

Name \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Worksheet 3: Oyster Catch vs Nutrient Levels in the Chesapeake Bay**  
**Testing the hypothesis that oysters maintain healthy plankton levels in the Bay**

**Plot and connect your data points on one graph:**

1. Oyster Catch in Relation to Years
2. Floating Algae to Sea Floor Algae Ratio in Relation to Years

Year	Oyster Catch (x 10 <sup>5</sup> Metric Tons)
1700	0*
1800	0*
1826	0.2
1883	5.8
1886	4.3
1891	6.2
1916	1.5
1925	1.9
1920	1.0
1935	0.7
1942	1.4
1946	0.9
1952	0.9
1957	1.2
1965	0.5
1968	1.3
1970	1.0
1972	1.2
1978	0.8
1982	1.0
1984	0.9
1985	0.4
1986	0.6

Year	Floating Algae to Sea Floor Algae Ratio
1700	0.877
1766	1.179
1834	2.943
1859	2.489
1896	3.372
1928	2.666
1957	6.016
1968	7.553
1981	7.931

\* Oyster catches in these years were so small there are no written records

**USE YOUR COMPLETED GRAPH TO ANSWER THESE QUESTIONS:**

**1. What was the ratio of floating algae to sea floor algae in 1700?**

---

---

**2. How does it compare to the ratio today?**

---

---

**3. What does the increase in floating algae indicate about today's level of nutrient pollution as opposed to the nutrient levels 300 years ago?**

---

---

**4. Why do you think the ratio of floating algae to sea floor algae levels in the Bay began to increase around 1750? (Hint: In the 1700s Europeans settlers began to establish farms in the Chesapeake region).**

---

---

**5. Did the increase in the ratio of floating algae to sea floor algae in 1750 have anything to do with the oyster catch? Why or why not?**

---

---

**6. The ratio of floating algae to sea floor algae held steady for a very long time at around three and then suddenly increased towards eight starting after 1930. Use your graph to determine what happened to the oyster catch over the same time period.**

---

---

**7. How might the decline of oysters lead to the sudden increase in the ratio of floating algae to sea floor algae levels? Use what you know about the role of oysters in the Bay food web to answer this question.**

---

---

---

---

---

---

**8. How does this graph help us to understand how oysters affect the ratio of floating algae to sea floor algae?**

---

---

---

---

---

---

**9. Why are so few oysters being caught today as compared to the end of the 1800s?**

---

---

---

**10. How would you propose to solve the problem of algae overgrowth and also help the oyster industry?**

---

---

---

---