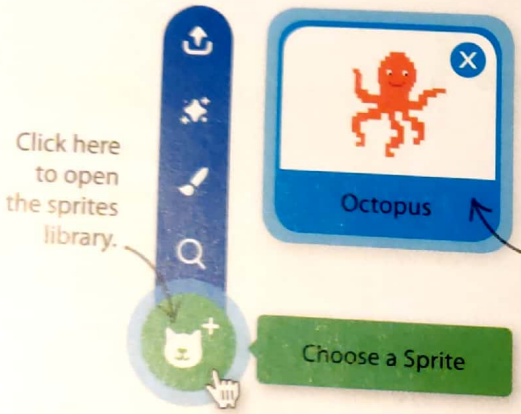
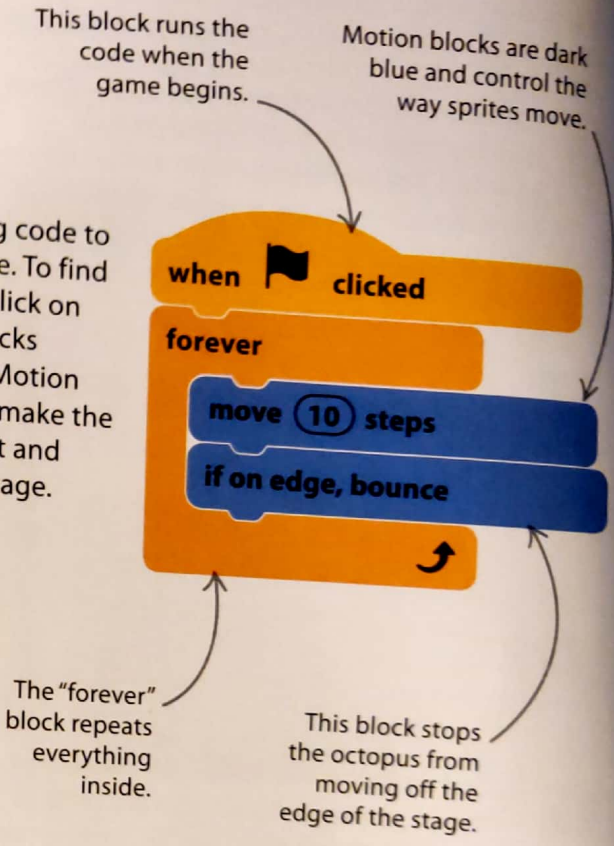
Add an enemy

The game needs an enemy to make things more interesting. Let's add an octopus with a deadly sting. The octopus will patrol the stage, moving left and right, and the player will have to keep out of its way or the game is over.

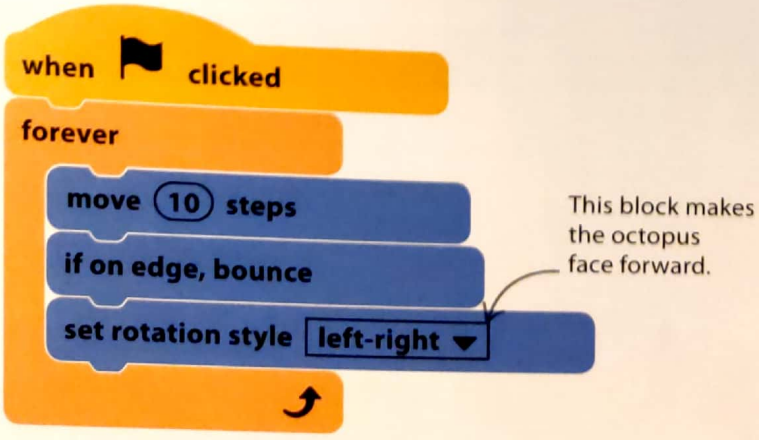
13 To add a second sprite to the project, click the icon shown below to open up the sprites library. Look for "Octopus" and select it.



14 Add the following code to the octopus sprite. To find the blue blocks, click on Motion in the blocks palette. The two Motion blocks used here make the octopus move left and right across the stage.



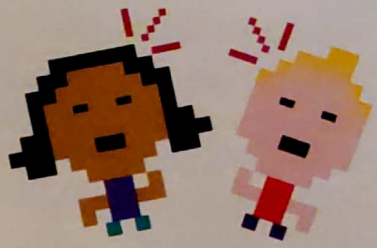
15 Now run the code. The octopus will patrol left and right, but you'll notice it's upside down half of the time. You can fix this by changing the way the sprite turns around when it changes direction. Choose the blue "set rotation style" block, and add it to the octopus's code.



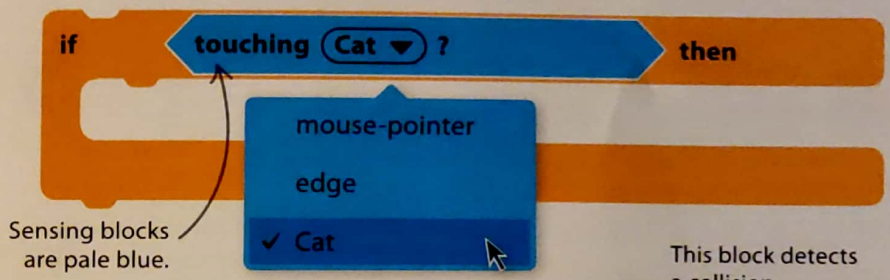
16 The octopus should now stay right-side up and facing forward all the time. You can adjust its starting position on the screen by dragging it with the mouse.

Collisions

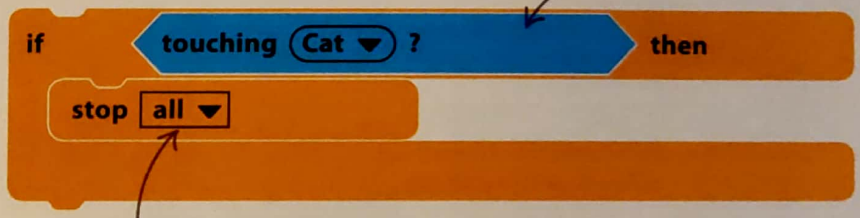
So far the octopus and cat move through each other without anything happening. We need to add code to make them stop moving when they collide. Collision detection is very important in computer games.



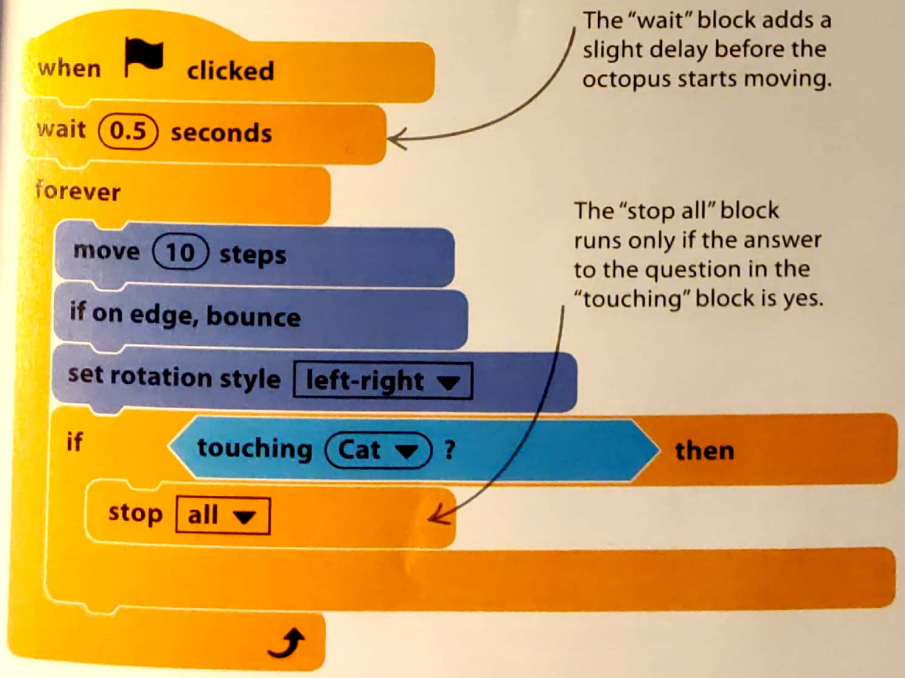
17 Highlight the octopus and drag an orange "if then" block to an empty part of the code area. Now add a pale blue "touching" block to the top of the "if then" block. Click the drop-down menu and choose "Cat". This code will help the octopus detect the cat.



18 Choose Control in the blocks palette again, and add a "stop all" block to the middle of the "if then" block. This will stop all action if the octopus is touching the cat, ending the game.



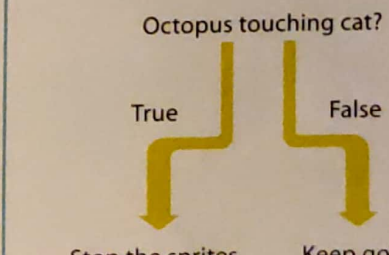
19 Now add the "if then" blocks you've built to the octopus's main code, placing it carefully after the blue Motion blocks. Also, add a "wait 0.5 seconds" before the loop. Run the project and see what happens.



EXPERT TIPS

"if then"

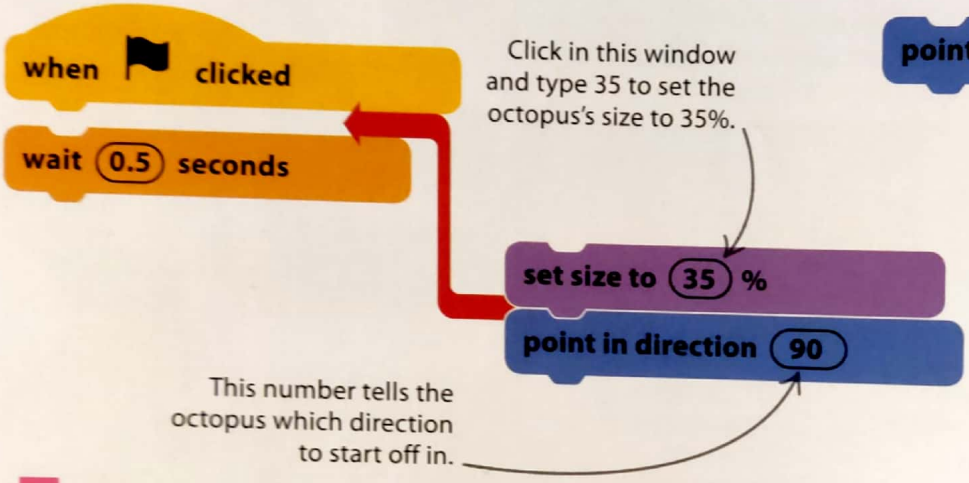
You make decisions every day. If it's raining, you might use an umbrella. If it isn't, you don't. Computer programs do the same thing by using what programmers call conditional statements, such as "if then." When Scratch reaches an "if then" block, it runs the blocks inside only if the statement is true.



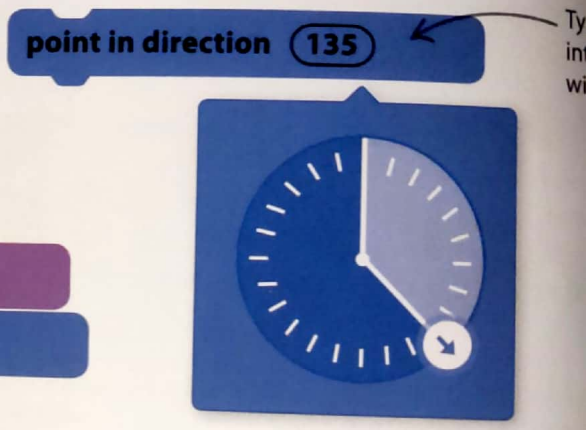
More enemies

Let's add more enemies to the game, but to make things more challenging, we'll make them move in different directions. We can tell each sprite exactly which way to go by using a block that works like a compass.

20 Add a purple "set size to" block to the top of the octopus's code, after the "when clicked" block. Set the octopus's size to 35% to make the game a bit easier. Then add a blue "point in direction" block.



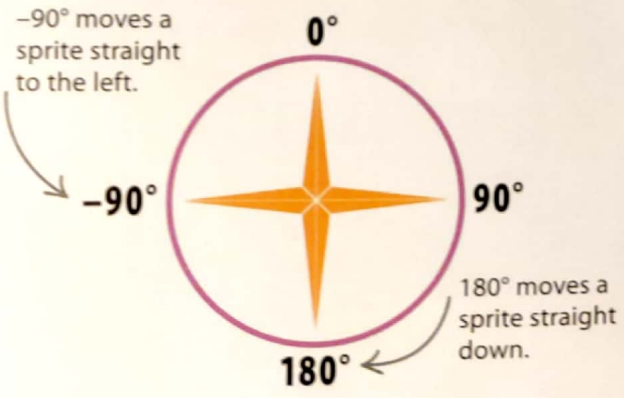
21 To change the octopus's direction, click the window in the "point in direction" b and type 135 in place of 90. This will m the octopus move diagonally.



EXPERT TIPS

Directions

Scratch uses degrees to set direction. You can choose any number from −179° to 180°. Negative numbers point sprites left; positive numbers point them right. Use 0° to go up and 180° to go straight down.



22 Now we can duplicate our octopus to create mo enemies. Right-click on the octopus in the sprite list (or control-click if you have a Mac) and choos "duplicate". Copies of the Octopus sprite will app in the sprites list, named Octopus2 and Octopus Each will have a copy of the first octopus's code.