

Scratch day5: math

Due: 4th period, Thursday 10/8/20 by midnight
3rd & 7th periods, Friday 10/9/20 by midnight

In today's program we're going to use the following new skills:

- variables
- math operations
- random number generators

The big picture task is this: we're going to make a program that quizzes the user on their times tables up to 10 x 10. If you want to watch the video instead of reading these instructions, [here you go](#).

Steps:

1. Go to the Variables area and make two new variables, a and b.
2. Create a fun sprite. Drag over a when the green flag is clicked block. Drag over a repeat forever block.
3. Back on Variables, drag over two "set a to 0" blocks and put them inside the loop. Change one of these to say "set b to 0".
4. Go to the Operators area and drag over two copies of the "pick random 1 to 10" block. Put one each into the "set a/b to 0" blocks for the 0. This gives us two randomly chosen numbers from 1 to 10 each time through the loop.
5. In the variables area, drag over the a and b blocks:

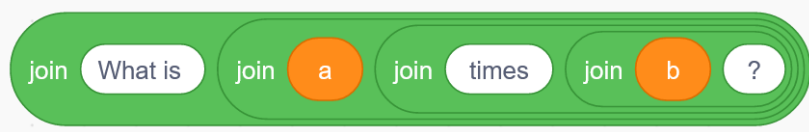


6. Drag over 4 join blocks from the Operators area. Fill them out like this:



There is a space after "What is " and spaces before and after " times ".

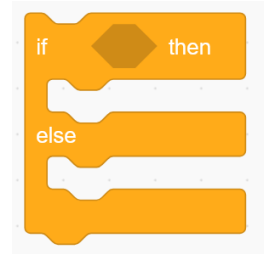
7. Put all of these joins together, like this. I recommend going from right to left.



8. Drag over an "ask" block and put it into the loop. Drag this monster join block into the ask. This asks the user to do a multiplication problem.

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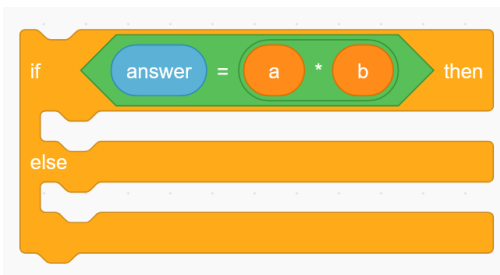
9. Drag over an if then else block. It looks like this to the right.



10. Drag over these items. The "answer" block is from Sensing, the a and b blocks are from Variables, and the = and * block are from Operators. The * means multiplication.

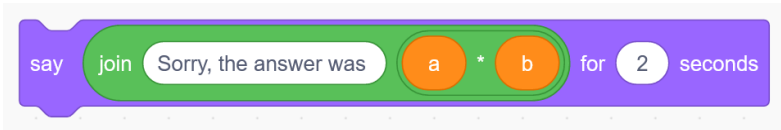


11. Put these all together like this, then drag the resulting diamond block into the if then block up top as shown.



12. In the top blank area of the if block add a say block that says "Correct!" This means the user got the answer correct.

13. In the bottom area, add a say block that says "Sorry, the correct answer is " and then gives you the correct answer. You'll have to get a copy of the "a * b" piece from step 11 (you can right click on it and choose Duplicate to get a copy) plus you'll need a join block. The finished block of code looks like this:



14. Test your program. When you enter a correct answer make sure it says "Correct" and when you enter an incorrect answer make sure it tells you that you got it wrong and also tells you the correct answer.

15. Add a fun background. You're done.

Turn in a share link to receive full credit. If you need help, [here is a video](#).

If you'd like extra credit, add another variable and then use the "change variable by 1" block to keep track of how many correct guesses the user has done. Display the number correct on the screen. Set it back to zero when the green flag is clicked.