

Whaling Museum Math for Grade 3

These questions are similar to those on the MCAS Test and are aligned to the Massachusetts Curriculum Frameworks. They can be done prior to your visit to the Museum or as a follow up.

How Low Can You Go?

A. Create a bar graph to show the length a whale dives in approximate feet.

Sperm Whale more than 2000 feet
Blue Whale 450 feet
Gray Whale 200 feet
Bowhead Whale less than 100 feet

B. If a blue whale travels 2 miles in 30 minutes. How many miles will it travel in 3 hours?

C. A blue whale will dive for food. During the day it will dive about 12 times, at night it will dive about 2 times. What can you say about the blue whale's food source given this information?



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1. Most blue whales are born in the month of May. At birth they can measure 25 feet long. Within three months they double in length. So, if a blue whale is born in May and is 25 feet long, how many inches long will the whale be in August of the same year?
2. One whale ship brought 28,000 pounds of whalebone into New Bedford. A second whale ship brought in 21,000 pounds of whalebone. How much more whalebone did the first ship bring in? What is the difference in pounds between the two?
3. Three whales are traveling in a pod. One whale weighs 150 tons, the second weighs 95 tons and the third weighs 126 tons. What is the average weight of the three whales?
4. The average gray whale weighs 35 tons. The average blue whale weighs 150 tons. How much more does the blue whale weigh?
5. In an average day the blue whale will surface to spout water about 12 times. How many times will it spout in one week, in two weeks?
6. A blue whale calf will drink 13 gallons of milk a day. If a month is 30 days, how much will the calf drink in one month, in three months?
7. A sperm whale can dive and stay down for 58 minutes. The blue whale can dive and stay down for 11 minutes. How much longer can the sperm whale stay down than the blue whale?
8. In 1851, 90,561 barrels of sperm oil were brought into New Bedford. Round off to the nearest hundred.



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Whaling Museum Math for Grade 4

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In 1859 petroleum was discovered in Titusville, Pennsylvania. This development eventually brought an end to the use of whale oil as a source of illumination. In 1860 Charles W. Morgan noted that sperm oil was selling at \$1.40 a gallon and kerosene, a by-product of petroleum, was selling at \$.75 at gallon. At these 1860 prices how much would 127 gallons of sperm oil cost? Compare the cost of 127 gallons of sperm oil to 127 gallons of kerosene?

If you were a crewmember on a whaling ship you would be assigned bunk space in the fo'c'sle (forecastle). This space measured two feet by six feet. If you had to sleep in this bunk how many inches long would you prefer to be 34" or 68"? Explain your answer.

In one 24 hour period a seaman stood watch seven times. How many hours was he on watch in a week, in one month and in one year?



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At the end of one of her voyages the Lagoda made a net profit of \$14,061.75. This profit was divided up into portions and each member of the crew received an agreed upon portion or lay for his work. Crew members did not all receive the same portion of the profit. Use the information on the following chart and a calculator to answer some questions about the work aboard the Lagoda.

Using a calculator determine how much each person was paid from a net profit of \$14,061.75. You may round your answer off.

First Mate $\frac{1}{30}$ _____

Harpooner $\frac{1}{120}$ _____

Seaman $\frac{1}{175}$ _____

Green Hand $\frac{1}{250}$ _____

Cook $\frac{1}{150}$ _____

Cooper $\frac{1}{75}$ _____

Blacksmith $\frac{1}{90}$ _____

1. Which person received the most money?
2. Which person received the least?
3. In terms of pay, how much more did a harpooner receive compared to a green hand? Why do you think a harpooner was worth more than a green hand?
4. If you were going on this voyage that may have lasted three years, which job would you like to have? What are some of the things you would consider when making your decision? Would you take the job that paid the most or would you take the job you enjoyed the most? Explain your answer.



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Museum Math for Grade 4

Look on pg. 14 of A New Bedford Voyage to answer the following question. On an average how many hours in a day did a seaman get to rest or sleep?

If it was your turn to stand watch on a voyage, would you rather stand watch with half the crew or a quarter of the crew? Your ship has 125 crew mates aboard who are responsible to stand watch.



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