Lesson 8: How much do manatees need to eat?

Objective: Students use math skills to calculate manatee feeding needs

You will need:
- scissors for each student
- A copy of “Manatee feeding time” activity page (page 8-4) and worksheet (page 8-5) for each student
- Tape or glue

Strategy:

1. Remind students that manatees have to eat a lot of food every day. Generally, manatees will eat one tenth (1/10) of their body weight every day in plants. So, a manatee that weighs 1000 pounds will have to eat 100 pounds of food a day.
2. Have students complete “Manatee feeding time” activity (Sea World). Explain to students that they are going to pretend to be manatee biologists at Sea World. It will be their job to make sure that each manatee gets its share of food. They will be feeding the manatees romaine lettuce, cabbage, carrots and grapes.
   a. Students are to cut out all of the boxes on the sheet (manatees and food items)
   b. Students should count how many of each item they have and enter those numbers on their worksheet.
   c. Students need to give an equal amount of each food item to each manatee.
   d. Students should then create equations to show how they distributed the food and write these on the worksheet.

Standard addressed: MA.3.A.1.1

This activity is available online at http://stjohns.ifas.ufl.edu/sea/manatees.html
Manatee Feeding Time

OBJECTIVE

The student will explore how numbers are put together and taken apart. He or she will experiment with division, connecting what they know to symbolic representations.

ACTION

1. Discuss manatees and what they eat. In this exercise, students will pretend they are animal care specialists at SeaWorld who are responsible for caring for and feeding the manatees.

2. Distribute Manatee Feeding Time cut-out on page 7. Explain to pre-readers that their job is to distribute the food to the manatees. They must decide how much of each kind of food each manatee gets for this feeding. Each manatee eats the same amount of food: romaine lettuce, cabbage, carrots, and grapes.

3. Students use scissors to cut apart food items and tape or glue them to the bottom of the manatee drawings.

4. When finished, discuss the exercise with students. Ask them to explain how they decided how many of each food item to give each manatee.

5. (For grades 2-3) Students write number sentences that describe how they divided the food.

ANSWERS

Students should suggest the following number sentences:

- $45 \div 5 = 9$ (romaine lettuce)
- $15 \div 5 = 3$ (cabbage)
- $10 \div 5 = 2$ (grapes)
- $5 \div 5 = 1$ (carrots)
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BACKGROUND INFORMATION
Manatees are large, herbivorous marine mammals that live in fresh water, sea water, and brackish water. In the wild, they eat a wide variety of aquatic and shoreline plants.

The manatees at SeaWorld eat romaine, greenleaf, and iceberg lettuce; spinach; and cabbage. The immense mammals devour nearly 227 kg of greens every day. For special treats, they nibble grapes, carrots, apples, and sweet potatoes.

MATERIALS
For each student:
- copies of Manatee Feeding Time cut-out, page 7 (if needed, you can enlarge copies)
- scissors
- tape or glue
- pencils and paper

In the wild, manatees eat a variety of aquatic and shoreline plants. At SeaWorld (above), manatees eat lots of romaine lettuce and other healthy vegetables.
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Worksheet for “Manatee Feeding Time” Activity.

Before you start distributing the food to the manatees, you should take “inventory.” This means you need to count how much of each type of food you have.

1. How many romaine lettuce pieces did you start with? _____________
2. How many cabbage pieces did you start with? _____________
3. How many grapes did you start with? ____________
4. How many carrots did you start with? ____________
5. How many manatees do you have to feed? _____________

Once you have “fed” the manatees, write an equation for each food type to show how the food was distributed. For example, if you had had 20 water hyacinths to give to 4 manatees, each manatee would get 5 hyacinths. An equation for this could be

\[ 20 \div 4 = 5 \]

Write an equation for each food type:

Romaine

Cabbage

Grapes

Carrots