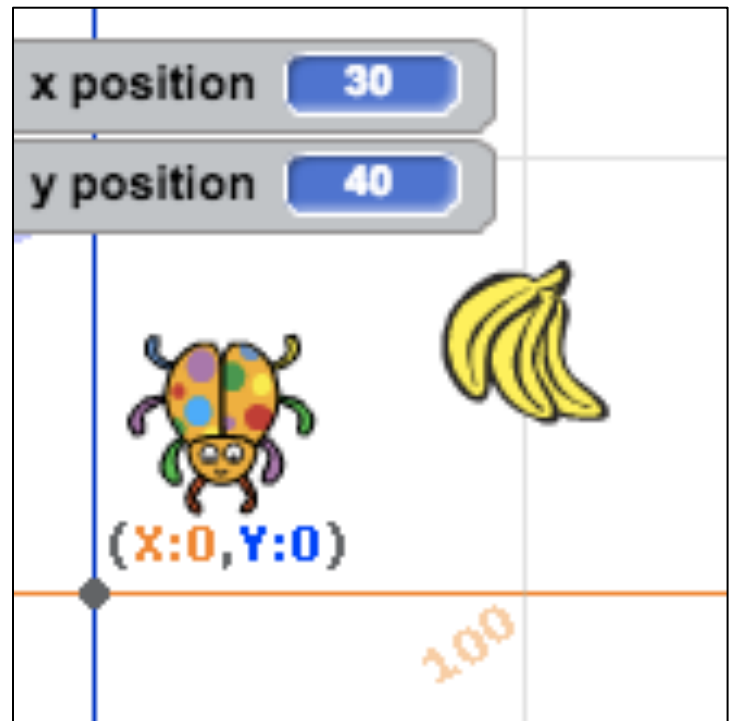


X & Y BUG

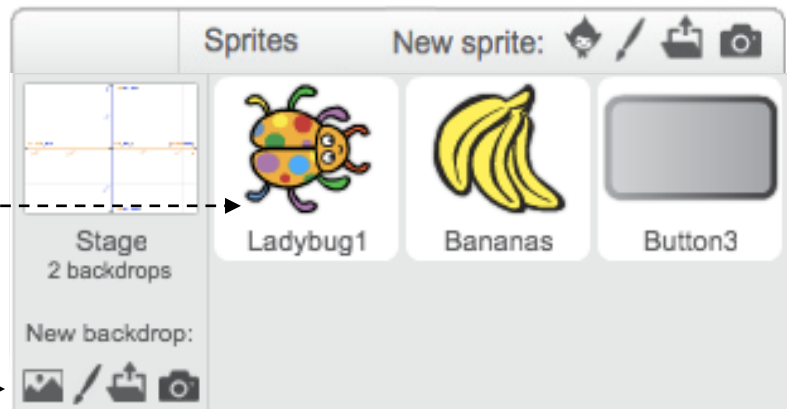
HOW CAN YOU USE X & Y COORDINATES TO MAKE AN INTERACTIVE GAME?

Add sprites, costumes, backdrops, and sounds to create an interactive Scratch game – a project that helps other people learn more about X & Y coordinates and how to use them when making video games.



START HERE

- Delete the cat Sprite.
- Add the 'Ladybug1' Sprite, a food Sprite, & a button.
- Add the 'x/y-grid' background to the Stage.



ADD YOUR CODE!



Make your bug sprite interactive by adding scripts that have the sprite respond to key presses.

```

when clicked
  set size to 50 %
  go to x: 0 y: 0
  go to front
  
```

x position
 y position

Checking the X & Y boxes will show the bug's position on the stage.

```

when right arrow key pressed
  point in direction 90
  change x by 10
  Move right.

when left arrow key pressed
  point in direction -90
  change x by -10
  Move left.
  
```

control + click on blocks to leave **code comments** that explain what your code actually does.

CHALLENGE!

What blocks will you need here to move your sprite down?

```

when up arrow key pressed
  point in direction 0
  change y by 10

when down arrow key pressed
  
```



Bananas

x position

y position

Check the X & Y boxes to show the food coordinates.

```

when clicked
  set size to 50 %
  show
  broadcast moveFood

```

Broadcasts are like instructions that you can name.

Click the ▼ symbol in the broadcast block and make a 'new broadcast' named "moveFood".

Using the Pick Random block is like rolling dice. Here, we pick a random number and then multiply it by 10.

```

when I receive moveFood
  set x to pick random 0 to 20 * 10
  set y to pick random 0 to 15 * 10

```

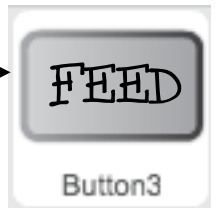
We can make the food move to more places on the stage if we replace the 0's with negative numbers like -15



Button3

Costumes

You can add text to the button by using the text tool in the costumes tab.



Button3

```

when this sprite clicked
  if (x position of Ladybug1 = x position of Bananas) and (y position of Ladybug1 = y position of Bananas) then
    play sound cheer
    broadcast moveFood
    change score by 1
  else
    play sound alien creak2

```

If the X position of the bug is the same as the food AND the Y position of the bug is the same as the food, then...



Ladybug1

Now let's add a "Victory Condition", or a way to win the game. First we have to make a variable and name it 'score'.

Click 'Make a Variable'

Type 'score'

Data More Blocks

Make a Variable

New Variable

Variable name: score

For all sprites For this s

```

when clicked
  set score to 0
  forever
    if score = 10 then
      say You Win!

```

If the score is equal to 10, then say "You Win!"

THINGS TO TRY

- Use a hide block to make the food invisible.
- Use costumes to change how your sprites look.
- Add code comments on each stack of blocks.

This work is a derivative of "[Scratch Creative Computing Curriculum Guide](#)" by the [ScratchEd](#) team at the Harvard Graduate School of Education, used under [CC BY-SA](#). This work is licensed under [CC BY-SA](#) by [Dylan Ryder](#).

