



# Marine Mammal Meals

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Name: \_\_\_\_\_

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## Graphing Sea Lion Diets

Dolphin Research Center is home to two male California sea lions. Loki is the older of the two (he turned 18 on June 16, 2005), and was born at Dolphin Research Center. Kilo joined the Dolphin Research Center family after moving from Sea World in Orlando, and he celebrated his fourth birthday on June 28, 2005.

California sea lions belong to the scientific family Otariidae, (This term means “little ears”—all of the species found in this family have small ear flaps on the sides of their heads!) Female California sea lions weigh between 200 and 400 pounds. Males usually weigh between 600 and 800 pounds, although there are records of male sea lions weighing up to 1000 pounds. California sea lions are typically found along the West Coast of the United States, as well as parts of Mexico. California sea lions are very social, and spend their time ashore in groups. While at sea, the sea lions are almost always diving. They can hold their breath for between 8 and 20 minutes, and can dive to depths of between 450 and 900 feet. Sea lions may spend multiple days at sea.

Once a sea lion becomes sexually mature, at around age four or five, they are able to breed. Female sea lions are called cows, while males are called bulls. They usually establish breeding territories from May through July. Cows congregate in closely packed, medium to large groups. Bulls defend territories and fast during the breeding season. Males compete for dominance, leaving the younger males without a chance to mate for the season. One distinct characteristic of a full-grown breeding male is the presence of a sagittal crest, a raised forehead that appears at about 10 years of age. The dominant male will mate with an average of 16 females in one season.

Pups tend to be born in mid-June. Each mother usually gives birth to a single pup. The pup nurses from the mother for about 6 - 12 months. Sea lion milk contains about 35% fat so the pups grow rapidly. Pups begin feeding on fish along with the mother's milk after about two months. Between nursings the mother returns to the sea and feeds for several days, leaving her pup on the mainland.

California sea lions eat a variety of types of fish, including herring, anchovies, salmon, and rockfish. California sea lions may also eat species such as squid and octopus. Although California sea lions have 34-38 teeth, they do not use their teeth for chewing fish. Instead, the sea lions use their teeth to grasp and tear their food. The California sea lions at Dolphin Research Center typically receive three meals a day, and these meals may include different types of fish. Herring usually has large amounts of fat and protein, and is a very high-calorie fish. This type of fish can be compared to the “meat and potatoes” in your diet. Another fish the sea lions eat is capelin. Capelin is more like the “salad” in your diet—it contains a lot of water, and not as much protein or fat. In addition to these two types, other kinds of fish are incorporated into the sea lions' diets on a rotating basis to provide the animals with variety. These other types may include smelt, silversides, sardines, and squid.





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Staff members at Dolphin Research Center closely monitor Kilo and Loki's diets to make sure their nutritional needs are met. Sometimes it helps to put the information into graphs to make it easier to interpret. Examine the table below. The table shows the average number of pounds per day that Kilo and Loki eat during a given month. It is very important to note that the diets of the sea lions do vary quite a bit, even from day to day, but these numbers give you an idea of the sea lion diets throughout the year.

Month	Avg. Kilograms of Fish Eaten by Kilo per Day	Avg. Kilograms of Fish Eaten by Loki per Day
January	5.4	9.1
February	5.0	8.6
March	4.5	7.3
April	3.6	6.8
May	3.2	4.5
June	1.4	2.3
July	0.9	1.8
August	1.8	2.7
September	3.6	4.5
October	4.5	7.3
November	5.0	8.2
December	5.0	9.1

1. On a piece of graph paper, produce a double line graph utilizing the information in the table above. Make sure your graph includes the proper labels, as well as a title and a key.
2. What trend(s) in both Loki and Kilo's diets do you notice over the course of the year?

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3. Based on the information in the introduction, how would you explain the trend(s) you observed?

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4. What is the main difference between the diets of Loki and Kilo?

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5. Based on the information in the introduction, how would you explain these differences?

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