The Search for Sea Stars Note Sheet

Name: _____ Date: _____

Introduction notes:

What is your hypothesis?

Using the background information you just learned, what changes do you predict in species abundance from 1979 to 2021?

Coastline Monitoring Datasheet

Names: _____ Date: _____

Methodically survey within each quadrat for your assigned year. Only ONE group is allowed to survey a quadrat at one time. Remember to Leave No Trace! When monitoring in the intertidal zone, it is important to be respectful of all organisms. This means avoiding stepping on the organisms and putting everything back as you found it.

Site Information:

Site Name	Year	Time	Time of Low Tide	Air Temp (°C)	Water Temp (°C)

Data:

Quadrat Letter (A, B, C, etc)	Number of stars	Percent cover of blue mussels	Notes on other organisms (How many urchins? Types of algae? How much algae?)
Average			

Think, Pair, Share

Name: _____ Date: _____

In your small groups of scientists from each year, discuss and answer the following questions in Compare, Visualize, and Evaluate:

Compare

1. What is the average number of stars and percent cover for each year?

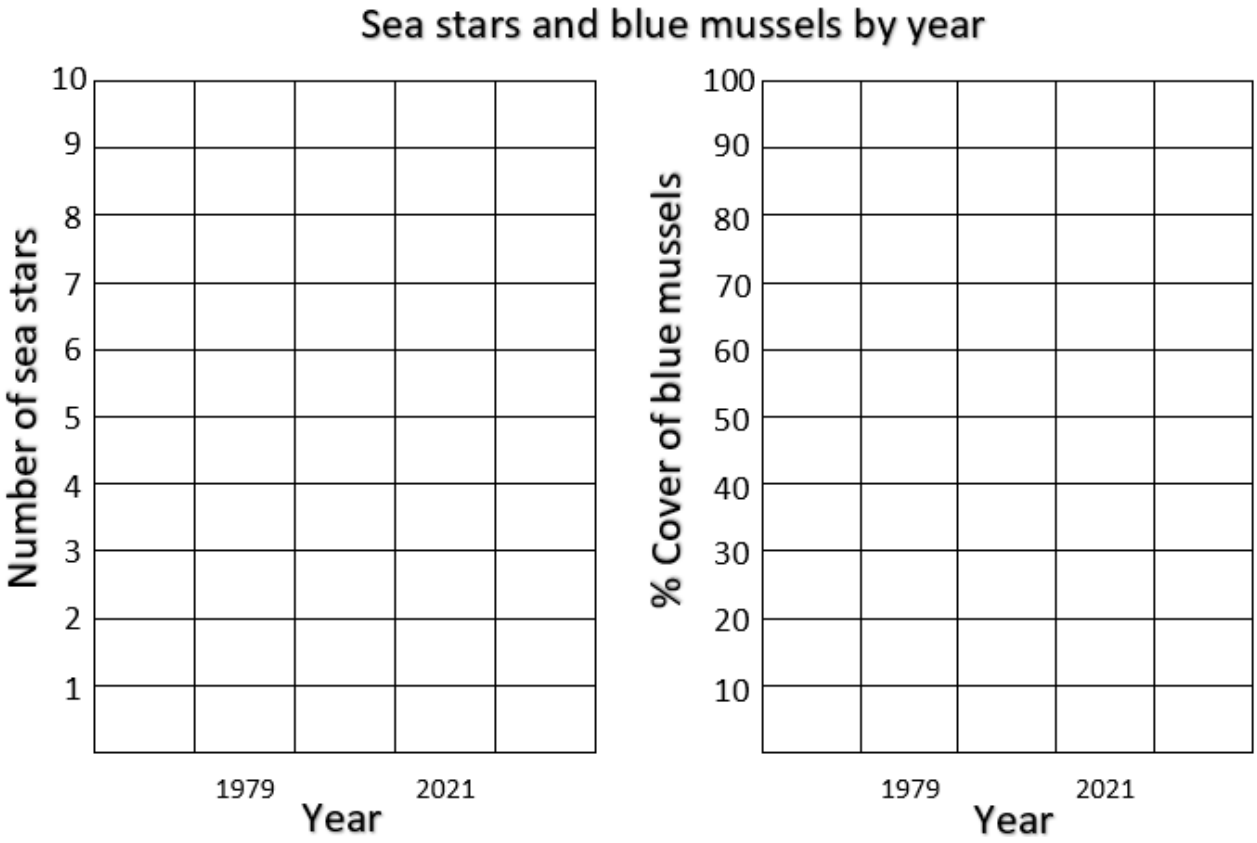
Year	Average # of Stars	Average % Cover
1979		
2021		

2. Compare findings between the two years. What is different?

3. Were there differences in how abundant or diverse the other organisms were (i.e. amount of algae, urchins, and other organisms present)? Explain the differences observed from 1979 to 2021.

Visualize

4. Use each other's data to fill in the following bar graphs to show how the number of sea stars and percent cover of blue mussels changed between each year:



Evaluate

5. Do these results support your hypothesis? Explain. NOTE: this may be different for each person!

6. Why do you think there was a change from 1979 to 2021? Use background information learned about Maine, these species, the site information, and data collected to help you brainstorm.

7. Green crabs are an invasive species on the North Atlantic coast. They eat many types of intertidal ecosystem invertebrates, including blue mussels. What do you think would happen to blue mussels and sea stars if we added green crabs to our simulation of the 2021 coastlines? Explain your answer.

8. Why do scientists use quadrats and transects? Do you think this tool is a fair assessment to understand these intertidal species populations? Explain.

9. Be prepared to share your results and key takeaways for a class discussion. Write discussion notes here:

WHAT changed (sea stars, blue mussels, algae, urchins, etc) and WHY?

Did these results support your hypothesis?

If not, what surprised you? Or what didn't surprise you?

What happens with the addition of green crabs in 2021?

Why do we use quadrats and transects? Should we?