

Blaster - Blocks – Microsoft Arcade

The following instructions will take you through the steps of creating a game where you control a space ship fighting your way through an asteroid field and trying to collect as many power ups as possible before the time runs out.

Each time a power up is collected, extra time is added to the clock.

If the space ship is hit, then a life is lost.

The game ends when either the players time runs out or all 3 lives are lost.



Controls

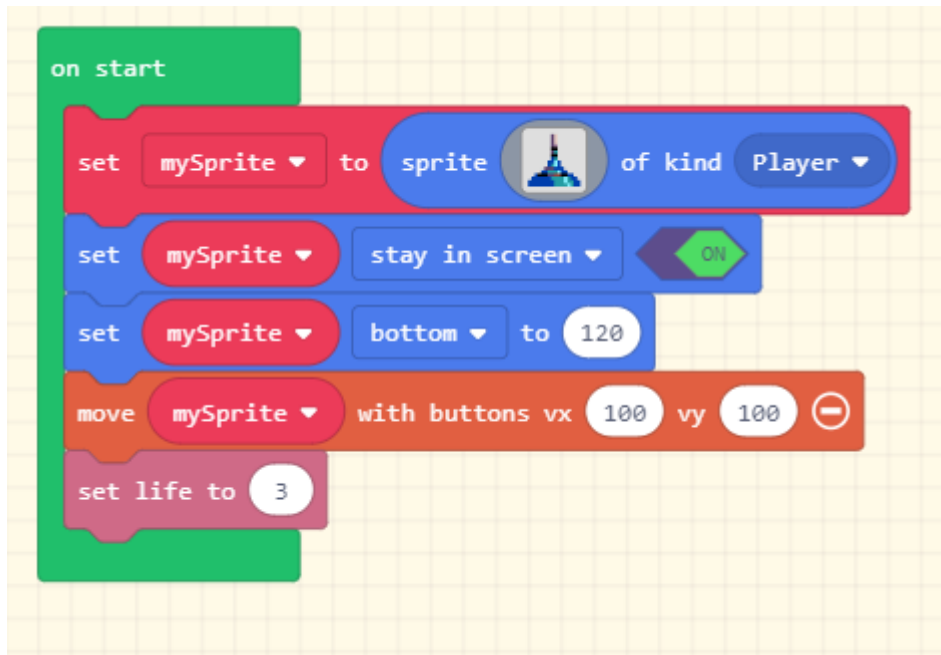
To control the space ship, use the direction keys on the console. Alternatively, it may be easier to use the keyboard mappings for the keys as follows

	Up (↑ or W)			
Left (← or A)		Right (→ or D)	B (E, X or Enter)	A (Q, Z or Space)
	Down (↓ or S)			

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Step 1 – Create the player sprite and move

The first step is to create a sprite and get it to move around the screen. For the sprite, you can either draw the sprite yourself or choose a spaceship from the gallery.



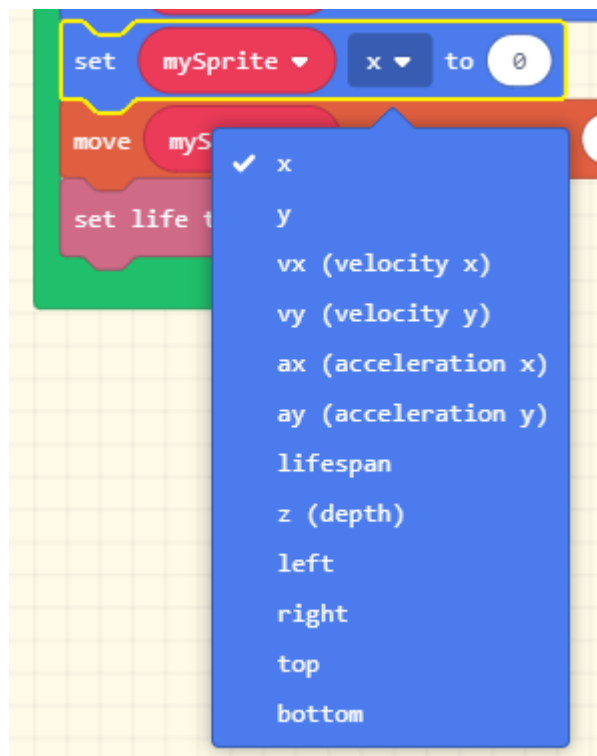
There isn't a block in the palette called:

"set mySprite bottom to 120"

The block in the palette allows all properties on a sprite to be set and appears as:

"set mySprite x to 0"

Use this block and change the property being set as shown to the right.



Experiment

Run you game and move the spaceship around the screen.

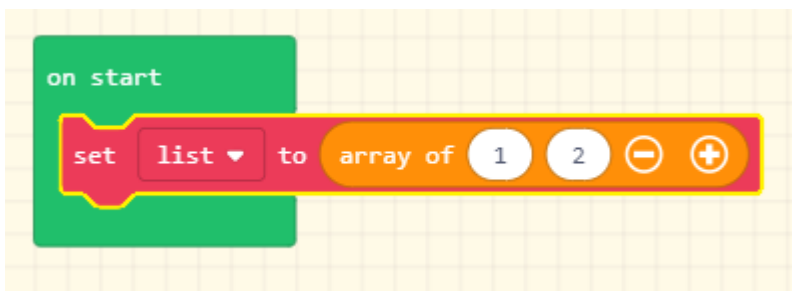
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Step 2 – Add the Asteroid field

We create the asteroid field in 2 parts. The first part is to create list of the pictures that will make up the asteroids in the field. This list has a special name called an array. The finished code for this list of pictures is shown below but because it is quite complicated to create this list, detailed instructions are given afterwards.



The following steps show how to create the list of images. Start with the block below that can be found in the Arrays section under Advanced.

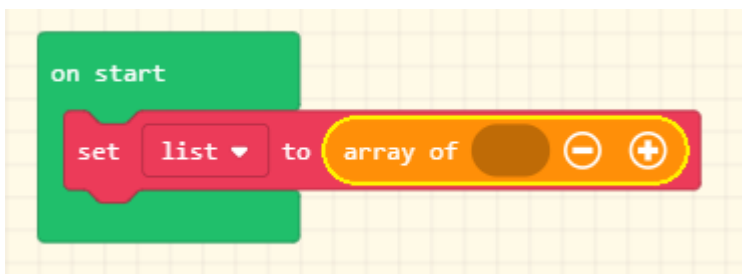


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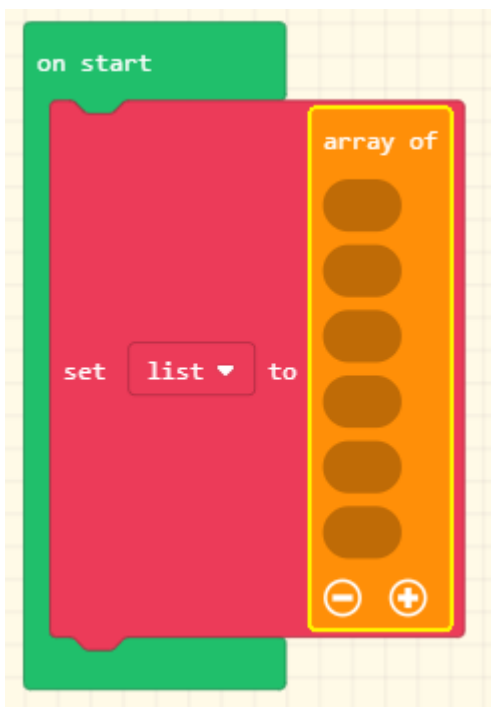
Press the minus button twice to remove the two numbers and it should look like the image below.



Press the plus button to add a space for an image.

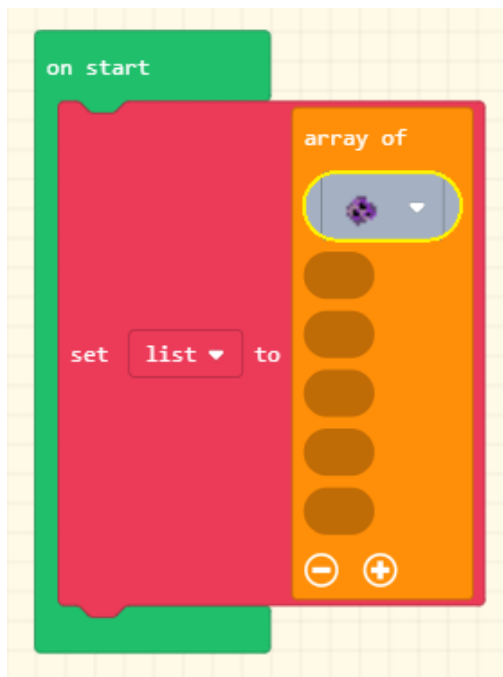


Press the plus button 5 more times to create a list that can hold 6 pictures.



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From the Images section under Advanced, there is a block that allows you to select images from the gallery. Drag that block onto the list and select an asteroid. Alternatively, you can drag on the blank image and draw your own asteroid.



Do this 5 more times, selecting a different asteroid each time.

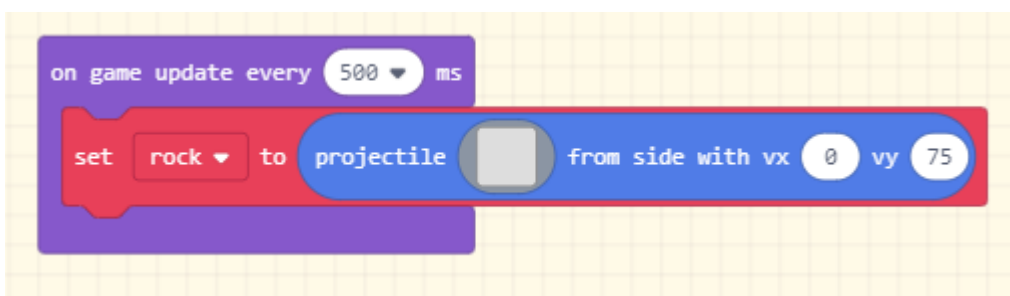


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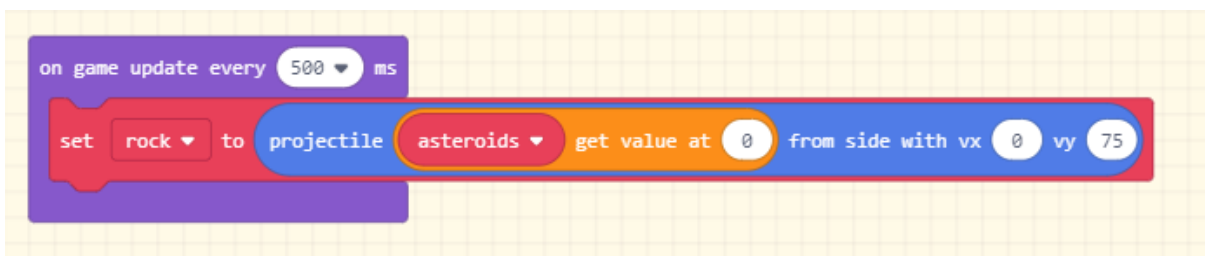
To make the asteroids appear, the following code is needed. The first line of this code is complicated so the steps to break it down are given afterwards.



Start with a new projectile (renamed to rock) by using the following block from the Sprites section.



From the Arrays section under advanced, select the “get value at” block.



From the Math section, select the “pick random” block, changing the numbers to 0 and 5.



Experiment

Change the values for “game update every 500 ms” to see what happens when you set it to 200 or 1,000. Also change the vx and vy values to see what happens.

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Step 3 – Shooting the asteroids

A spaceship really needs a laser to blast a path through the asteroid field. Add the following to your game. The laser can be hand drawn or choose something from the gallery.

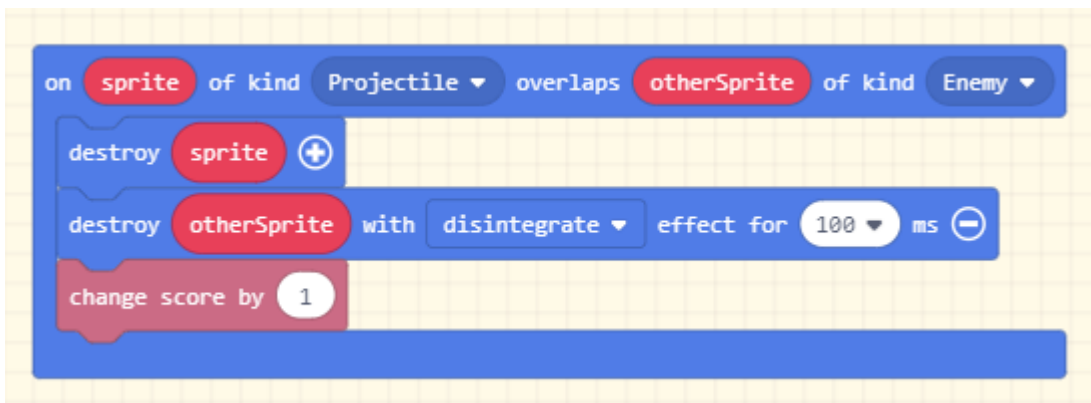


Experiment

Try the different effects that are available for the laser and pick the one you like best.

Step 4 – Shooting the asteroids

Now comes the code to destroy the asteroids when they are hit by the laser. Add the following code to your game and try it out.



Experiment

Try the different effects that are available when the asteroid is hit.

Try adding an effect to the laser (called sprite above).

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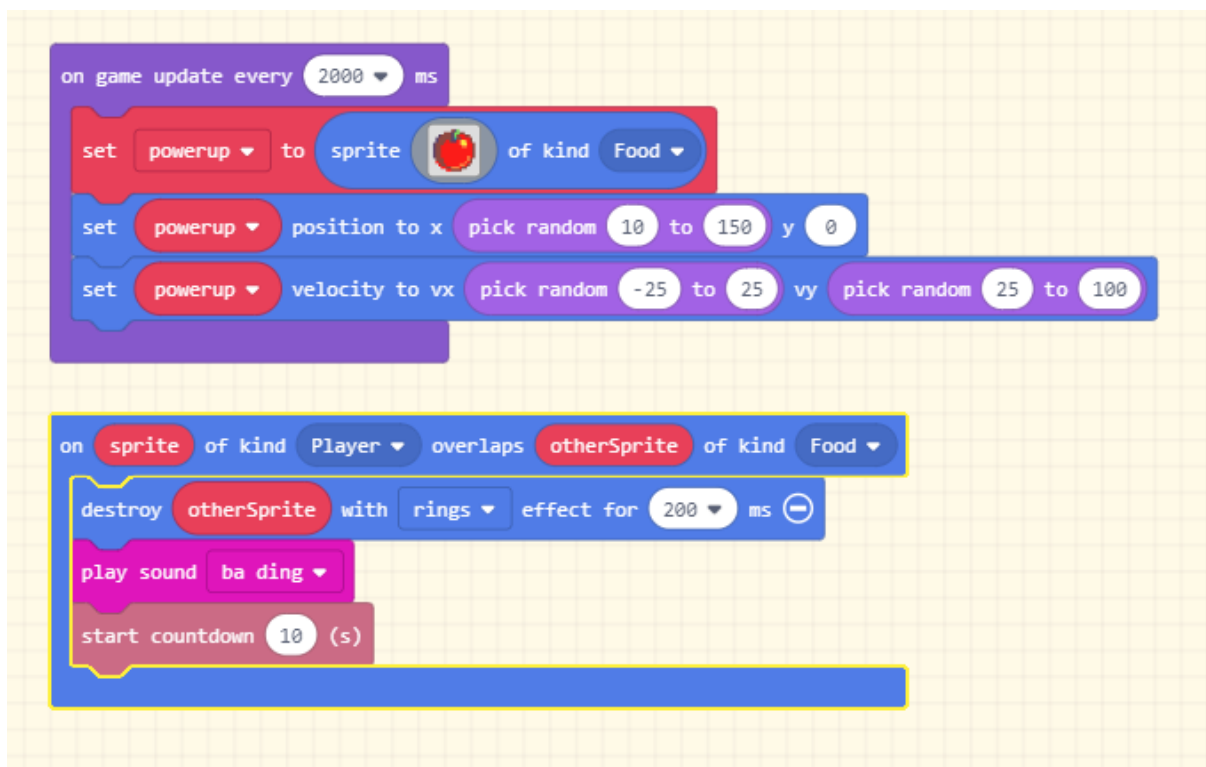
Step 5 – Colliding with the asteroids

The collisions of the spaceship with the asteroid are done in a similar way to the laser. Add this code to your game and try it out.



Step 6 – Adding the timer and power-ups

To make the game more challenging add a countdown timer to the game that gets reset each time the spaceship collects a power up. Add this code to your game and don't forget to add a "start countdown 10s" block to the end of your "on start" code.



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Extending the game

There are many ways that this game can be extended. Just a few ideas are given below.

- Award the player an extra life for each 10 power-ups that are caught.
- Make the asteroids get faster as the players score increases.
- Increase the number of asteroids each time the player gets 10 power-ups.
- Add in extra sound effects to the game. Maybe play a melody on the home screen or something when the players game ends