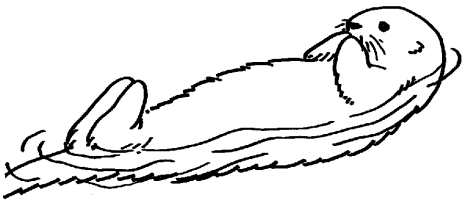
Grade

5-7



You Otter Be What You Eat

Find out how sea otters to keep their warm-blooded bodies warm by eating huge quantities of food.

THE following activity allows students to use their math skills to interpret a sea otter menu by using percentages and ratios based on real scientific data. The themes of this activity also include predator-prey relationships and adaptations in extreme environments.

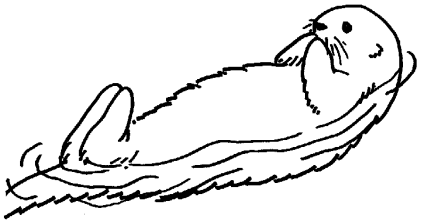
Steps

MATERIALS

- Worksheets
- Pencils or Pens

1) Discuss with your students how sea otters stay warm by eating huge quantities of food each day instead of packing on layers of blubber as other marine mammals do.

2) Handout the worksheets for your students to complete.



You Otter Be What You Eat!

Sea otters eat continuously to keep their warm-blooded bodies heated in cool waters. Individual sea otters usually specialize in eating two-to-four different kinds of prey based on what their parents taught them to hunt, what foods are available in their habitat, and their tastes.

This is what a seven-year-old female sea otter named Kiana (KEY-anna) ate on three consecutive days at the Vancouver Aquarium.

Name:	Date:

FOOD	WEDNESDAY	THURSDAY	FRIDAY
Squid (kg)	0.75	0.30	0.70
Clam (kg)	4.0	3.7	3.8
Cod (kg)	2.0	1.5	0.8

Answer the Questions Below

1. Calculate how many calories Kiana ate each day. Squid has 381 calories per 100 grams, clam 82, and cod 78.

2. Sea otter eat approximately one quarter of their body weight each day. Kiana weight 29.3 Kilograms on Wednesday. What percentage of her body weight did she eat each day (assuming she remained the same weight)?

Now, think about blue whales. Each day, a blue whale eats four tonnes of shrimp-like animals called krill to obtain three million calories!

vancouver aquarium™

ANSWER SHEET
YOU OTTER BE WHAT YOU EAT

1. Calculate how many calories Kiana eats each day. Squid has 381 calories per 100 grams, clam 82, and cod 78.

Wednesday

squid	0.75 kg x 1000 g = 750 g x 3.81 g/cal = 2857.5 cal
clam	4.0 kg x 1000 g = 4,000 g x .82 g/cal = 3280 cal
cod	2.0 kg x 1000 g = 2,000 g x .78 g/cal = 1560 cal

TOTAL = 7,697.5 cal

Thursday

squid	0.3 kg x 1000 g = 300 g x 3.81 g/cal = 1143 cal
clam	3.7 kg x 1000 g = 3,700 g x .82 g/cal = 3034 cal
cod	1.5 kg x 1000 g = 1,500 g x .78 g/cal = 1170 cal

TOTAL = 5,347 cal

Friday

squid .	0.7 kg x 1000 g = 700 g x 3.81 g/cal = 2667 cal
clam	3.8 kg x 1000 g = 3,800 g x .82 g/cal = 3116 cal
cod	0.8 kg x 1000 g = 800 g x .78 g/cal = 624 cal

TOTAL = 6,407 cal

2 . Sea otters eat approximately one quarter of their body weight each day. Kiana weighed 29.3 kg on Wednesday. What percentage of her body weight did she eat each day (assuming she remained the same weight)?

Wednesday 0.75 kg + 4.0 kg + 2.0 kg = 6.75 kg / 29.3 kg x 100 = 23%

Thursday 0.3 kg + 3.7 kg + 1.5 kg = 5.5 kg / 29.3 kg x 100 = 19%

Friday 0.70 kg + 3.8 kg + 0.8 kg = 5.3 kg / 29.3 kg x 100 = 18%