



Marine Mammal Meals

Name: _____

Period: _____

Date: _____

Placing a Fish Order

Dolphin Research Center is currently home to sixteen Atlantic bottlenose dolphins and two California sea lions. The main focus at DRC is providing excellent care to the animals that call DRC home. Animal husbandry refers to the science and practice of breeding and caring for animals. This includes everything from meeting nutritional needs to providing medical care to maintaining habitats. Meeting all of these needs requires collaboration between the medical staff, animal training staff, and animal care staff at a facility.

At Dolphin Research Center, preparing marine mammal meals is no simple task. The food preparation takes place in a building called the Fish House. Every morning, trainers and interns get to work weighing fish to be placed in individual buckets for each of our dolphins and sea lions. Most of the eighteen animals receive three meals a day; this means staff and interns have the daunting task of preparing at least 54 buckets every day!

Herring and capelin are the two types of fish that are commonly used at Dolphin Research Center. In addition to these two, other kinds of fish are incorporated into the animals' diets on a rotating basis to provide variety. Some of the other types of fish used include smelt, silversides, sardines, and squid.

The Fish House Manager is responsible for overseeing the day-to-day functioning of the fish house, as well as for ordering the fish supply. For every new shipment that comes in, laboratory testing must be done to determine the health and caloric content of the fish. Diets must be adjusted according to the number of calories in each type of fish. The Fish House Manager must be highly proficient in mathematics in order to successfully carry out all of these job responsibilities.

| Type of Fish | Kilograms of Fish Used | | | | | | | | | | | | | |
|--------------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
| Herring (1) | 25 | 26 | 29 | 27 | 27 | 28 | 28 | 29 | 26 | 29 | 28 | 29 | 26 | 29 |
| Herring (2) | 9 | 8 | 9 | 7 | 8 | 7 | 7 | 9 | 10 | 9 | 10 | 7 | 8 | 8 |
| Smelt | 29 | 27 | 28 | 27 | 26 | 26 | 26 | 27 | 28 | 27 | 28 | 27 | 26 | 27 |
| Capelin | 31 | 32 | 32 | 31 | 32 | 33 | 32 | 31 | 32 | 31 | 32 | 33 | 33 | 32 |
| Sardines | 10 | 11 | 10 | 9 | 9 | 11 | 10 | 11 | 10 | 10 | 10 | 10 | 11 | 11 |

NOTE: Herring (1) and Herring (2) are just two different types of herring. Herring (1) are usually larger than Herring (2).





Marine Mammal Meals

| Type of Fish | Cost per Case | Kilograms per Case |
|--------------|---------------|--------------------|
| Herring (1) | \$13.20 | 20 |
| Herring (2) | \$15.00 | 11 |
| Smelt | \$22.50 | 11 |
| Capelin | \$8.91 | 15 |
| Sardines | \$32.50 | 23 |

1. The amount of fish used on a daily basis does not always stay the same. One large reason there is so much variation is that not all of the individual fish in each of the cases is suitable to feed to the dolphins. As staff members weigh out the proper amounts, they individually inspect each fish. They look to make sure the fish meet a certain set of criteria, including the presence of both eyes and no body tears. Any fish that do not meet the criteria cannot be used in the buckets. Another reason for the variation is that the diet of each animal may change slightly. Begin by calculating the average amount of fish used per day during the first two weeks of August. Round your answers to the nearest kilogram.

| Type of Fish | Average Kilograms Used per Day |
|--------------|--------------------------------|
| Herring (1) | |
| Herring (2) | |
| Smelt | |
| Capelin | |
| Sardines | |

2. You will be ordering a three month (90-day) supply of fish. Based on the figures you calculated in Question 1, determine how many kilograms of each type of fish you will need to order.

| Type of Fish | Total Kilograms to be Ordered |
|--------------|-------------------------------|
| Herring (1) | |
| Herring (2) | |
| Smelt | |
| Capelin | |
| Sardines | |





Marine Mammal Meals

3. When ordering from the supplier, you cannot simply tell them how many kilograms you need. They sell fish by the case, so calculate the number of cases of each type of fish you will need to order. You cannot order partial cases, so if your answer is not a whole number round up to the next whole case.

| Type of Fish | Number of Cases to be Ordered |
|--------------|-------------------------------|
| Herring (1) | |
| Herring (2) | |
| Smelt | |
| Capelin | |
| Sardines | |

4. Calculate how much money you will be spending on each type of fish, and the total cost of this order.

| Type of Fish | Cost |
|---------------|------|
| Herring (1) | |
| Herring (2) | |
| Smelt | |
| Capelin | |
| Sardines | |
| TOTAL: | |

5. The facility has budgeted \$50,000 for fish for the upcoming year. Based on the costs of the 3-month order you have just placed, do you think enough money has been budgeted for the year? Support your answer with specific numbers!

