

Events in Alice



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Events

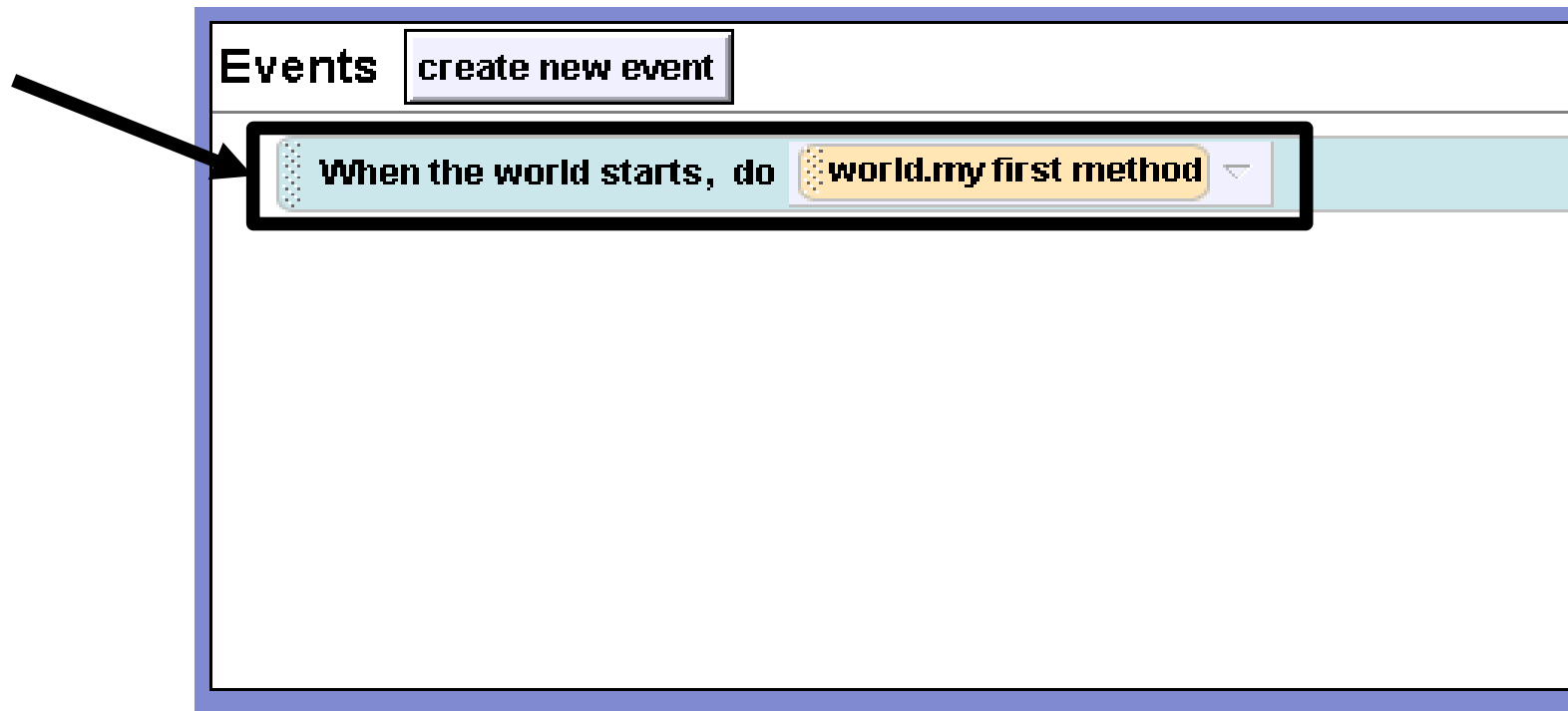
This tutorial will teach you the basics of **events** in Alice, which are things you tell Alice to do in response to a certain action, like clicking on an object or pressing a key. Download the starting world that goes with this tutorial.

There should be two birds and some buttons in this Alice world.



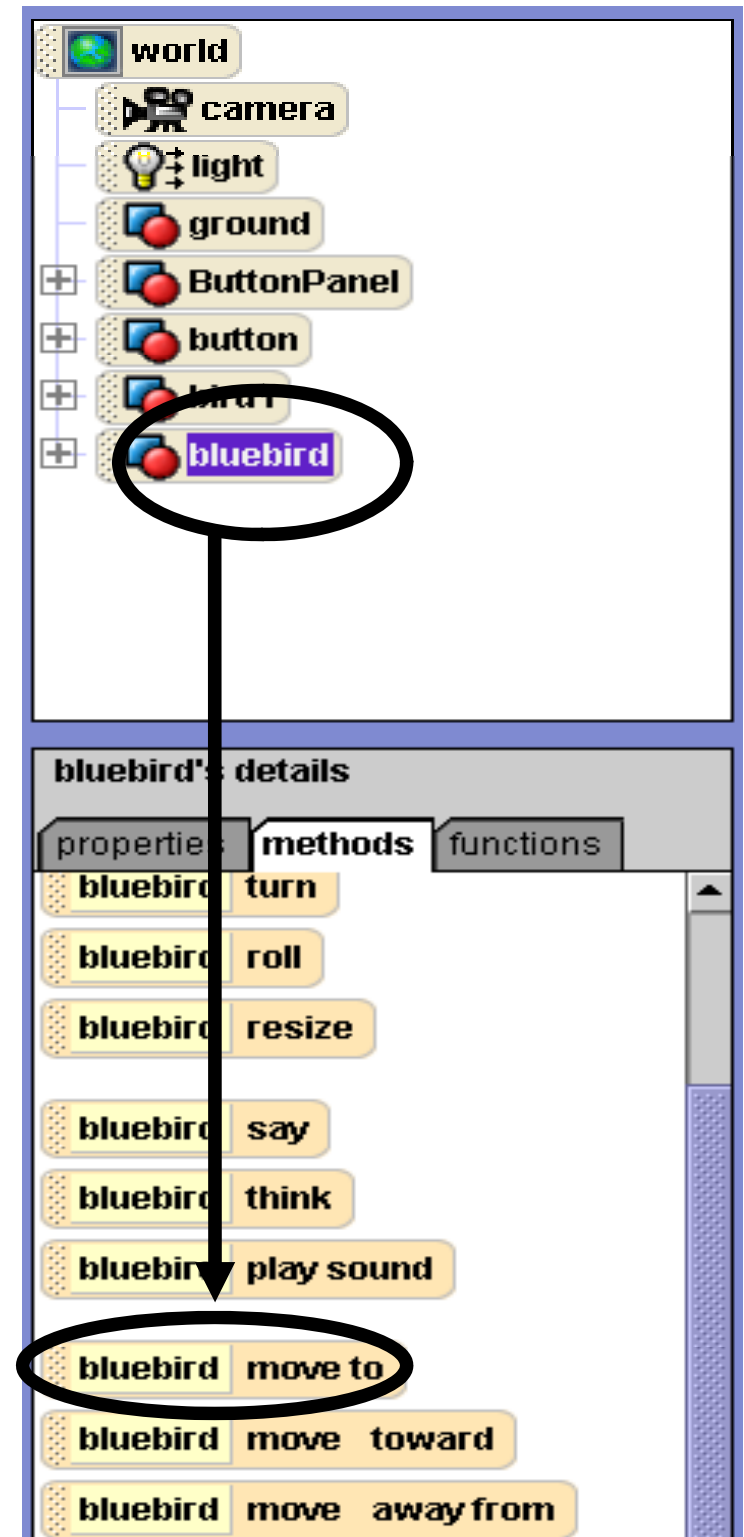
When the World Starts

The **events editor**, where your events are located, is found in the upper right hand part of the Alice screen. There is always one default method: **When the world starts, do world.my first method**. This means that whenever you push the **play** button, Alice will do whatever code you have put in **my first method**. Try playing your world. Nothing should happen, because there is nothing in **my first method**.



When the World Starts

We are now going to change **When the world starts**. First, click on **bluebird** in your object tree, and then look in its **methods** pane until you find the method **move to**.



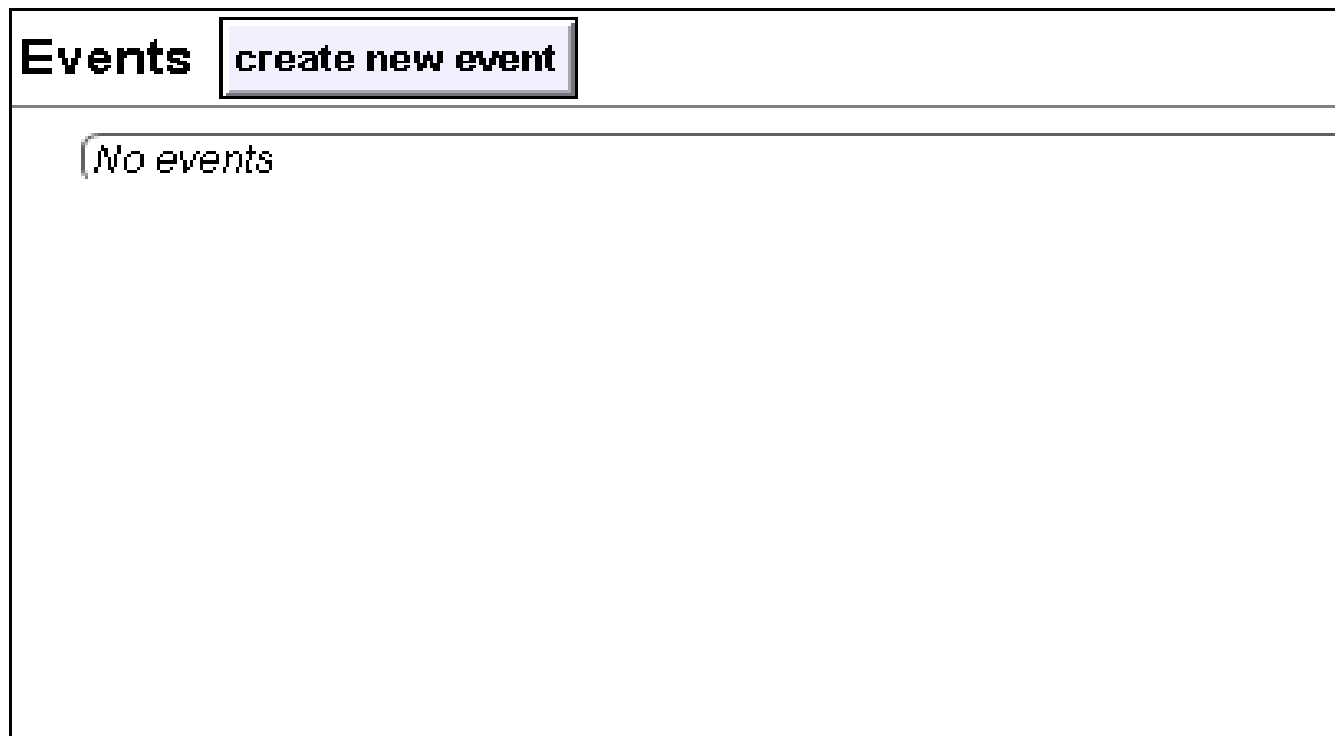
When the World Starts

Now drag and drop **bluebird move to** over **world.my first method** on the **When the world starts** event in your events editor. Select **bird1**, and then **the entire bird1**. Your events editor will now look like this:



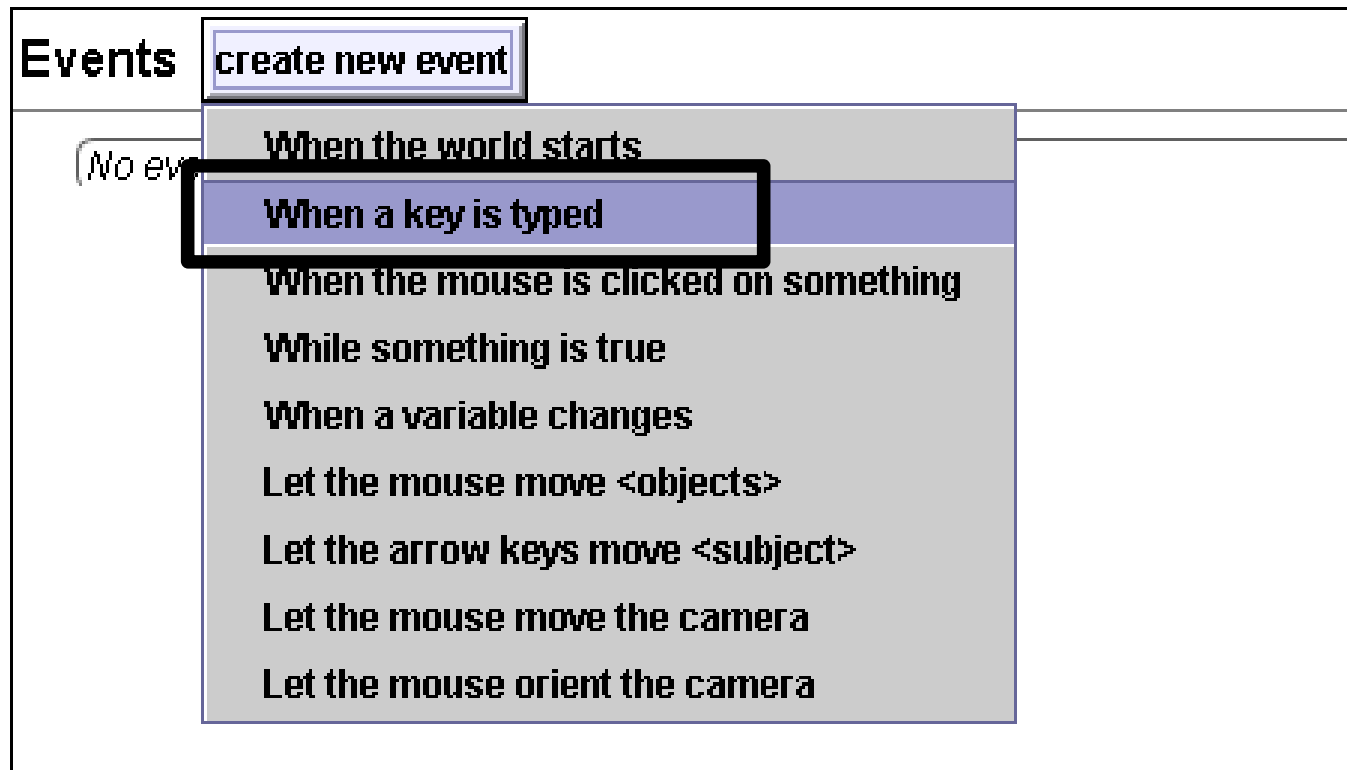
Playing Your World

Press play to see the bluebird fly to the other bird. Alice will probably give you a warning before it plays; just click ok. As you can see, Alice will do whatever you tell it to in **When the world starts**. Now right click on your event and select **delete**. Your method editor will now look empty like this:



Keyboard Events

There are several different types of events besides **When the world starts**. One of these is a **keyboard event**, which is when you tell Alice to do something when a certain key is typed. We are going to create one of these now. Click the **create new event** button and select **When a key is typed**.



Keyboard Events

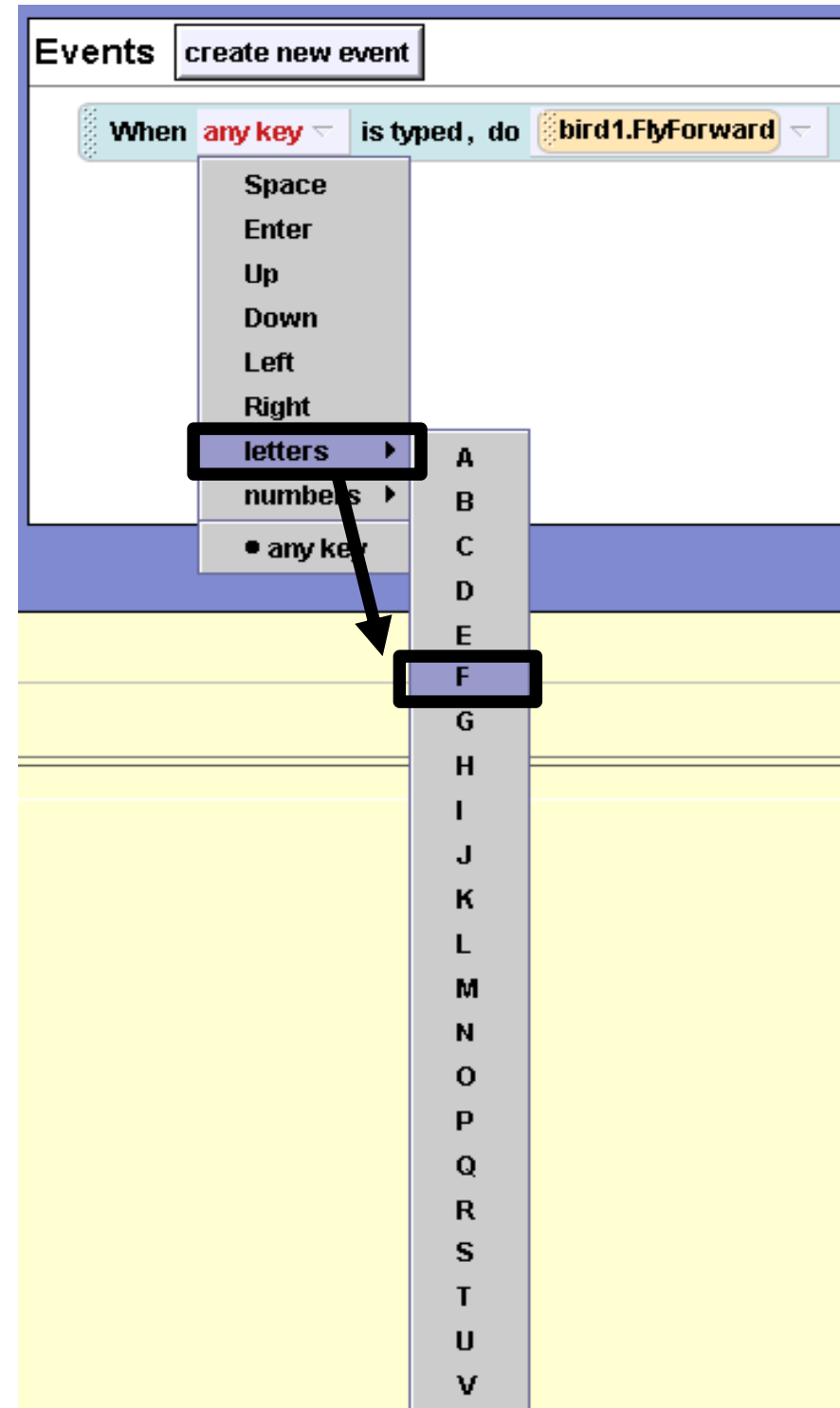
Now you will have an event that says **When any key is typed, do nothing**. Click on **bird1** in the object tree, and find its **flyForward** method. Drag and drop it over where your method says **nothing**.

The screenshot displays a game development environment with three main panels:

- Object Tree (Left):** A hierarchical list of objects including 'world', 'camera', 'light', 'ground', 'ButtonPanel', 'button', 'bird1', and 'bird2'. The 'bird1' object is circled in black.
- Game View (Center):** A 2D game scene showing a blue sky, a yellow ground, a small bird, and a traffic light. Below the scene are movement controls (left, right, up, down arrows) and an 'ADD OBJECTS' button.
- Events Panel (Top Right):** Contains a 'create new event' button and a single event block: 'When any key is typed, do'. The 'do' dropdown menu is open, showing 'bird1.FlyForward' as the selected action, which is circled in black.
- bird1's details (Bottom Left):** A panel with tabs for 'properties', 'methods', and 'functions'. The 'methods' tab is active, showing a list of methods: 'Fly birdObj', 'Loop', 'Feeding birdObj Frame', 'FlyAway birdObj Speed', 'Jumping birdObj Frame', and 'FlyForward'. The 'FlyForward' method is circled in black.
- Method Editor (Bottom Right):** A yellow area for editing the 'world.my first method'. It shows 'No parameters' and 'No variables'. The current action is '(Do Nothing)'. A large black arrow points from the 'FlyForward' method in the 'bird1's details' panel to the '(Do Nothing)' text in the method editor.

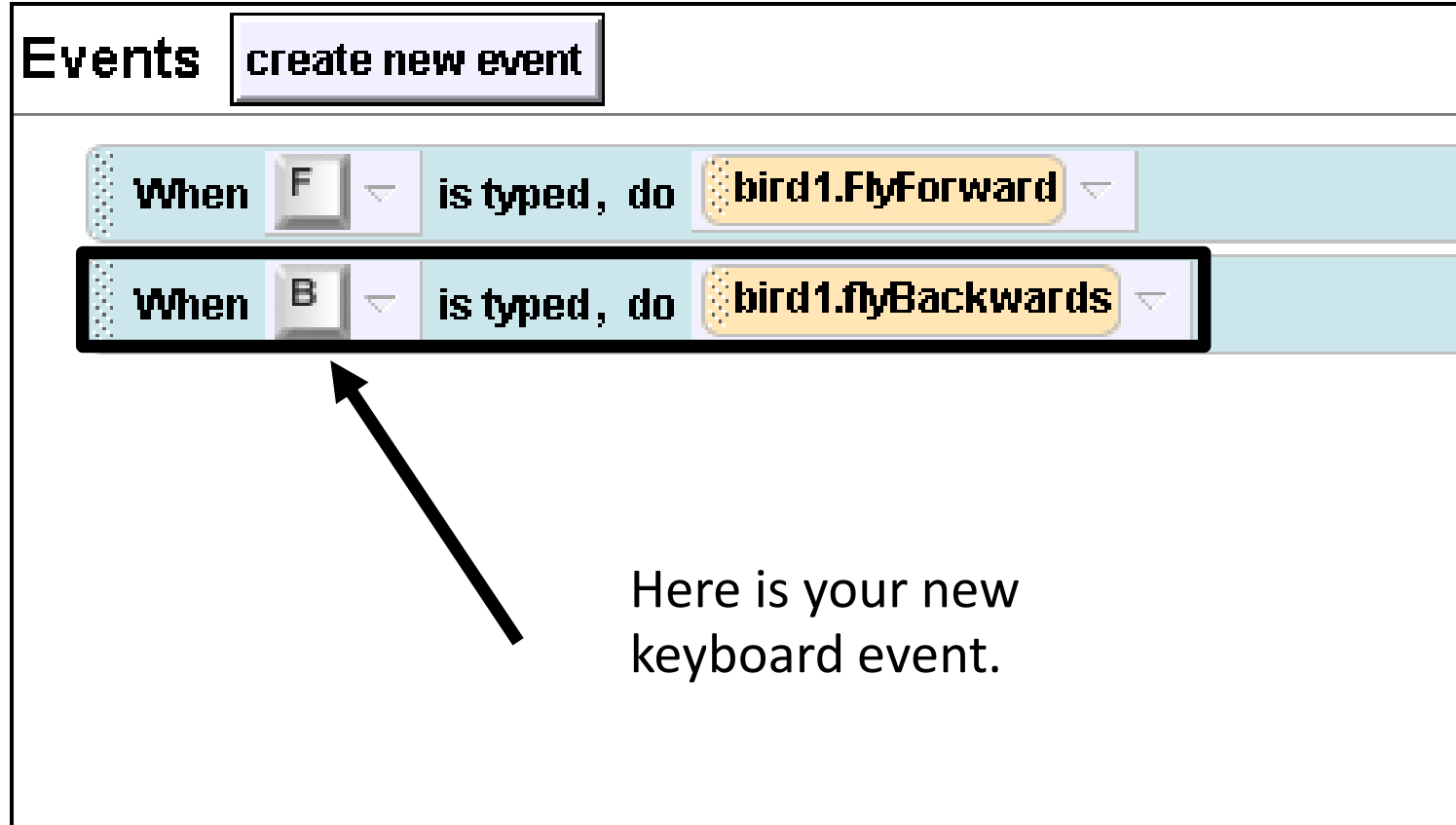
Keyboard Events

Now when you play your world and press almost any key, your bird will fly forward. Let's make it so that you have to press a specific key. Click on the down arrow next to **any key** on your event, and look at the keys you can choose from. We'll select **letters**, and then **F**, because we are making the bird fly.



Keyboard Events

Now follow the previous steps to make another keyboard event. This time, make it so that when you press the letter **B**, bird1 does its **flyBackwards** method. Your event editor will look like this when your done.



Play your world and test out your new event.

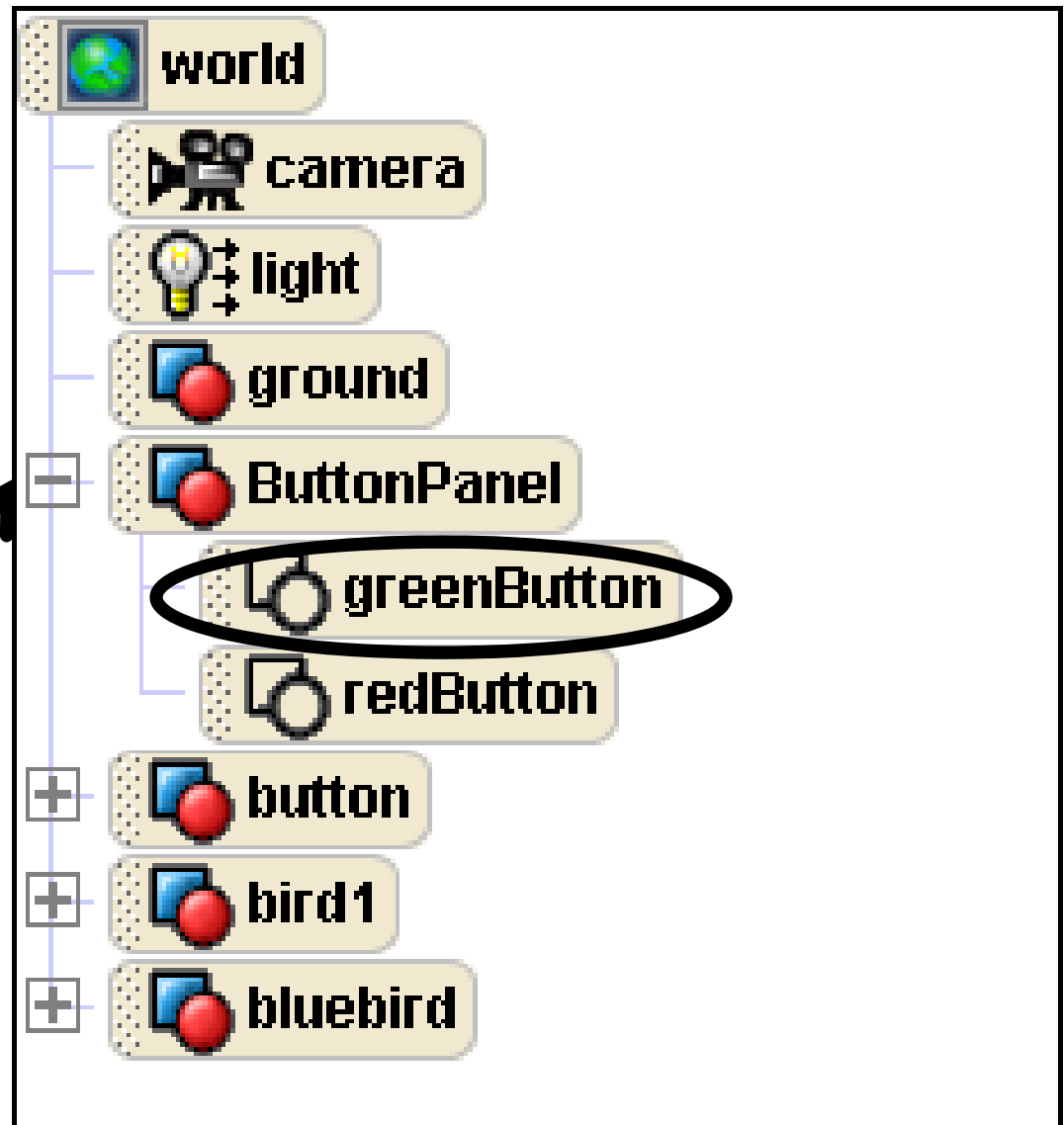
Mouse-Click Events

You can also create an event that is tied to a mouse clicking, either just clicking on anything, or clicking on a specific object. Create a mouse event by selecting **When the mouse is clicked on something** in the “create new event” menu. Your event editor will look like this:



Mouse-Click Events

We are going to make this event so that when the mouse is clicked on the green button, the bluebird does its **approach** method. Find the green button in the object tree by clicking on the plus sign next to **ButtonPanel**.



Mouse-Click Events

Now drag **greenButton** from the object tree over to the **anything** in your mouse event, and drop it there.

The image shows a Scratch-like interface with two main panels. On the left is the 'Object Tree' showing a hierarchy of objects: 'world' (root), 'camera', 'light', 'ground', 'ButtonPanel' (expanded), 'greenButton' (circled), 'redButton', 'button', 'bird1', and 'bluebird'. On the right is the 'Events' panel, which has a 'create new event' button and three event blocks. The first block is 'When F is typed, do bird1.FlyForward'. The second block is 'When B is typed, do bird1.flyBackwards'. The third block is 'When [mouse cursor icon] is clicked on ButtonPanel.greenButton do Nothing'. The 'ButtonPanel.greenButton' dropdown in the third block is circled, and a black arrow points from the circled 'greenButton' in the object tree to this dropdown.

Object Tree:

- world
 - camera
 - light
 - ground
 - ButtonPanel
 - greenButton**
 - redButton
 - button
 - bird1
 - bluebird

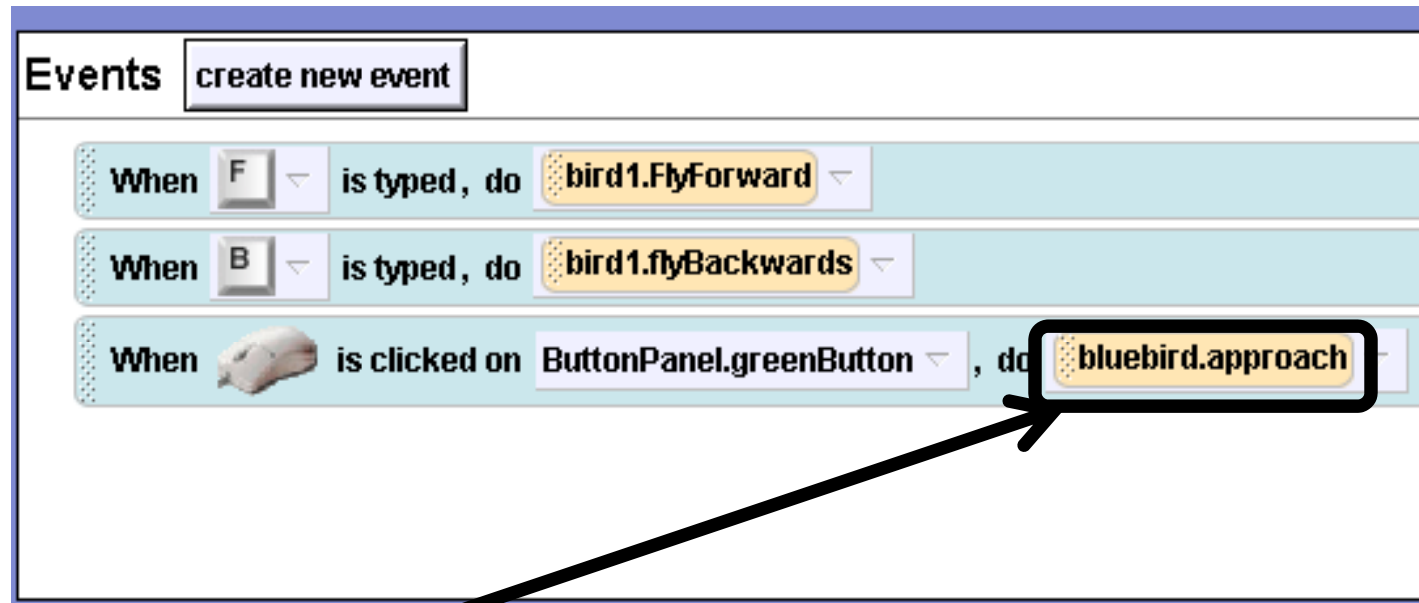
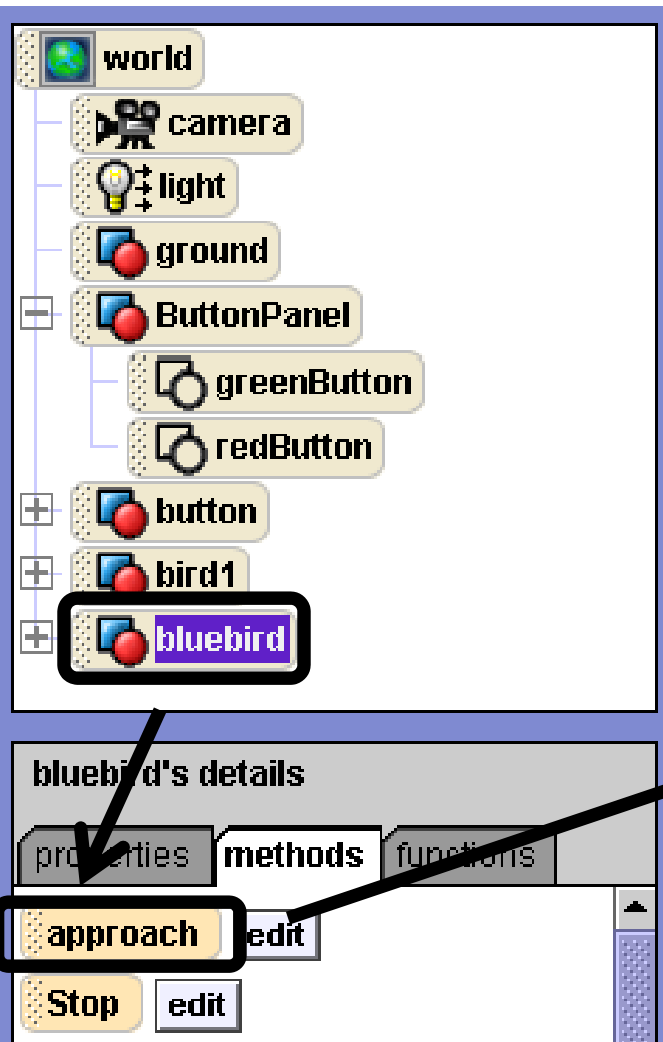
Events Panel:

Events create new event

- When **F** is typed, do **bird1.FlyForward**
- When **B** is typed, do **bird1.flyBackwards**
- When [mouse cursor icon] is clicked on **ButtonPanel.greenButton** do **Nothing**

Mouse-Click Events



Now click on **bluebird** in the object tree, and look on the **methods** pane to find its **approach** method. Drag this over to where your mouse event says **Nothing** and drop it there.







Mouse-Click Events



Play your world and click on the green button to observe the bluebird's approach. Notice that it keeps moving, even if it crashes into you. Let's create an event that stops the bird. Create a mouse-click event so that when you click on the red button, the bluebird does its **stop** event. Your event editor will look like this when your done:

Events create new event

When  is typed, do 

When  is typed, do 

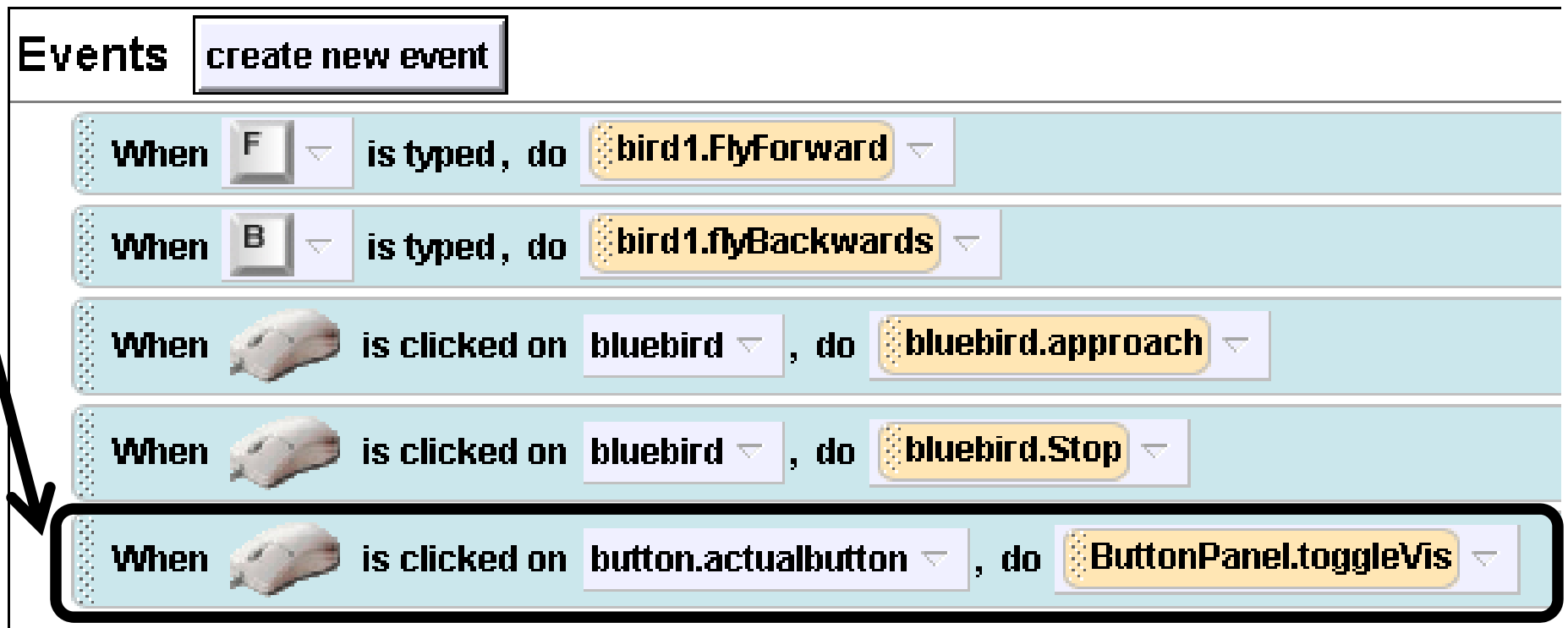
When  is clicked on ButtonPanel.greenButton, do 

When  is clicked on ButtonPanel.redButton, do 

Now play your world and test out your latest event.

Mouse-Click Events

Now we're going to make one more mouse click event. Make an event so that when the mouse is clicked on the purple button, (which is called **actualButton** and is a part of **button** on the object tree) the other two buttons disappear. You can do this by dragging **ButtonPanel**'s **toggleVis** method onto your event. Your event editor will look like this when you're finished:



The screenshot shows the Scratch Event Editor interface. At the top, there is a tab labeled "Events" and a button labeled "create new event". Below this, there are five event blocks, each with a "When" trigger, a "do" action, and a dropdown menu. The first block is "When F is typed, do bird1.FlyForward". The second block is "When B is typed, do bird1.flyBackwards". The third block is "When [mouse icon] is clicked on bluebird, do bluebird.approach". The fourth block is "When [mouse icon] is clicked on bluebird, do bluebird.Stop". The fifth block, which is highlighted with a thick black border, is "When [mouse icon] is clicked on button.actualbutton, do ButtonPanel.toggleVis". A black arrow points from the left towards the bottom event block.

When	do
When F is typed	do bird1.FlyForward
When B is typed	do bird1.flyBackwards
When [mouse icon] is clicked on bluebird	do bluebird.approach
When [mouse icon] is clicked on bluebird	do bluebird.Stop
When [mouse icon] is clicked on button.actualbutton	do ButtonPanel.toggleVis

Now play your world and test out your newest event.

Other Events

You have probably noticed that there are many other events in the **create new event** drop down menu. Some of these are very useful, such as **Let arrow keys move**. This is good for steering a vehicle or a person in a game. There is also **Let the mouse move**, which allows you to click on something with your mouse and drag it around in your world. Test out some of these events until you feel you are comfortable with events in general.

create new event

When the world starts

When a key is typed

When the mouse is clicked on something

While something is true

When a variable changes

Let the mouse move <objects>

Let the arrow keys move <subject>

Let the mouse move the camera

Let the mouse orient the camera