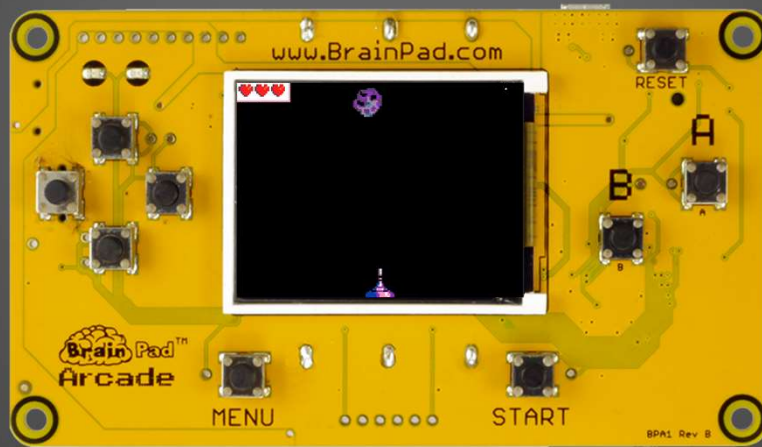


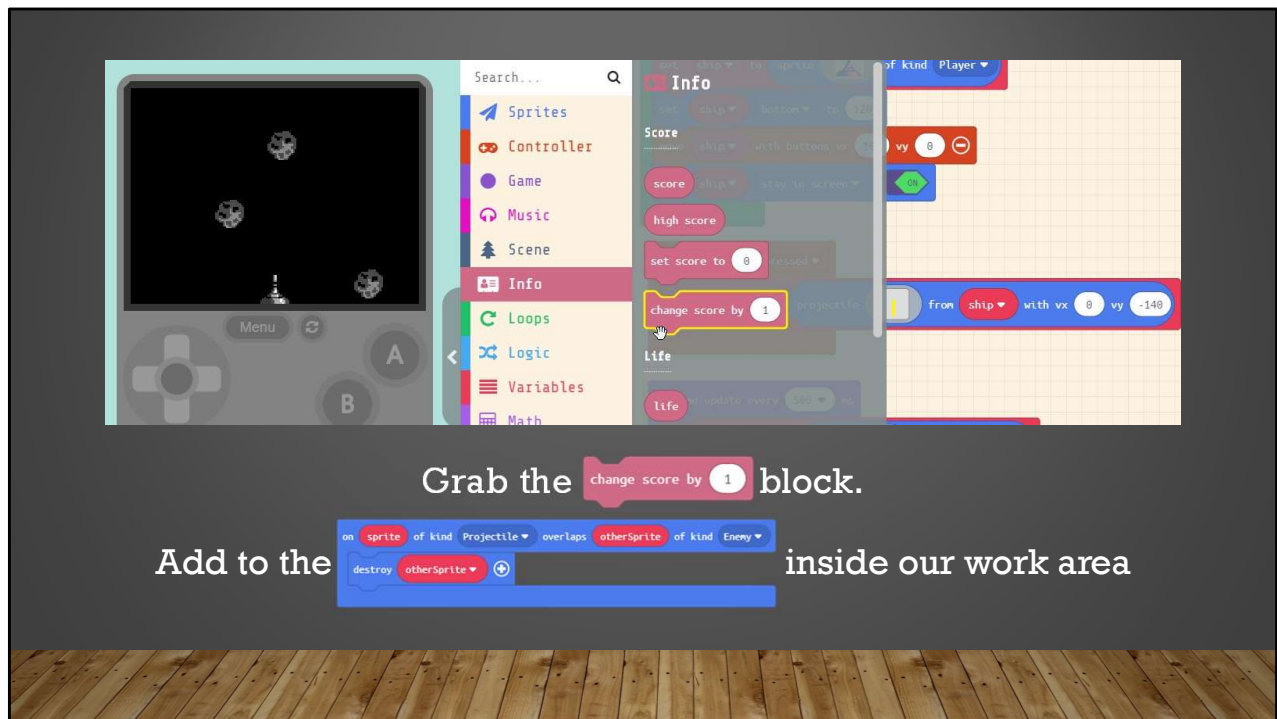


In this presentation we'll add more elements to our Space Shooter game.

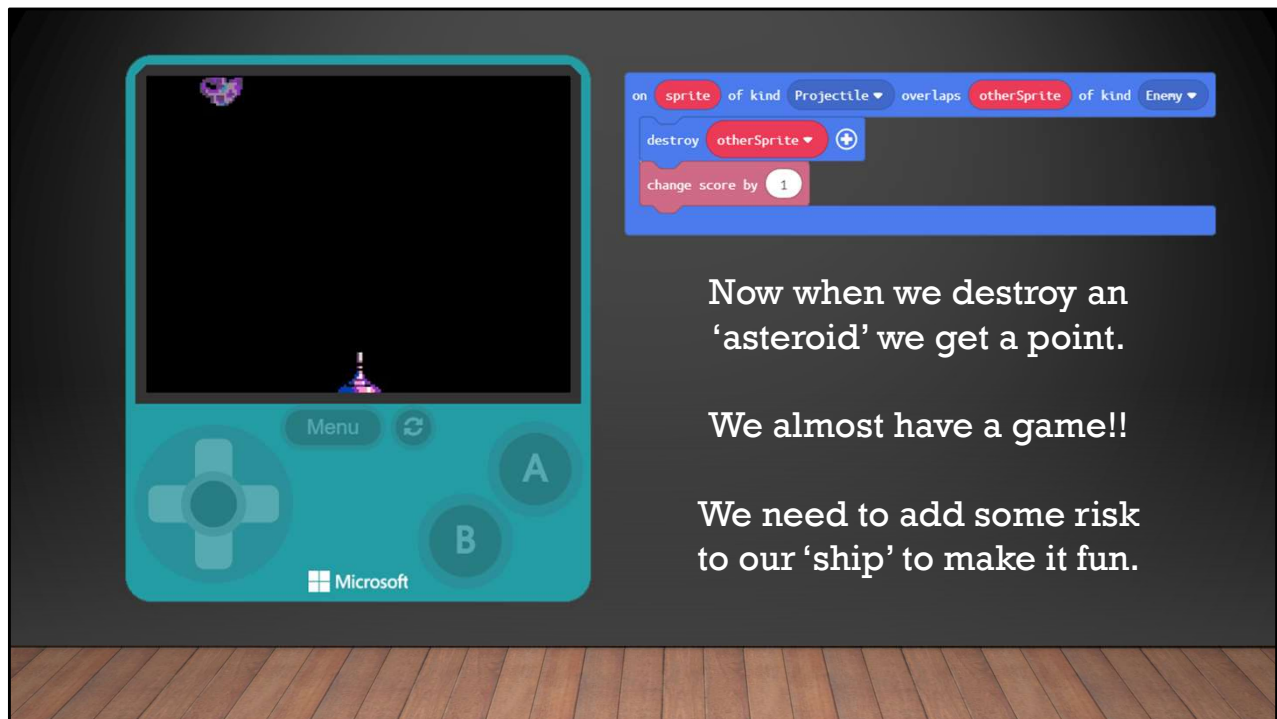


Let's add scoring, lives, and effects to our game.

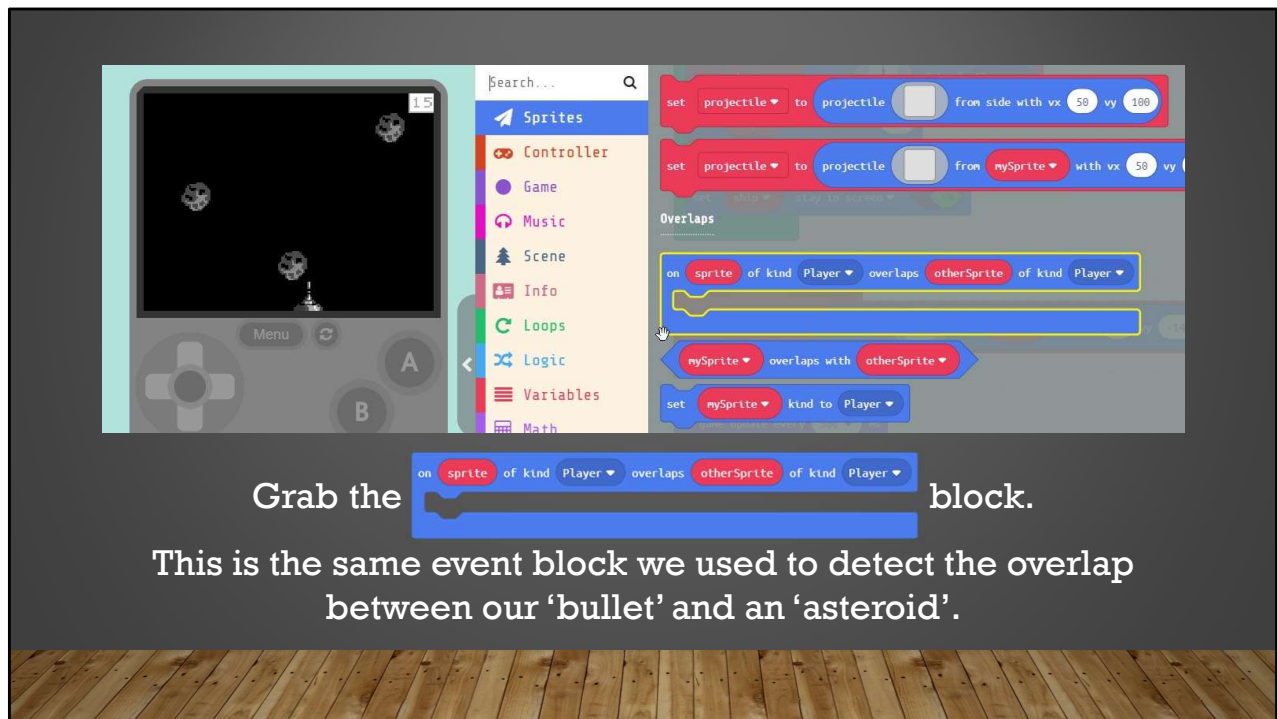
Let's add scoring, lives and effects to our game.



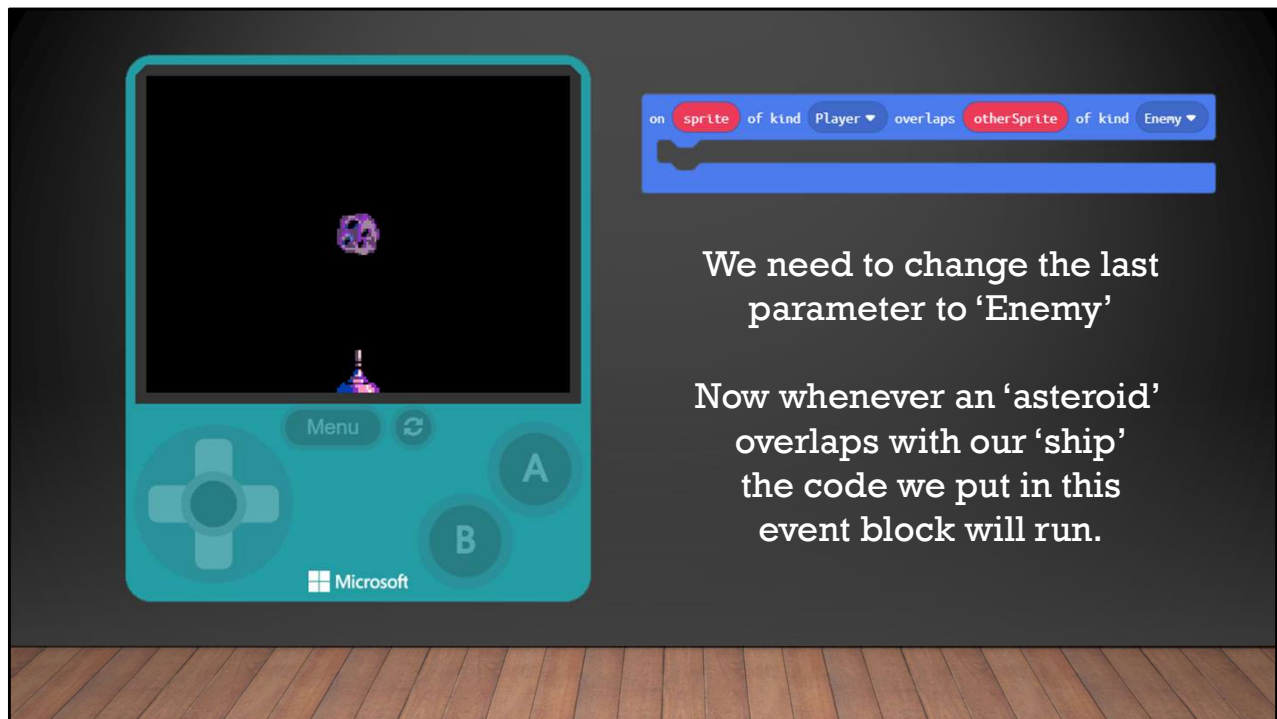
Let's add some scoring to the game. So every time we destroy an 'asteroid', we get a point. Grab the '**change score by 1**' block. It can be found under 'Info' in the menu. Drag this into our 'overlap event' that destroys the 'asteroid' when it's hit by our bullet.



Now every time we shoot an 'asteroid' we get a point. We almost have a game! We need to add some risk to the player. We need to create an overlap event, for when an 'asteroid' hits our 'ship'.



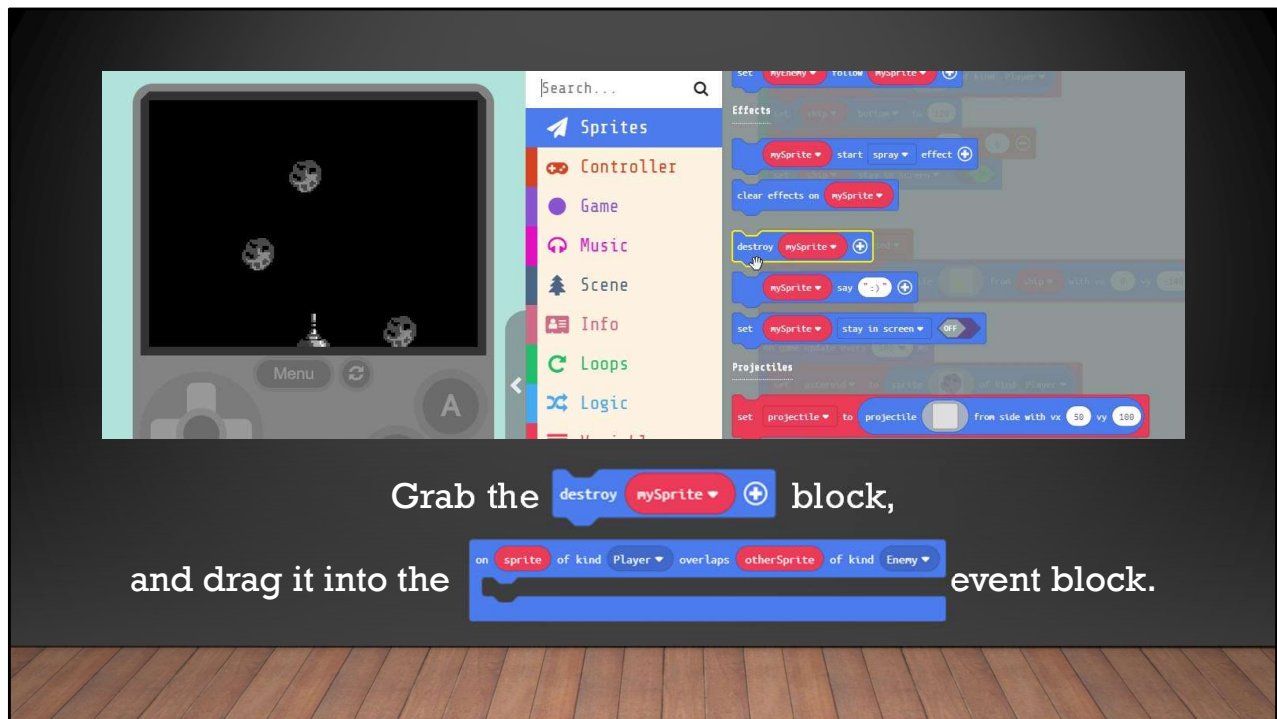
Let's add collision detection between our player 'ship' and an 'asteroid'. This will make our game more challenging. First we need to grab an **'on sprite of kind Player overlaps otherSprite'** block. This is the same block we used to detect an overlap between our 'bullet' and an 'asteroid'.



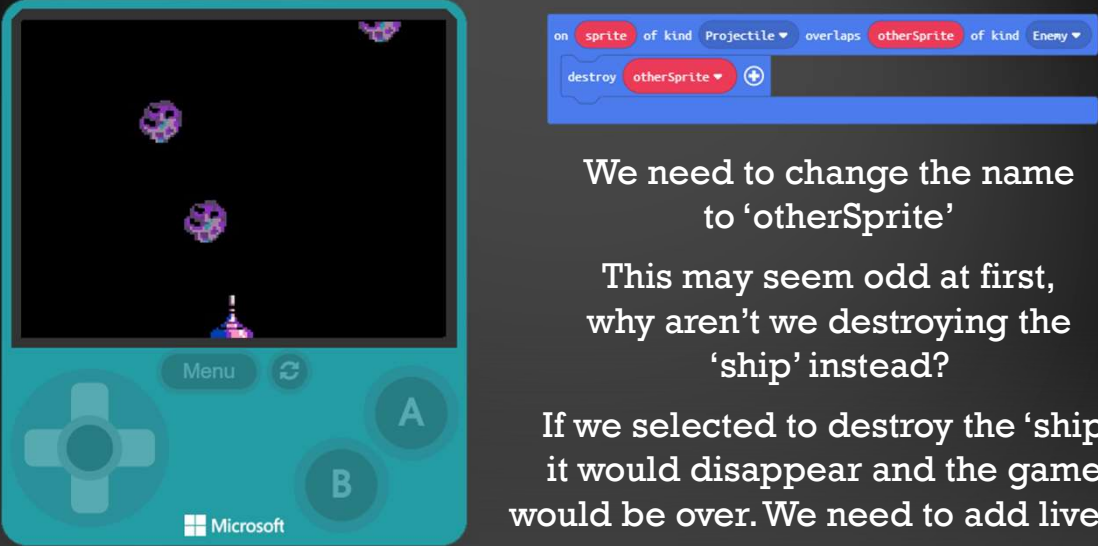
We need to change the last parameter to 'Enemy'

Now whenever an 'asteroid' overlaps with our 'ship' the code we put in this event block will run.

We need to change the last parameter to 'Enemy'. Now when ever our 'ship' overlaps with an 'asteroid' what ever code block we put in this event block will run in our program.



Grab the '**destroy mySprite**' block and drag it into the event block we just added. Keep in mind there are now 2 overlap 'event' blocks in our program now. One that destroys the 'asteroid' when it's hit with a 'bullet' and the new one we just added.



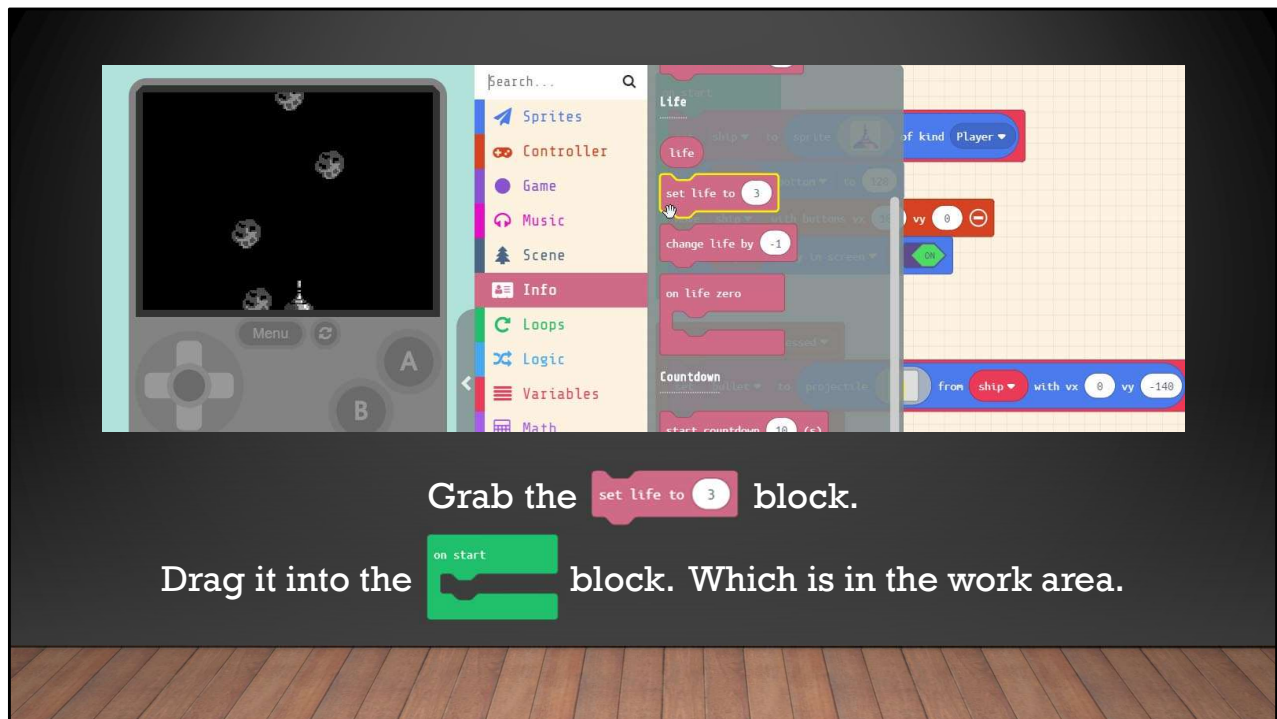
The image shows a Scratch game interface on the left and a code block on the right. The game interface features a black stage with a small ship at the bottom and several purple, spiky asteroids. The interface includes a Microsoft logo, a 'Menu' button, and 'A' and 'B' buttons. The code block on the right is a blue 'when green flag clicked' block containing a 'when green flag clicked' block with the following logic: 'on sprite of kind Projectile overlaps otherSprite of kind Enemy' followed by a 'destroy otherSprite' block.

We need to change the name to 'otherSprite'

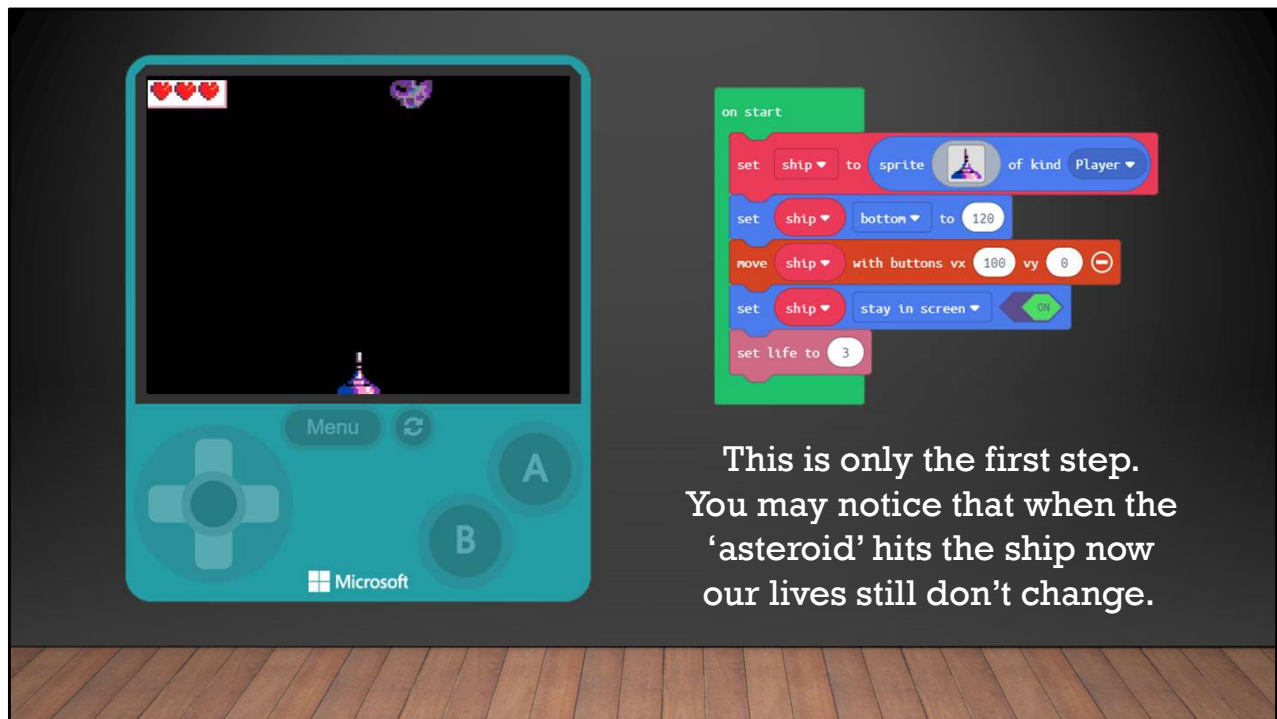
This may seem odd at first, why aren't we destroying the 'ship' instead?

If we selected to destroy the 'ship' it would disappear and the game would be over. We need to add lives!!!

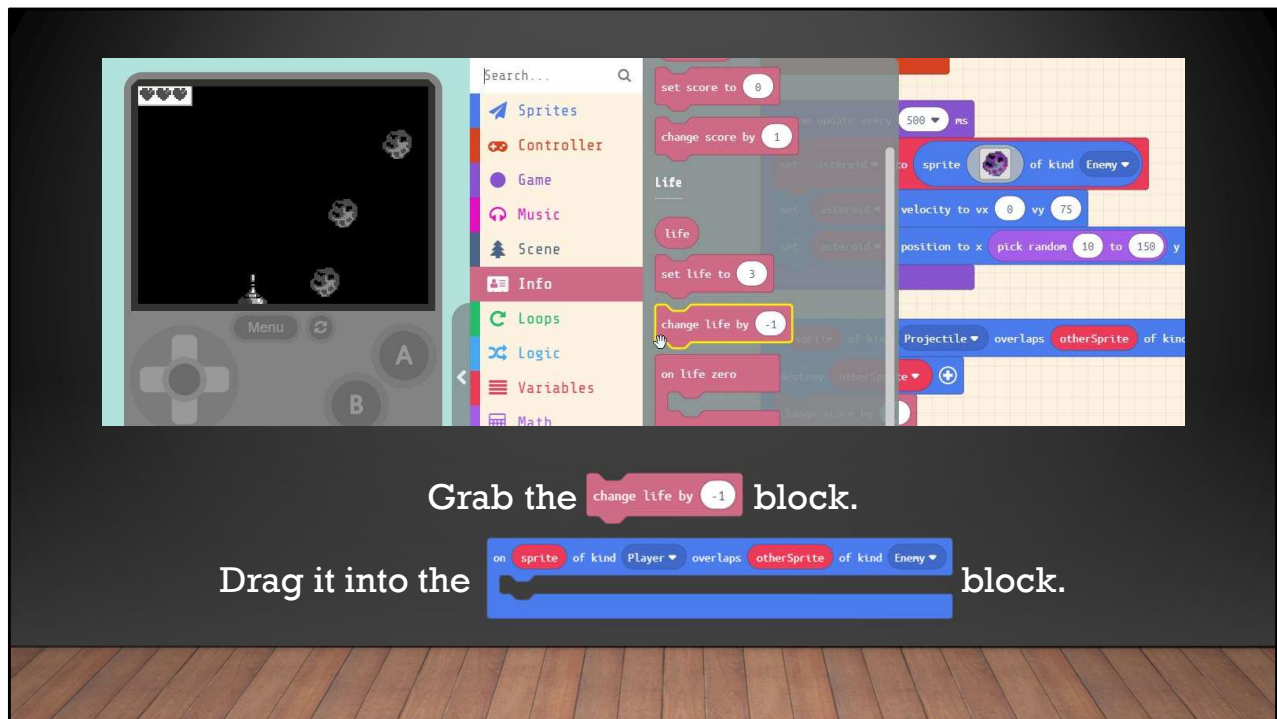
We need to change the parameter in the block to destroy the 'otherSprite' which is the 'asteroid' in this case. This may seem odd at first. Why wouldn't we destroy the 'ship' instead? If we selected to destroy the ship instead it would disappear, and the game would be over.



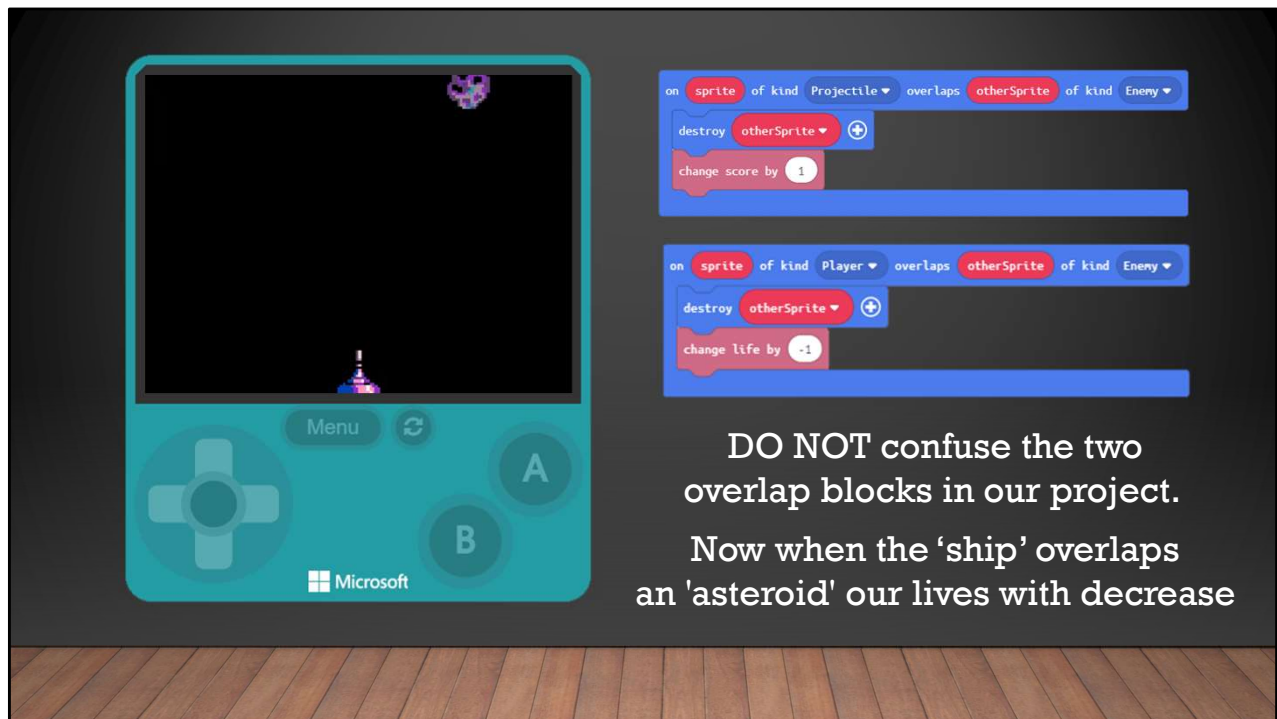
Grab the '**set life to 3**' block. You can find it under 'Info' in the menu. Drag it into the '**on start**' block. You can put it anywhere inside the block.



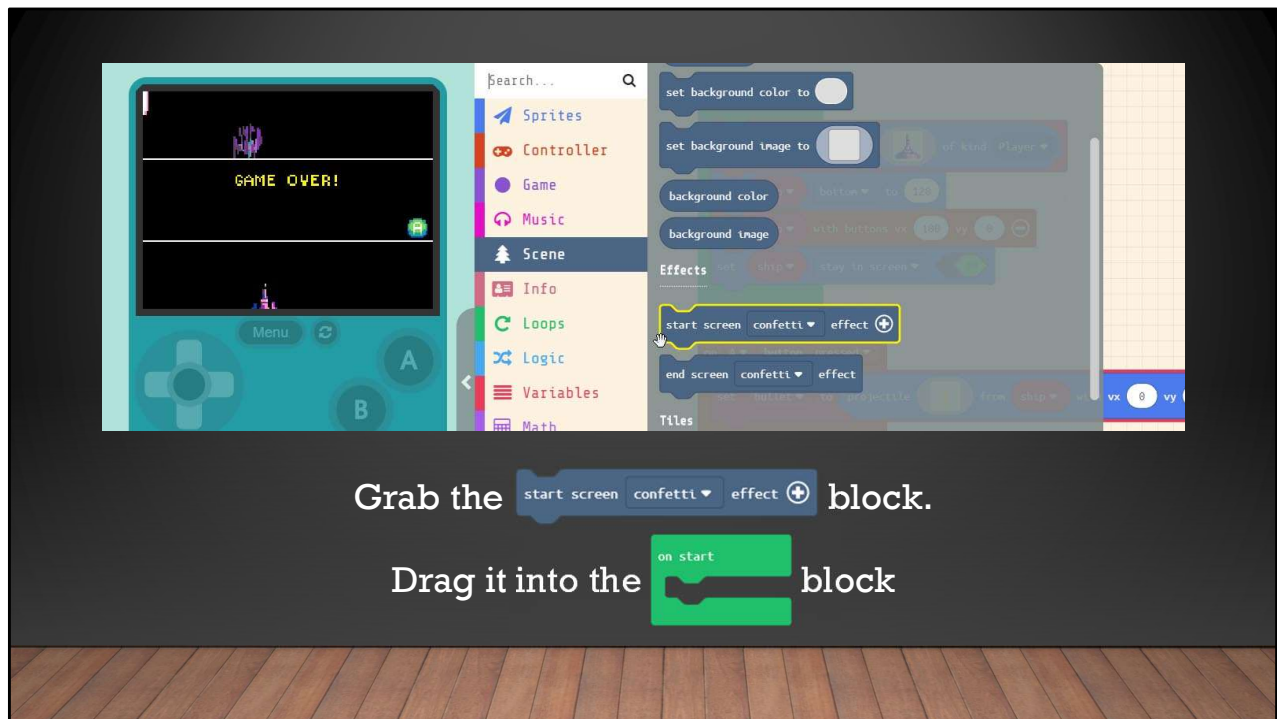
This is only the first step. You may have noticed that when the 'asteroid' hits the 'ship' nothing happens. That's because we only created the lives. We need to take away a life every time the 'asteroid' hits our 'ship'. Where do you think we would add the block that takes away a life?



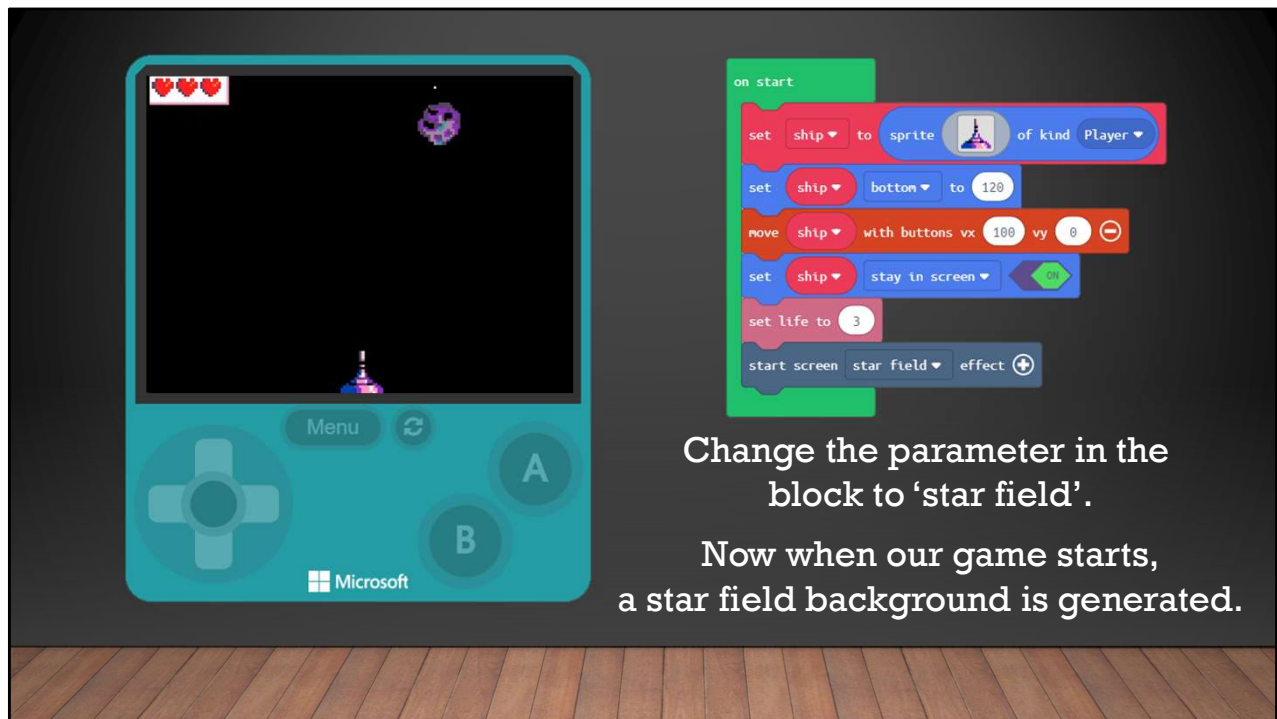
Grab the **'change life by -1'** block. You can find it under **'Info'** in the menu. Drag it into the **'on sprite of kind Player overlaps otherSprite of kind Enemy'** block.



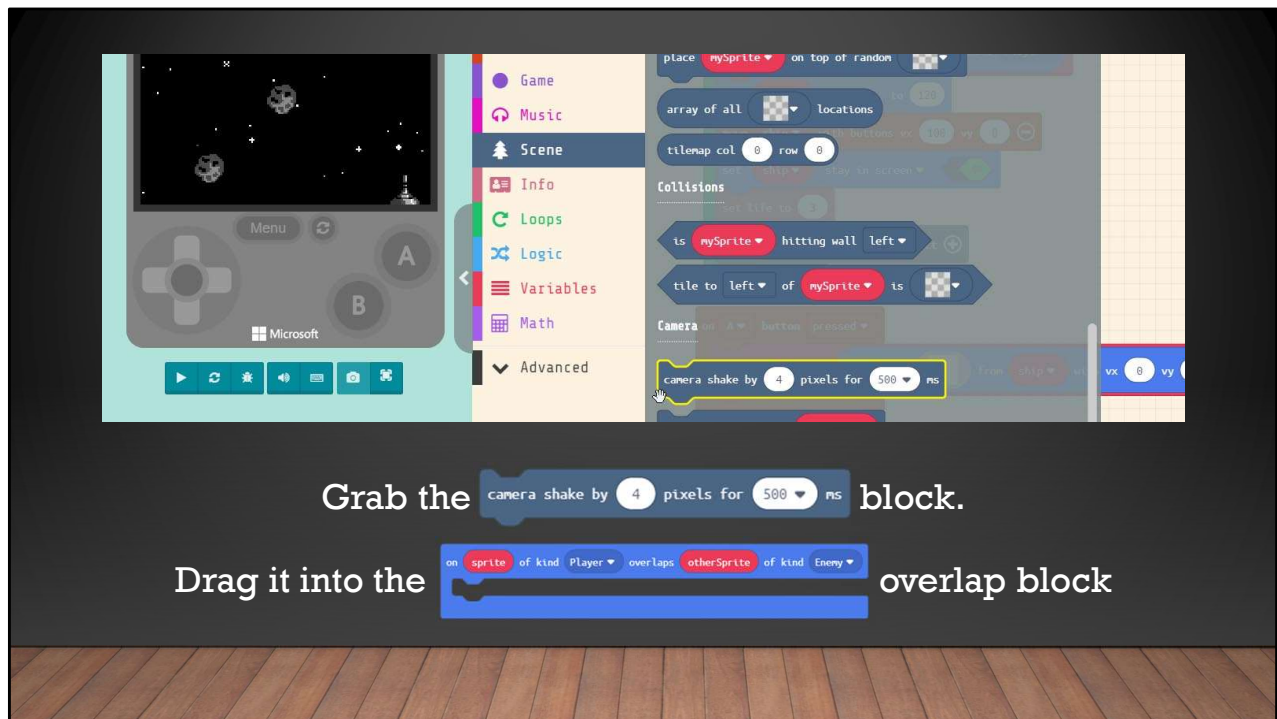
DO NOT confuse this with the other overlap block in our project. Which looks for overlaps between a 'Projectile' and an 'Enemy'. We want the one that checks for overlap between the 'Player' and an 'Enemy'. We now have the elements of a complete game. Let's add some effects to make it COOL!!



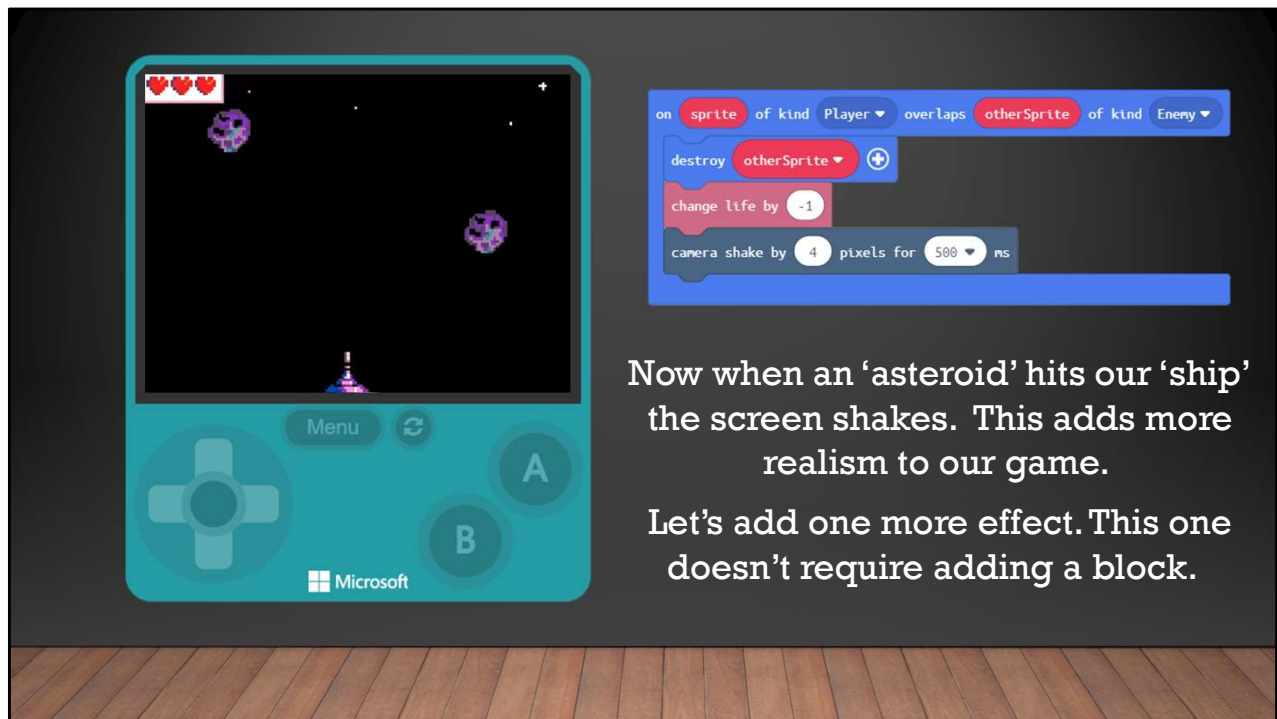
Grab the **'start screen confetti effect'** block. You can find it under **'Scene'** in the menu. Drag it into the **'on start'** block.



Change the parameter in the block to 'star field' by clicking on the down arrow. Now when our game starts a star field background is generated. This simple effects makes our game feel like we're flying through space. Let's add another EFFECT to the game.



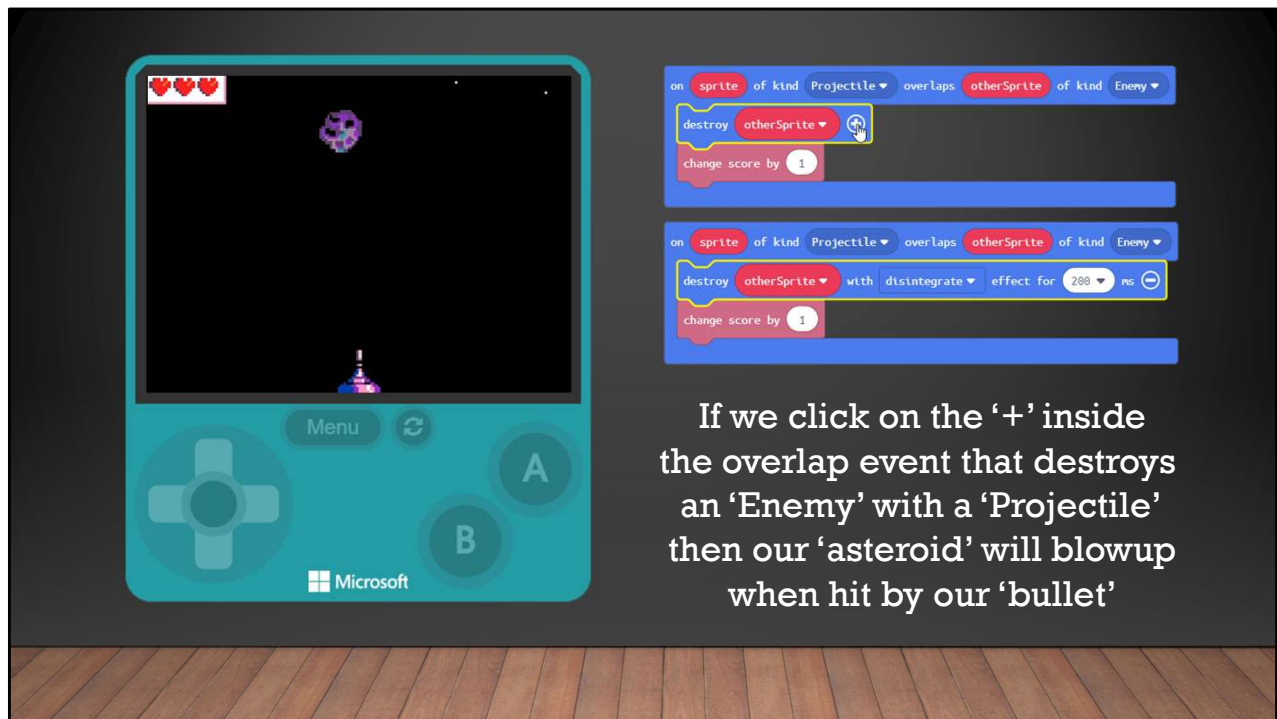
Let's shake the camera when ever an 'asteroid' hits our 'ship'. To do this we need to grab the **'camera shake by 4 pixels for 500 ms'** block. Drag this into the 'Player' overlaps 'Enemy' block. Remember we have two overlap blocks, make sure you put it in the right one.



Now when an 'asteroid' hits our 'ship' the screen shakes. This adds more realism to our game.

Let's add one more effect. This one doesn't require adding a block.

Now when an 'asteroid' hits our 'ship' the screen shakes. This adds more realism to our game. Let's add one more effect to our game. The next effect doesn't require us adding a block but changing a parameter in one of the blocks we already added.



If we click on the '+' inside the overlap event that destroys an 'Enemy' with a 'Projectile' then our 'asteroid' will blowup when hit by our 'bullet'

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Hardware Break



Now let's load our complete game on the BrainPad.

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If more time is available, students can change elements in the game turning the 'asteroids' into falling ducks. Or drawing their own ship in the 'Sprite' editor. The sky is the limit here, so have FUN!!!

EXTRA CREDIT

Now let's load what we have so far on the BrainPad.

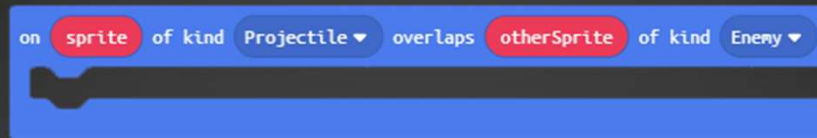


Code to Blocks:

JavaScript:

```
sprites.onOverlap(SpriteKind.Projectile, SpriteKind.Enemy, function (sprite, otherSprite) {  
  })
```

Block:



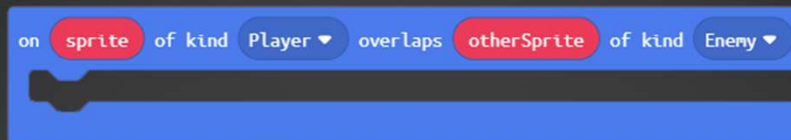


Code to Blocks:

JavaScript:

```
sprites.onOverlap(SpriteKind.Player, SpriteKind.Enemy, function (sprite, otherSprite) {  
  })
```

Block:



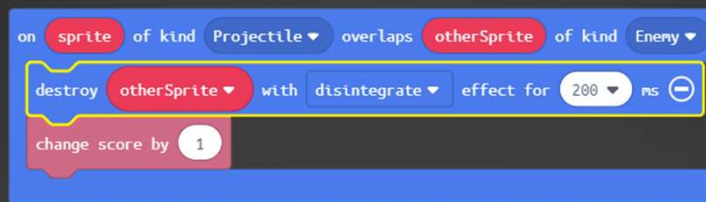


Code to Blocks:

JavaScript:

```
sprites.onOverlap(SpriteKind.Projectile, SpriteKind.Enemy, function (sprite, otherSprite) {  
    otherSprite.destroy(effects.disintegrate, 500)  
    info.changeScoreBy(1)  
})
```

Block:





Code to Blocks:

JavaScript:

```
sprites.onOverlap(SpriteKind.Player, SpriteKind.Enemy, function (sprite, otherSprite) {  
    otherSprite.destroy()  
    info.changeLifeBy(-1)  
    scene.cameraShake(4, 500)  
})
```

Block:

