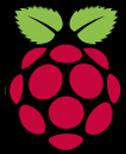


# PYGAME ZERO: Worksheet 2.0: Alien Attack



## 1: Getting Started

Load your Pi, open the LX Terminal  
Type `sudo idle3` to open Python  
then select a New Window

## 2: Import PyGame

Next import Pygame and time. In  
the Python window type,  
`import pygame`  
`import time`

## 3: Create the actors

This game has three actors, the alien, your  
ship and a rocket

```
ship = Actor('ship', (500,400))
rocket_fire=Actor('rocket_fire', (500,400))
alien = Actor('alien', center=(100,100))
```

```
WIDTH = 1000
HEIGHT = 500
```

## 4. Running your code

Save your game file and open a new LX Terminal Window.  
(Move to the game folder using `cd`)  
To run type: `sudo pgzrun name_of_your_program`

Now try these:

- 1) Move the rocket to launch from the ship upwards
- 2) Can you make another rocket appear?

### Images:

Remember that Images for  
your game must be stored in  
the same folder as your  
program. Use **lower case**  
when naming the files and  
folders. Recommended image  
size 200 x 200 pixels

### Rocket & Ships:

The rocket must  
move with the  
ship therefore  
when the ship's  
x position is  
increased by +  
or - 1 so is the  
rockets.

### Update the game play:

Use the update function to continually update the  
game window with the new position of the ship, the  
rocket and alien, this creates the animation

```
def draw():
    screen.clear()
    screen.blit('space_back', (0,0))
    ship.draw()
    rocket_fire.draw()
    alien.draw()

def move_alien(alien):
    alien.right += 1
    if alien.left > WIDTH:
        alien.right = 0

    collide = rocket_fire.colliderect(alien)
    print(collide)

    if collide == 0:
        print("missed")
    elif collide == 1:
        alien.image = 'pi'

def move_rocket(ship):
    if keyboard.left:
        ship.x -= 1
        rocket_fire.x -=1
    elif keyboard.right:
        ship.x += 1
        rocket_fire.x +=1
    elif keyboard.space:
        animate(rocket_fire, pos=(0, 0))
        screen.clear()

def update():
    move_alien(alien)
    move_rocket(ship)
    draw()
```

### Function one:

This function begins by  
clearing the game  
window and loading the  
background image. Then  
it draws the ship the  
rock and the alien onto  
the game background

### Moving the Alien:

This function moves the  
alien across the screen  
form left to right. It  
checks if it has  
collided with the  
rocket if the answer is  
False or 0 then you  
missed the alien and it  
continues on. Else it  
changes the picture of  
the alien to the Pi  
Logo to show that you  
hit the alien.

### Fire:

When you press the space bar  
the rocket is fired to the  
left side of the screen  
position 0,0