

# Katie's Kennel

## Summary

In this task, students will have an opportunity to use their knowledge of variables and expressions to solve real-world problems related to a dog care business.

## Main Core Tie

Mathematics Grade 6

[Strand: EXPRESSIONS AND EQUATIONS \(6.EE\) Standard 6.EE.7](#)

## Time Frame

1 class periods of 60 minutes each

## Group Size

Small Groups

## Life Skills

Thinking & Reasoning, Communication, Employability

## Materials

Task Sheet  
Fractions strips/bars

## Background for Teachers

- [6th Grade Expressions and Equations Standard 6 Curriculum Guide](#)
- [6th Grade Expressions and Equations Standard 7 Curriculum Guide](#)

## Student Prior Knowledge

To successfully work with this task, students need to be fluent with the use of variables and expressions and understand how they apply to known and unknown quantities in a real-world problem.

## Intended Learning Outcomes

Students will work in small groups and use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 2. Students will work in small groups to solve real-world and mathematical problems related to a dog care business. They will be able to write and solve equations of the form  $x + p = q$  and  $px = q$  for cases in which  $p$ ,  $q$  and  $x$  are all nonnegative rational numbers.

## Strategies for Diverse Learners

The following questions will help you identify the needs of your students:

- What do you know about a pound?
- What do you remember about fractions?
- What do you know about  $\frac{1}{2}$ ?
- Explain your thinking?
- How do you represent an unknown?

What are the unknowns?  
What is your next step going to be?  
How will you organized your information?  
How did you get to your answer?  
Show me your thoughts as an expression with a variable?  
How else could we look at this problem?  
Is there any other way to get to the same conclusion?  
How will you represent the pound?  
How will you represent the amount of food for each dog?  
Let's focus on just one of the dogs.

### Extensions

If a hungry Labrador comes on Wednesday and eats five times as much as the Yorkie, how much food will you need for the rest of the week?

If a 20-pound bag of Tasty Yum-Yum dog food costs \$16 including tax, what would you charge per dog? Explain why? How much will it cost to feed the original three dogs per day/week? How much does it cost to feed each dog per day/week?

### Bibliography

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. "Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks." *Mathematics Teaching in the Middle School* 14 (October 2008): 132-138.

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