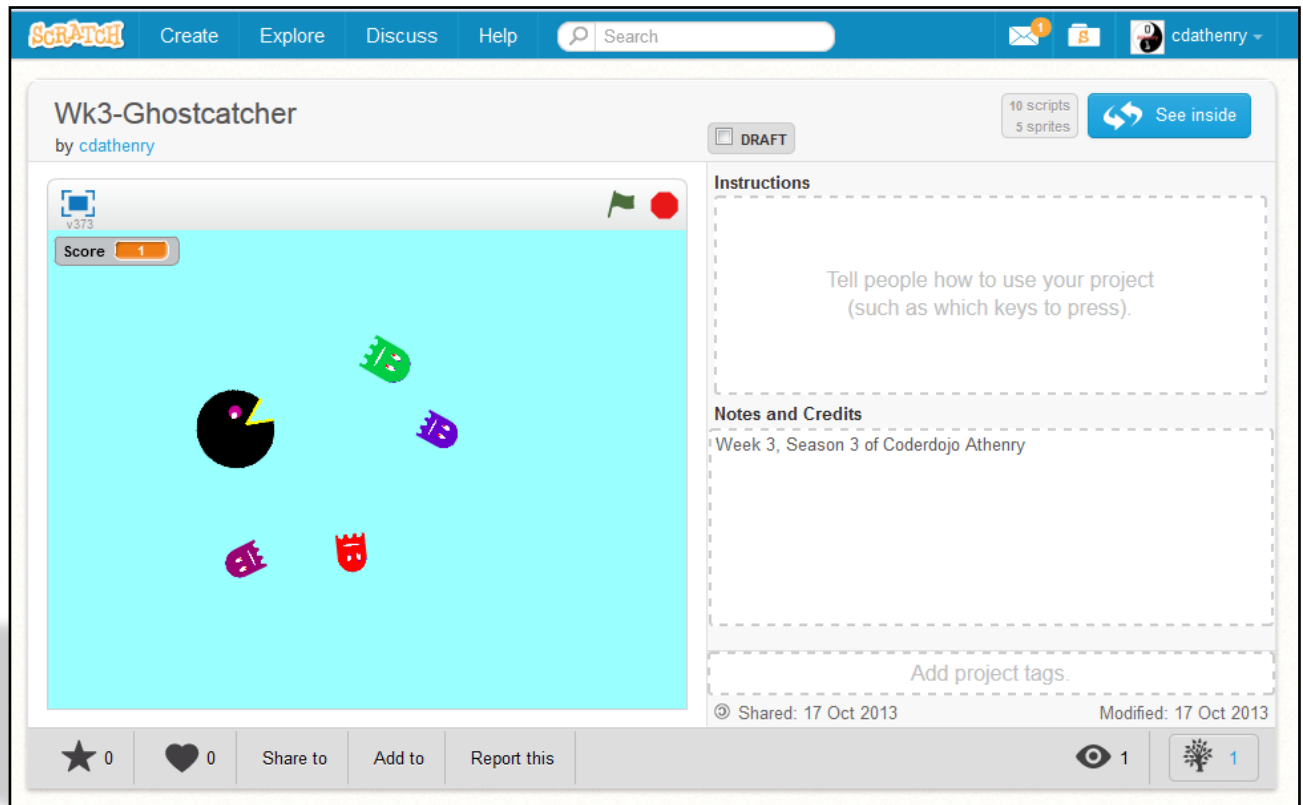
Upload your project to the Scratch Website

user: **cdathenry** password:

Access it
from home

Improve it

Show your
friends!



The screenshot shows the Scratch website interface for a project titled "Wk3-Ghostcatcher" by user "cdathenry". The project is in "DRAFT" status and has 10 scripts and 5 sprites. The main canvas displays a black circle with a yellow slice, a green ghost, a purple ghost, and a red ghost. A score of 1 is shown in the top left corner of the canvas. The right sidebar contains an "Instructions" section with a dashed box for text, a "Notes and Credits" section with the text "Week 3, Season 3 of Coderdojo Athenry", and an "Add project tags" section. The bottom of the page shows a star icon with 0, a heart icon with 0, and buttons for "Share to", "Add to", and "Report this". The bottom right corner shows an eye icon with 1 and a snowflake icon with 1. The page is dated "© Shared: 17 Oct 2013" and "Modified: 17 Oct 2013".