All Code Clubs must be registered. By registering your club we can measure our impact, and we can continue to provide free resources that help children learn to code. You can register your club at codeclubworld.org.

Introduction

You are going to make a ghost-catching game!

- Activity Checklist
  - Follow these INSTRUCTIONS one by one
- Test your Project
  - Click on the green flag to TEST your code
- Save your Project
  - Make sure to SAVE your work now
Step 1: Animating a ghost

Activity Checklist

- Start a new Scratch project, and delete the cat sprite so that your project is empty. You can find the online Scratch editor at jump.to.cc/scratch-new.

- Add in a new ghost sprite, and a suitable stage backdrop.

- Add this code to your ghost, so that it repeatedly appears and disappears:

```
when [clicked] clicked
forever
  hide
  wait 1 secs
  show
  wait 1 secs
```
• Test out your ghost’s code, by clicking the green flag.

⚠️ Save your project

**Step 2: Random ghosts**

Your ghost is really easy to catch, because it doesn’t move!

✅ **Activity Checklist**

• Instead of staying in the same position, you can let Scratch choose random x and y coordinates instead. Add a `go to` block to your ghost’s code, so that it looks like this:

```
when clicked
forever
  hide
  wait 1 secs
  go to x: pick random -150 to 150 y: pick random -150 to 150
  show
  wait 1 secs
```

• Test our your ghost again, and you should notice that it appears in a different place each time.

⚠️ Save your project
Challenge: More randomness

Can you make your ghost **wait** a random amount of time before appearing? Can you use the **set size** block to make your ghost a random size each time it appears?

Save your project

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Step 3: Catching ghosts

Let’s allow the player to catch ghosts!

✔️ Activity Checklist

- To allow the player to catch a ghost, add this code:

  ```
  when this sprite clicked
  hide
  ```

- Test out your project. Can you catch ghosts as they appear? If you find it difficult to catch the ghosts, you can play the game in fullscreen mode by clicking this button:

  ![Ghostbusters]

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Challenge: Adding a sound

Can you make a sound each time a ghost is caught?
Let’s make things more interesting by keeping score.

**Activity Checklist**

- To keep the player’s score, you need a place to put it. A **variable** is a place to store data that can change, like a score.

To create a new variable, click on the ‘Scripts’ tab, select **Data** and then click ‘Make a Variable’.

![Variable creation screen](image)

Type ‘score’ as the name of the variable, make sure that it is available for all sprites, and click ‘OK’ to create it. You’ll then see lots of code blocks that can be used with your **score** variable.

![Code blocks](image)

You’ll also see the score in the top-left of the stage.
• When a new game is started (by clicking the flag), you should set the player’s score to 0:

• Whenever a ghost is caught, you need to add 1 to the player’s score:

• Run your program again and catch some ghosts. Does your score change?

Save your project

Step 5: Adding a timer

You can make your game more interesting, by only giving your player 10 seconds to catch as many ghosts as possible.

Activity Checklist

• You can use another variable to store the remaining time left.
Click on the stage, and create a new variable called ‘time’:

- This is how the timer should work:
  - The timer should start at 10 seconds;
  - The timer should count down every second;
  - The game should stop when the timer gets to 0.

Here’s the code to do this, which you can add to your stage:

```
when green旗 clicked
set [time] to [10]
repeat until [time] = 0
  wait [1] secs
  change [time] by -1
stop all
```

This is how you add the `repeat until [time] = 0` code:

- Drag your ‘time’ variable display to the right side of the stage.
  You can also right-click on the variable display and choose ‘large readout’ to change how the time is displayed.
• Ask a friend to test your game. How many points can they score? If your game is too easy, you can:

  • Give the player less time;
  • Make the ghosts appear less often;
  • Make the ghosts smaller.

Test your game a few times until you’re happy that it’s the right level of difficulty.

Save your project
Challenge: More objects

Can you add in other objects to your game?

You’ll need to think about the objects you’re adding. Think about:

- How big is it?
- Will it appear more or less often than the ghosts?
- What will it look/sound like when it has been caught?
- How many points will you score (or lose) for catching it?

If you need help adding another object, you can reuse the steps above!