

Just like Paul and his colleagues were sampling the reef, now it's your turn to collect data on the urchin densities in five different reefs.

Scientists use a square called a quadrat to count organisms of interest in an area. They can then extrapolate to make predictions about the broader densities of that organism over the area of the reef.

1. Look at the reef worksheets. On each reef the total grid is 50 by 40 squares. How many total squares are over the entire reef?

squares

2. If each square is 20cm long, how big is the reef area?

wide long

3. What is the total area of the reef? *make sure to include units*

4. Rather than counting all the urchins in the area, you have been tasked to count 10%. How much area will you need to sample?

5. How many 100cm x 100cm quadrats (5 by 5 squares) would you need to count?

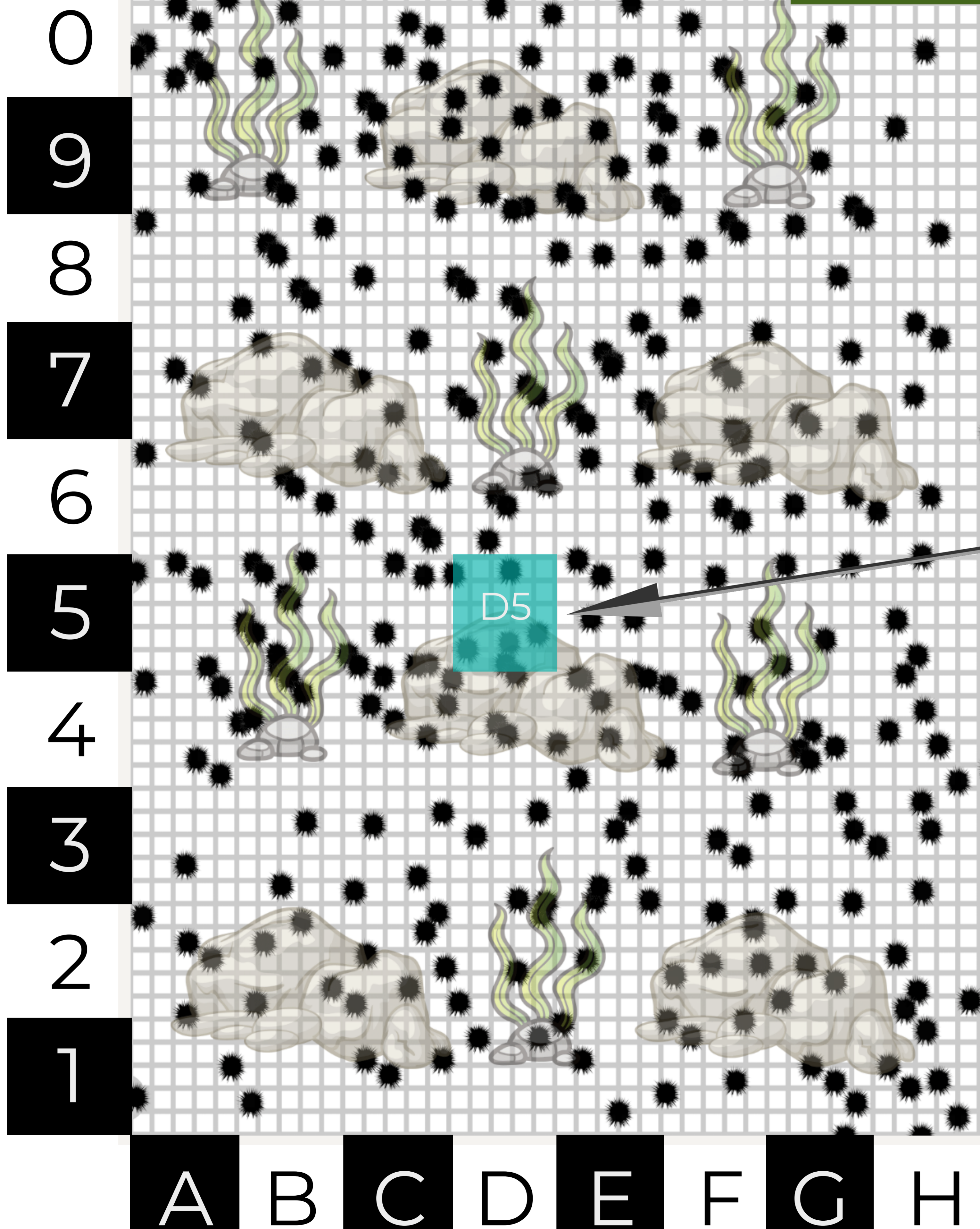
It's almost time to start sampling but first, you need to choose a method of laying your quadrats.

The reefs have been divided into a square grid of 8 x 10, labeling letters A-H along the short edge and 0-9 on the long edge. You can then use a 'battleship' style system to randomly drop the quadrats using a [random alpha numeric generator like this one](#). (see tips on next page)

Sample	Reef A	Reef B	Reef C	Reef D	Reef E
1					
2					
3					
4					
5					
6					
7					
8					
9					
Average					
Reef estimate					

1 square = 20cm x 20cm. Whole reef = 40 x 50 squares (8m x 10m)

Reef A



Characters to use a b c d e f g h
0 1 2 3 4 5 6 7 8 9

String length

Number of strings

Output in uppercase

Unique characters in string

Unique strings only

Generate Random String

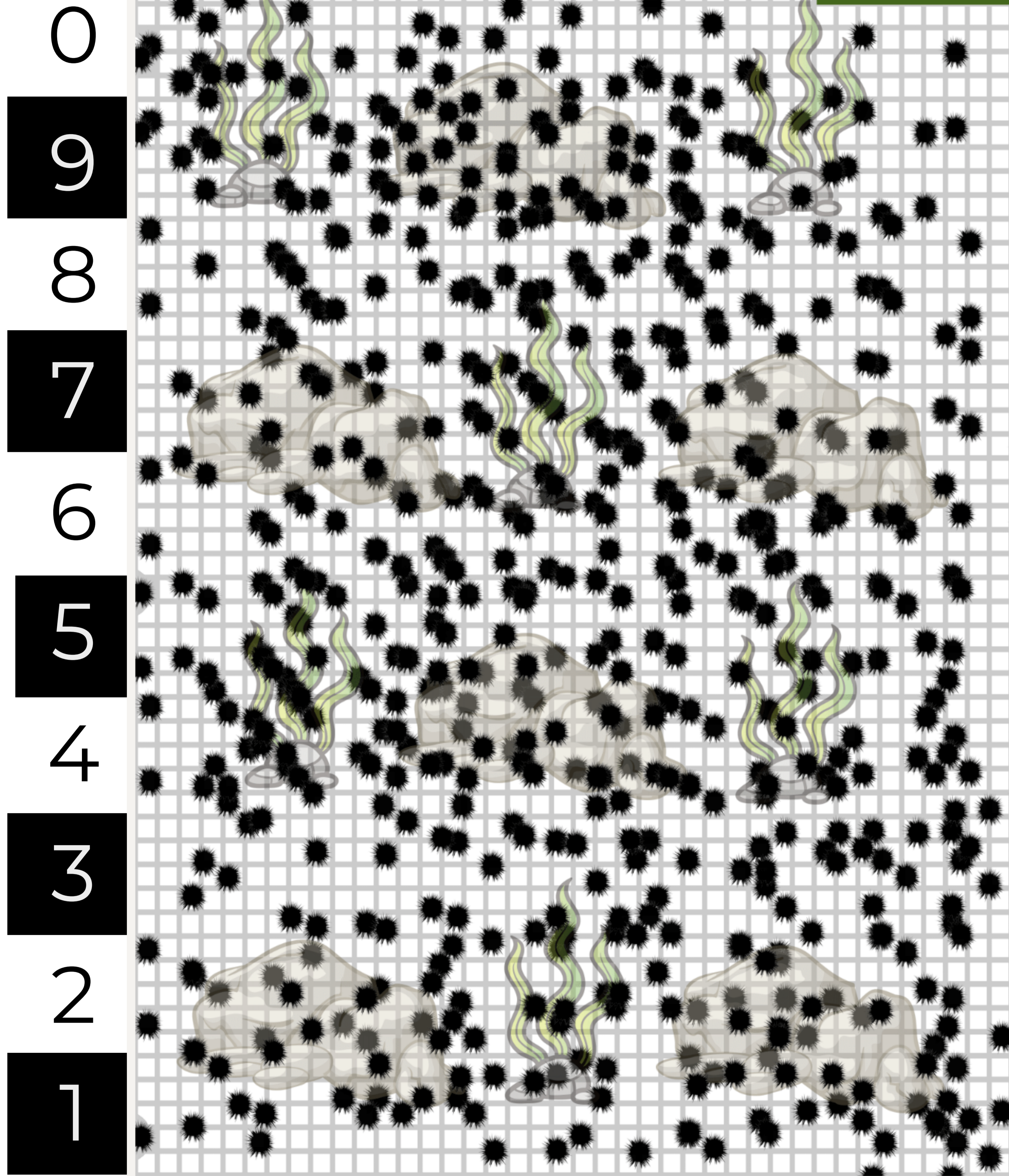
✓ Your Random String(s)

Random strings
D5
AF
71
29
1B

- Make sure characters A-H and 0-9 and listed
- Choose string length 2
- Tick output in uppercase and unique characters in string.
- Generate a string of characters
- Only use combinations of letters and numbers. ie. D5 and 1B, disregard any combinations of numbers or letters.
- Fill out the data table and make estimates for each reef.

1 square = 20cm x 20cm. Whole reef = 40 x 50 squares (8m x 10m)

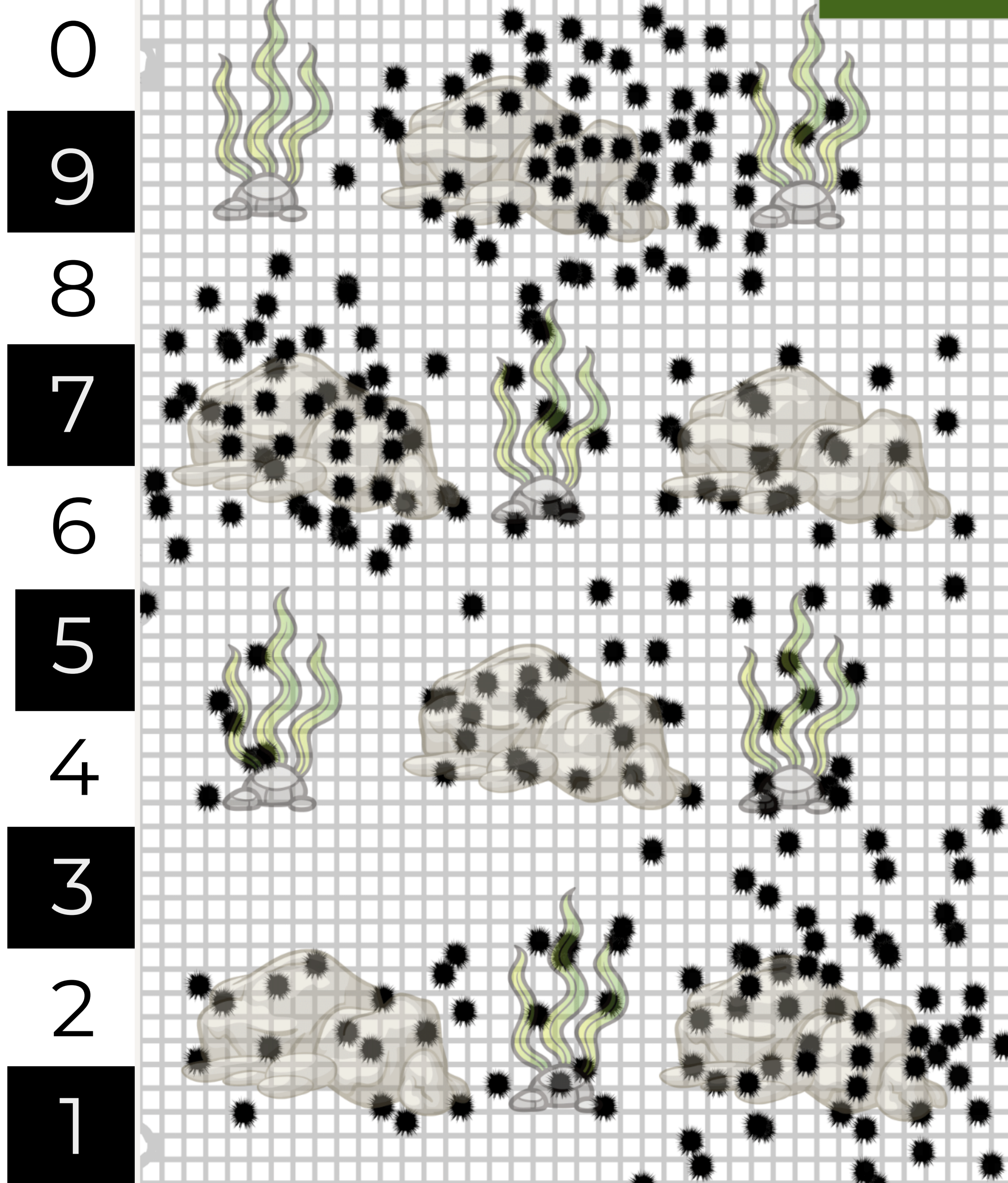
Reef B



Randomly Generated Grid Coordinates	Count
Total:	
Average:	

1 square = 20cm x 20cm. Whole reef = 40 x 50 squares (8m x 10m)

Reef D



Randomly Generated Grid Coordinates	Count
Total:	
Average:	

