**VOCABULARY**

- **Initialize**: Reset sprites to starting location, size, color, and direction.
- **Position**: Where something is located.
- **Orientation**: The direction something is pointing.

**ACTIVITY GOAL**

Tell sprites where they should be at the beginning of the program; reset them. This is called **initialization**.

An example is shown on the right. This short script tells the sprite to go to a certain position every time the green flag is clicked.

**BACKGROUND**

Below are some things about a sprite that can change during a program and how to reset, or **initialize** them.

<table>
<thead>
<tr>
<th>How a sprite may change</th>
<th>Blocks that affect a sprite</th>
<th>How to initialize</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position</strong> – the location of the sprite</td>
<td>“Glide”, “move”, “go to”</td>
<td>go to x: 0 y: 0</td>
</tr>
<tr>
<td><strong>Orientation</strong> – the direction your sprite is pointing</td>
<td>“turn”, “point”</td>
<td>point in direction 90°</td>
</tr>
<tr>
<td><strong>Size</strong> – how big or little a sprite is</td>
<td>“change size by”, “set size to”</td>
<td>set size to 100%</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>“change (something) effect” or “set (color) effect”</td>
<td>clear graphic effects</td>
</tr>
</tbody>
</table>

**EXPLORE:**

**Step 1**: Click the **green flag**.

**Step 2**: Click on each **animal** on the **stage** to make it start racing. This may take a second to begin.
Step 3: Now click the green flag again. You should notice that some animals went back to the starting point while others did not.

The animals that went back to the starting position were correctly initialized. Those that did not return were not initialized meaning that they did not reset back to the starting line.

- List all the animals that were initialized.
  The horse

- List all the animals that were not initialized.
  The Rooster and the Cat

Step 5: Circle the two variables for the cat that changed:

- Position
- orientation
- size
- color

Step 6: Circle the two variables for the rooster that changed:

- Position
- orientation
- size
- color

Step 7: Now look at the x and y number located just below the stage on the right-hand side.

This shows the x and y value for the location of the mouse pointer. If you put the pointer in the center of the stage, it should say: x: 0  y: 0. Now move your pointer to the right. The x number should get bigger. If you move the pointer up towards the top of the screen, the y number will get bigger.

Step 8: What are the x and y numbers for the bottom-left corner of the stage? Write them in the spaces below.

x:  -242  y:  -170
PROGRAMMING CHALLENGE: ANIMAL RACE

Your task is to properly initialize the rooster and the cat when the green flag is clicked.

An example initialization script is shown to the right. It consists of one control block (“when green flag is clicked” and one action block (“go to x:__ y:__”). This script will bring a sprite back to a certain spot on the screen whenever the green flag is clicked.

PLAN:
Plan how you will initialize the cat (make sure it returns to its initial state):

For the cat and the rooster, you will need to use a control block and two other blocks for each of them (hint: Look at the table on page 1).

Fill in the words on the action block that you will need to use.

CAT:

ROOSTER:
CREATE:

Make a **script** for the cat and a **script** for the rooster. Then **test** your solution by **playing the race through twice in a row**.

If your animals all go back to the starting point and look like they did before they began their first race, you have succeeded!

**Double-check – did you remember everything?**
1) Did you add in all of the **initialization** for the cat?
2) Did you add in all of the **initialization** for the rooster?

IMPROVE:

After you have finished, **think** about what you could do to make your project more interesting. If you could add another animal to the race, what would it be? How would it race? What **blocks** might you use to get it to race how you want? **Write** or **draw** your ideas below.

**The Improve section is designed to be open-ended and allow the students to write about and do what they think. There is no one correct response to these questions.**