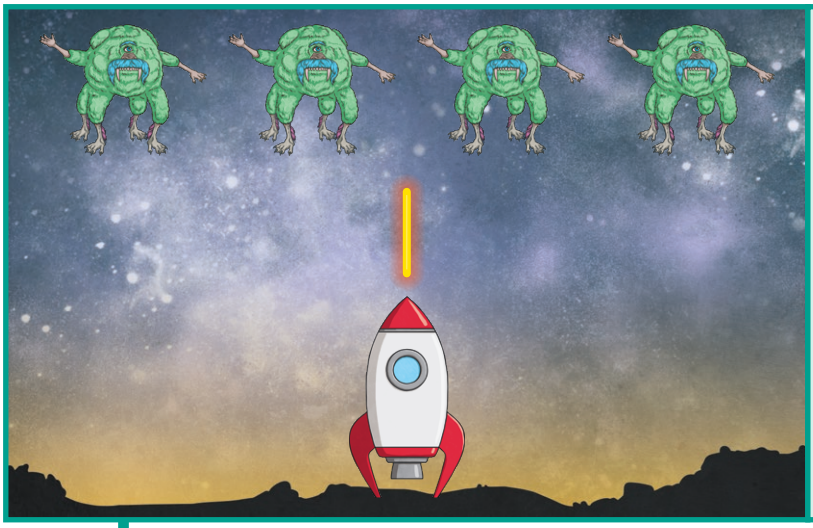
# Creative Coding with Scratch

# Intergalactic Defenders



**Getting Started**

Select **Stars** backdrop.

Choose **Rocketship** from the sprite library and decrease size to **40**.

Draw your own alien sprite, rename it **Alien** and decrease size as needed.

Draw your own laser beam sprite, rename it **Laser** and decrease size.

## Challenge 1

Can you make the **Rocketship** move side to side when right and left arrows are pressed?

## Challenge 2

Can you create clones of the **Alien** sprite and get them to move down the **Stage**?

## Challenge 3

Can you create clones of the **Laser** and position them to move with the **Rocketship**? Can you program the clones to move up the **Stage** when spacebar is pressed, with a sound effect and delete if touching the **Alien** sprites or the edge?

## Challenge 4

Can you make a scoring system when an **Alien** gets hit by a **Laser**?

## I can:

- **select a backdrop and a sprite;** ☐
- **draw my own sprite and rename it;** ☐
- **make sprites move when arrows are pressed;** ☐
- **make a clone of a sprite;** ☐
- **make a sprite move up and down the Stage;** ☐
- **add a sound effect;** ☐
- **make a variable for a scoring system.** ☐

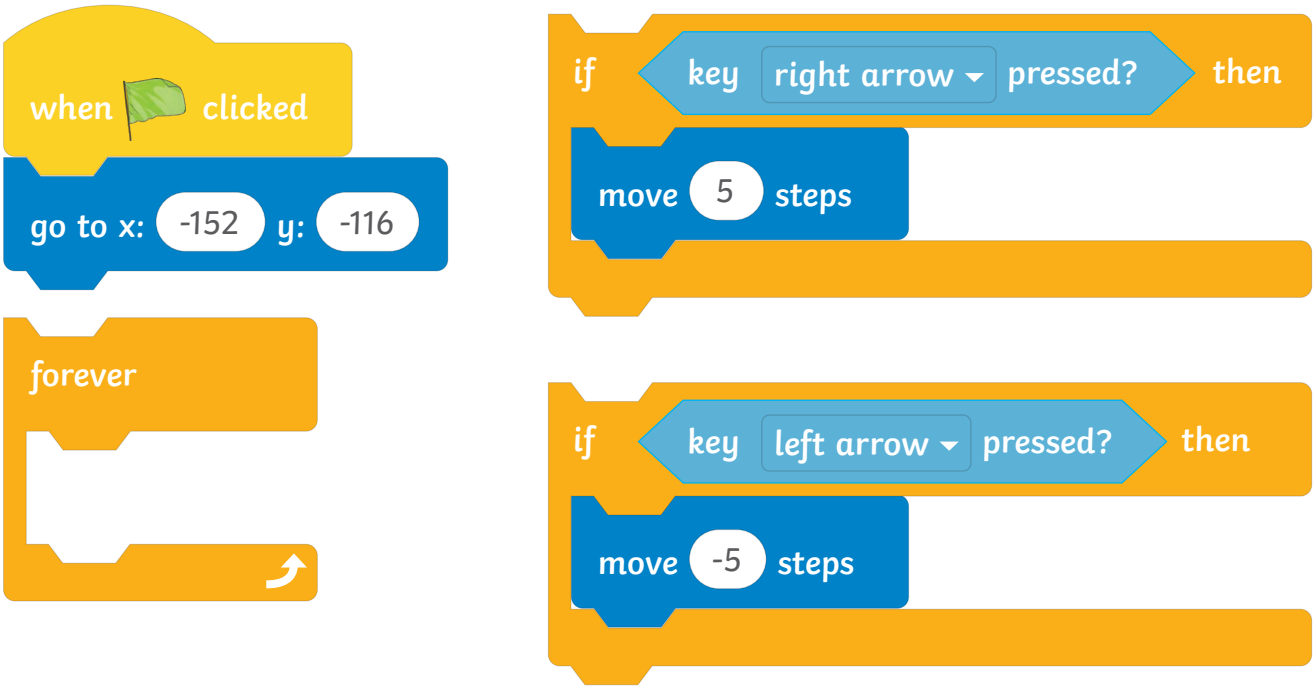
# Helpful Hints

# Intergalactic Defenders

Use these hints to help you complete the challenges. They will not give you the complete solution to the algorithm but should help you on your way.

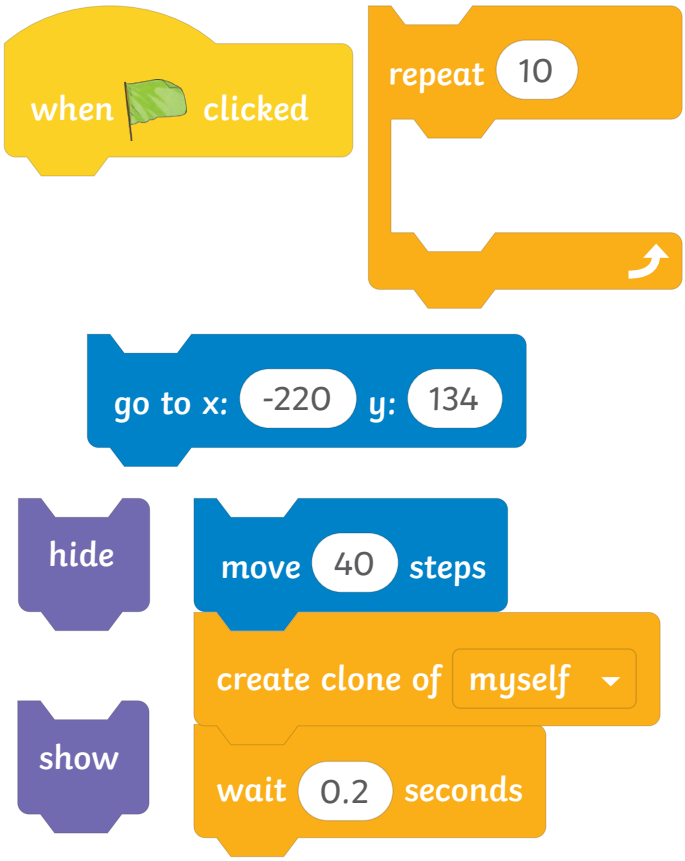
The following code belongs on the **Rocketship** sprite:

To make a sprite travel side to side using the arrow keys:



The following code belongs on the **Alien** sprite:

## To create clones of a sprite:

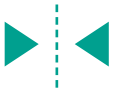



### Top Tip

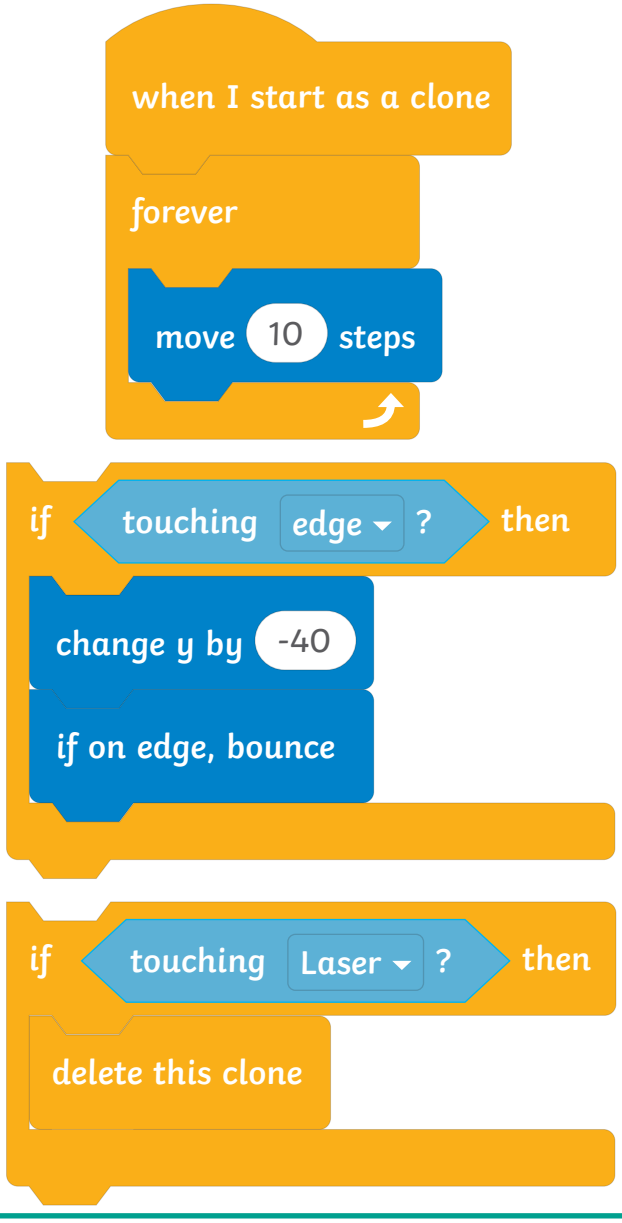
You will need to experiment with the **Alien** sprite size and how many steps it will move to make sure the clones fit the **Stage**.

### Top Tip

If your sprite turns upside down you will need to use the **Left/Right** rotation style. You will find this by clicking on **Direction** in the **Sprite Pane**.

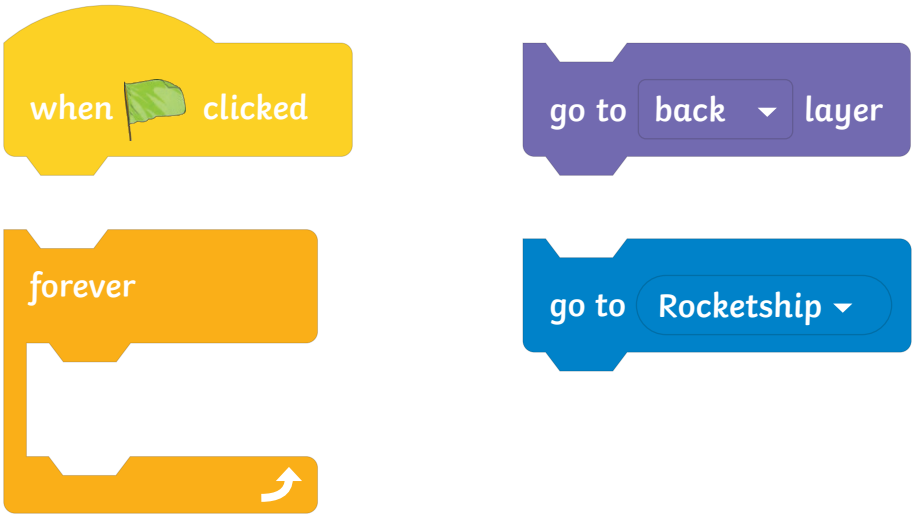


## To make the clones move down the screen:

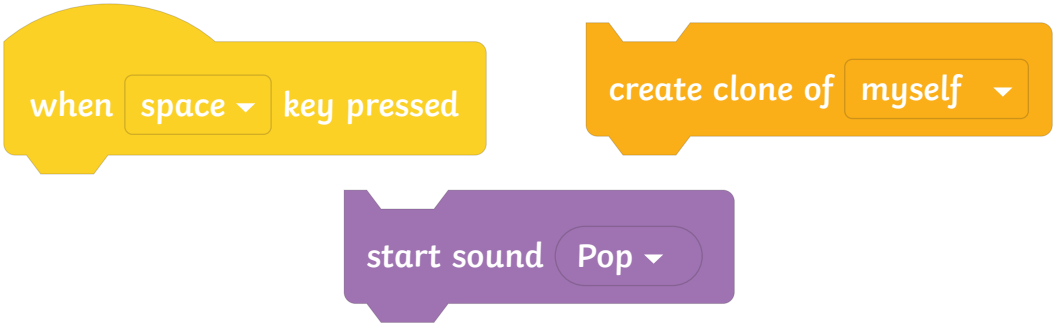


The following code belongs on the **Laser** sprite:

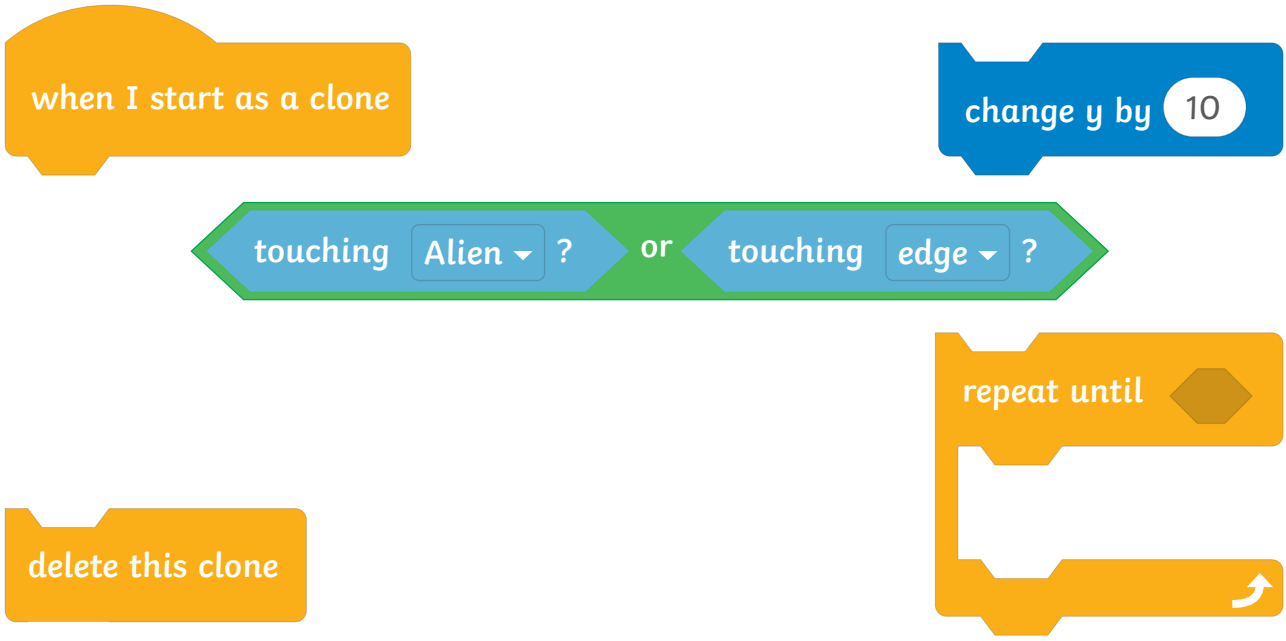
To position the **Laser** to move with the **Rocketship**:




To create clones of a sprite and add a sound effect:

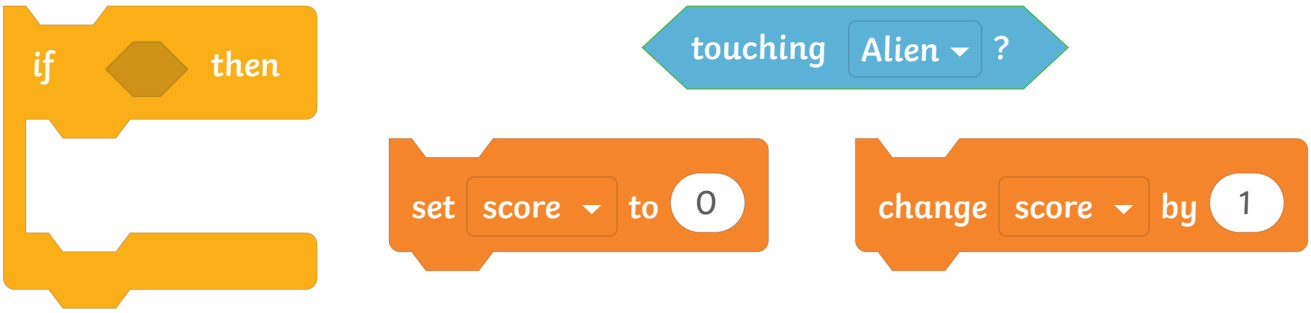



To move a clone up the **Stage** and delete when touching another sprite:



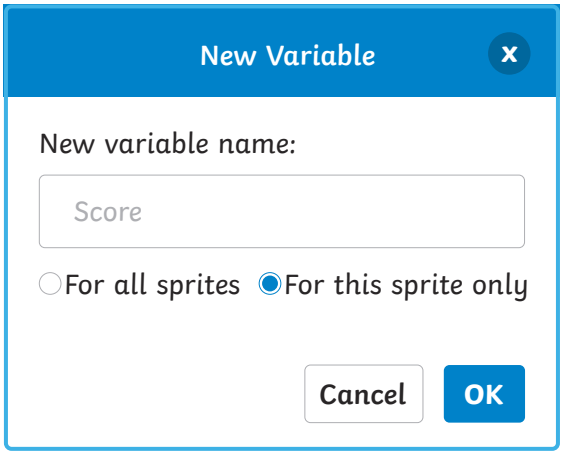
The following code belongs on the **Laser** sprite:

To make a scoring system:




## Top Tip

Choose **Make a Variable** to create a **New Variable** for the scoring system.



# Creative Coding with Scratch

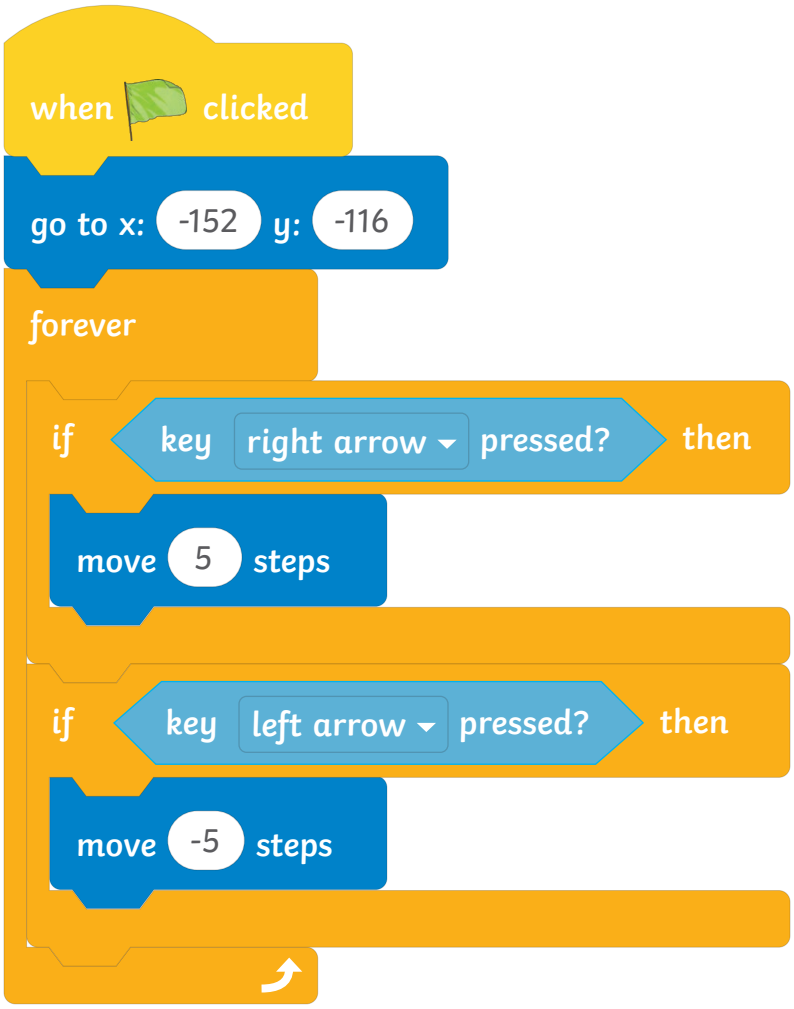
# Intergalactic Defenders **Answers**

Each Creative Coding Challenge is an open-ended task, which can be approached in many different ways. Pupils should be encouraged to have a go and tackle these tasks independently. The helpful hints are not intended to provide complete solutions but may serve as useful cues for supporting less-confident coders.

The following algorithms are just one possible solution to each challenge.

## Challenge 1

The following code belongs on the **Rocketship**:

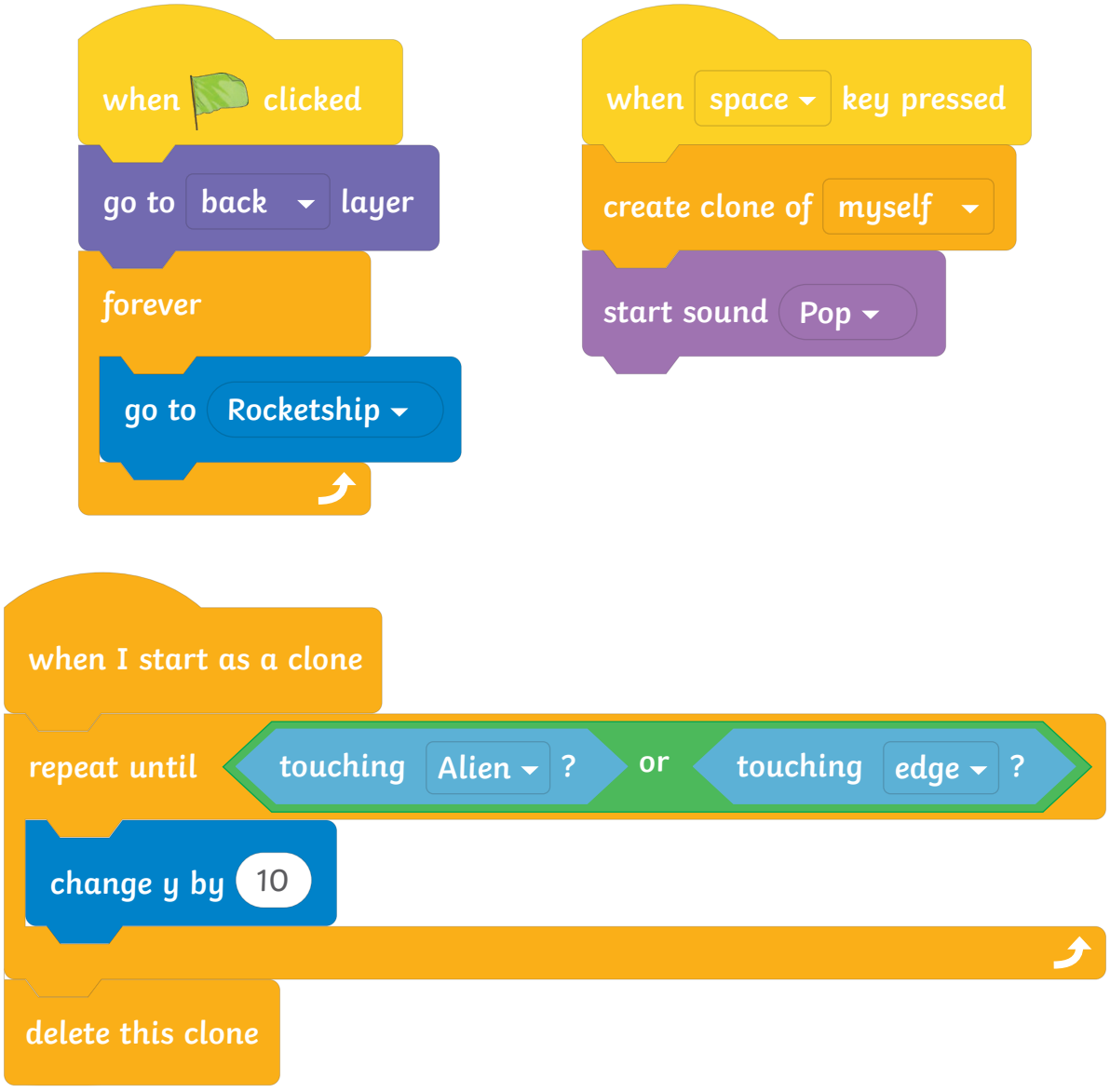


## Challenge 2

The following code belongs on the **Alien**:

## Challenge 3

The following code belongs on the **Laser**:



## Challenge 4

The following code belongs on the **Laser**: