Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In coding, what does “random” mean?

1. List three ways in which random numbers might be used to make a game fun or exciting.
2.
3.
4. Consider this line of code:

x := math->random range(-3, 4)

What are the possible values of x?

1. If you were trying to simulate the rolling of a six-sided die, what values could you replace the question marks with in this code?

roll := math->random range(?, ?)

Are the values you chose the only possible values you could use? Why or why not?

1. Suppose that you create a game board that is 500 pixels wide and 300 pixels tall.

Complete the code below by placing numbers in the blank spaces to select a random point (x, y) that could be anywhere on the board.

x := math->random range(\_\_\_\_, \_\_\_)

y := math->random range(\_\_\_\_,\_\_\_\_)

1. Complete the code below so that the sprite that is 200 pixels wide and 100 pixels tall will be placed at a random point, (x, y), on the board AND so that no part of the sprite is ever off the board.

x := math->random range(\_\_\_\_, \_\_\_)

y := math->random range(\_\_\_\_,\_\_\_\_)

1. Analyze the following code:

**var** x := math-> random range( - 1, 1)

**if** x = - 1 **then**

    ▷ show(✿ rock)

**else** do nothing **end** if

**if** x = 0 **then**

   ▷ show(✿ paper)

**else** do nothing **end** if

**if** x = 1 **then**

   ▷ show(✿ scissors)

**else** do nothing **end** if

Describe in your own words what you think the script does.

1. Think about one of the games you learned about in your research or in the class presentations.

What was the game?

What was its purpose?

Why do you think it is particularly useful for its purpose?

Describe how you think the games likely use or could use random.