

Go Bananas!

Common Core Math Standards - Grade 4.OA.3

Open up the following file: CCSS_4.OA.3 found at: <https://scratch.mit.edu/projects/3185762/>

Download the project and open it in scratch by clicking

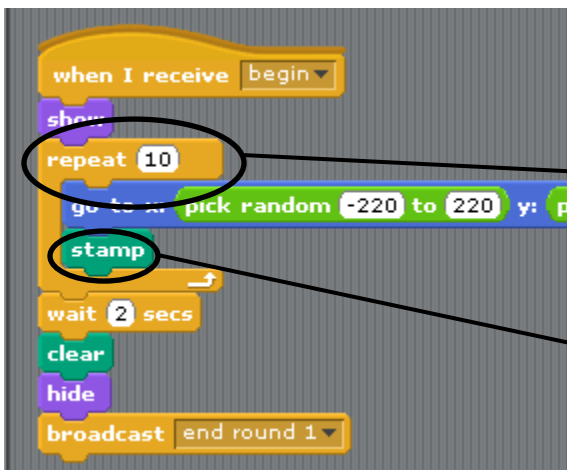
Download this project!
Download the 4 sprites and 13 scripts of "CCSS_4.OA.3" and open it in Scratch



You will see the image above. Put the program in presentation mode by clicking on the following icon.

Once in presentation mode, click on the green flag. The game will begin, and students can practice their ability to estimate. Once finished playing the game, click the arrow on the far left of the screen, or press the "Esc" key.

Take a closer look at the 'repeat' programming blocks for the banana Sprites.



The repeat button tells the computer how many stamps of the banana I want. In this case, it would create ten banana stamps; I would have ten bunches of bananas on my computer screen.

The stamp button is just like a real stamp. Think of it as the old fashioned ink stamper. This tells the computer to make stamps of the banana Sprite.

This lesson will focus on the 'repeat' and the 'wait' orange programming blocks!

Student worksheet:



Make sure you have selected the banana Sprite.



The 'stamp' block makes copies of the bananas AND the 'repeat' block tells it how many stamps of the bananas to make. In this case the stamp is going to make ten copies of the bananas.

Your task is to change the numbers in the 'repeat' box to reflect the number of banana stamps you want to appear in your game. Please fill out the chart below:

Round #	Original Game # of bananas	My game # of bananas
Round 1	10	
Round 2	32	
Round 3	88	
Round 4	60	



NOW TEST YOUR GAME - CLICK the  green flag!

Once the game is over, click on the banana Sprite and look at the 'Scripts'. Think about the timing of your game. Did you see the bananas for long enough? Did you see the bananas for too long - that you could actually count each one? In order to estimate, the computer game needs to give you enough time to count the bananas in an area, but so much time that you have the chance to count each one individually.




This tells me that when I had 10 bunches of bananas, it let me look at the screen for 2 seconds.

This tells me that when I had 32 bunches of bananas, it let me look at the screen for 5 seconds.

Now, go back and look at your programming and adjust each round for the appropriate time. Please fill out the chart below.

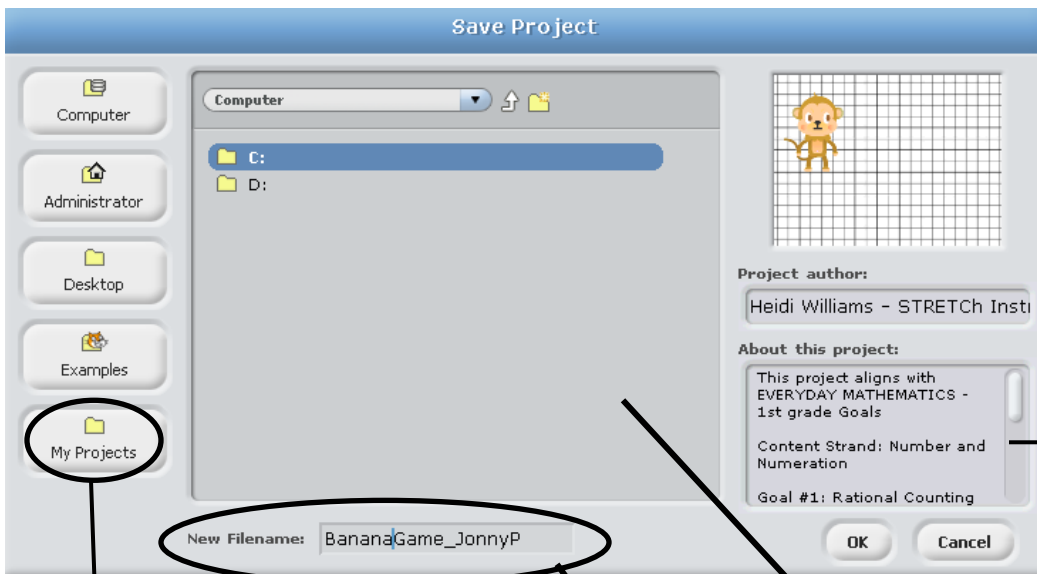
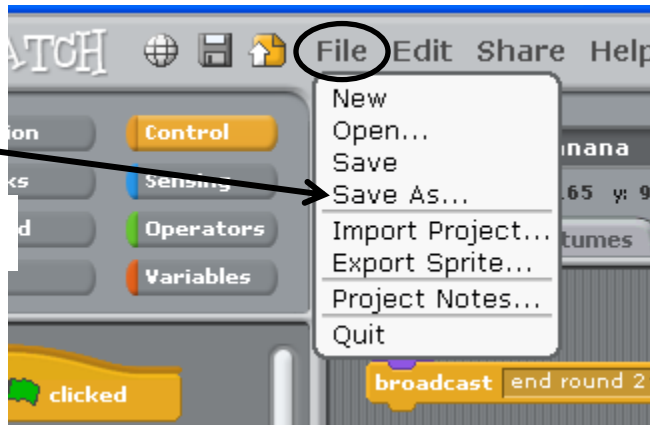
Round #	Original Game # of bananas	My game # of bananas	Original Time	My Time
Round 1	10		2	
Round 2	32		5	
Round 3	88		8	
Round 4	60		6	

NOW TEST YOUR GAME - CLICK the  green flag!

(It is IMPORTANT to test FREQUENTLY!)

NOW SAVE YOUR GAME

Click on 'File' and then select 'Save As...'

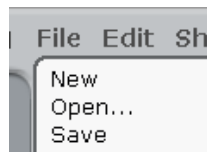


Put your name here.

Write a description of your game and any special rules here.

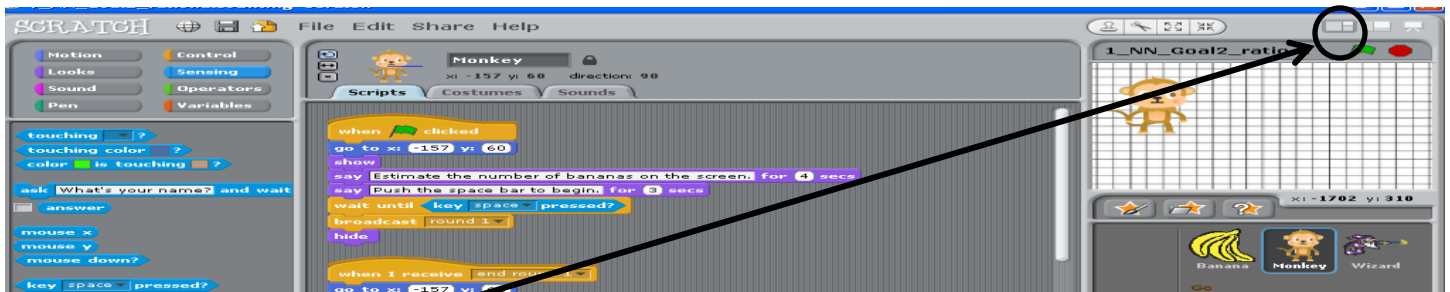
You can save to ANY of the network drives or local computer drives.

If you save here, you will only be able to see your files after you open up the Scratch program and then click on 'File' 'Open' and on 'My Projects.'



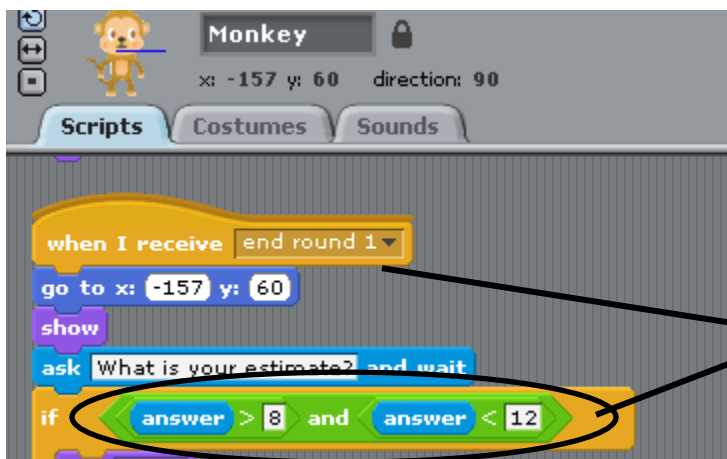
Change the file name to something you will remember. For example...
"BananaGame_JohnnyP"

The final step will be to change the values of the estimate answers.

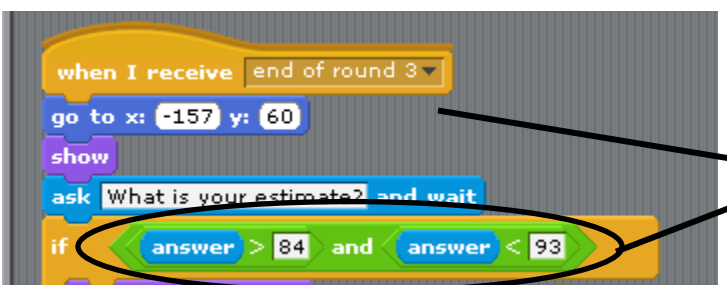


Change the mode to a wide view so you can see the programming blocks better.

Make sure you have selected the Monkey Sprite and are working with the Monkey 'Scripts.'



At the end of each round, you have to assign the range of values the estimate answer can be between. In this example, there were 10 banana stamps. I determined the answer could be between 9-11, therefore the range would be greater than 8 and less than 12.



In this example, there were 88 banana stamps. I determined the answer could be between 85-92 therefore the range would be greater than 84 and less than 93.

Now, go back and look at your programming and adjust each round for the appropriate range of values.

Please fill out the chart below.

Round #	Original Game # of bananas	My game # of bananas	Original Time	My Time	Original Values	My Values
Round 1	10		2		A>8 and A<12	
Round 2	32		5		A>27 and A<33	
Round 3	88		8		A>84 and A<93	
Round 4	60		6		A>57 and A<63	

Teacher Answers:

Students can have a variety of different values. These are the relationships that should realize:

As # of bananas increase: Amount of time needed to estimate should increase

As # of bananas increase: Range of values should increase

Round #	Original Game # of bananas	My game # of bananas	Original Time	My Time	Original Values	My Values
Round 1	10		2		$A > 8$ and $A < 12$	
Round 2	32		5		$A > 27$ and $A < 33$	
Round 3	88		8		$A > 84$ and $A < 93$	
Round 4	60		6		$A > 57$ and $A < 63$	