Project 4: PacMan

1. Start Scratch or open a new project.

2. Remove the cat.

3. Click on the *Paint new sprite* icon.

4. To create your PacMan begin by selecting the *Eclipse tool* and drawing the outline of a circle in a light shade of yellow.

5. Select the color yellow and using the *Fill tool*; fill in the circle. (It is important that the outline color and the fill in color are NOT the same shade). Draw an eye and an open mouth.

6. Then using the *Paintbrush tool*, place a dot in front of the PacMan. The dot needs to be at least 2 pixels x 2 pixels in size.
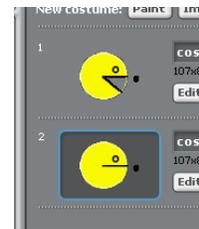
7. When finished click the *OK* button. Don't forget to rename your sprite.

8. Click on the *Costumes* tab and select the *Copy* button. Select to edit *costume2*.

9. Create this PacMan to look like his mouth is closed then click *OK*. Once your PacMan sprite has been completed, make him smaller.

10. Now it is time to create the board that PacMan plays on. Once again, click the *Paint New Sprite* icon.

11. Choose a background color and using the *Rectangle tool* draw a square the size of the screen. Then choose a different color and create the obstacles or barriers. When creating the barriers and resulting paths, keep in mind the size of your PacMan sprite. The sprite must be able to fit between your obstacles.

12. To finish the background, you must have a finish line. Choose another color (different from both the background, the obstacles, and both colors used for your PacMan) and create a finish line. Now click *OK* . Remember to rename your sprite.

    Hint: If your background sprite is not the size of your screen when you click ok, resize it to fit.

13. Click on your PacMan. To make him move we will use the orange *Control* block *When (space) is pressed.* Click on the drop down box and select *right arrow*.

14. To make the PacMan move, use *change x...*or *change change y...* The distance moved should be a small value. To keep the PacMan sprite from moving across the obstacles, a combination of an *if/else* statements and a *Sensing* block is used.

15. Select the orange *Control if/else* block.

16. Drag the *Sensing color __ is touching __?* reporter script and place it in the diamond shape next to the word *if*.

17. Click on the first color box in the *Sensing* script. Your cursor will change to an eyedropper. Use the eyedropper to select the color of the dot placed in front of your PacMan. Then, click on the second color box and choose the color of your finish line.

18. Drag the purple Looks script, Say *Hello! For 2 seconds* and drop inside the *if* bracket. Highlight "Hello!" and type *I Won!* Drag another *Say Hello! for 2 seconds* block into the scripts area and change to read "I am ready for the next level!".

19. Now drag and drop another *if/else* block into the *else* bracket. Drag the *color __ is touching __?* reporter into the diamond shape in the *if* statement.

20. The first color box should be the color of the outline of your PacMan. (You may need to enlarge your PacMan in order to select the appropriate color.) In the second color box is the color of your obstacles.

21. Drag the *broadcast* block in the second *if* slot. Click on the drop down box and select new. Type *You Lose!*

22. When you lose the game, PacMan needs to reset himself back to the beginning. Under Broadcast, place the *go to x:... y:....* Select the x and y coordinates and direction for the PacMan sprite at the beginning.

    Hint:Your sprite's current position and direction is shown above the scripts palatte.

23. The *else* part of the Control statement moves PacMan across the board. First, point the PacMan sprite to the right using the Motion script *point in direction 90*.

24. Move the sprite using the Motion script *change x by....* A small number, such as 2 or 3 is recommended.

25. Next, the costume needs to be changed. Using the *next costume* script changes the costume with each iteration.

26. Finally, add a short wait period to slow down the movement.

27. Follow a similar process to create movement for the left, up and down arrows.

Additional levels may be created by drawing additional background sprites. Don't forget to add the scripts to change the background when you win.