

Bottle of Beans

This lesson on the importance of spaying and neutering was developed by Beverly Armstrong and Charlotte Moore of Kids and Critters, 518 Lorraine Avenue, Santa Barbara, CA 93110.

Character concept:

Responsible people consider the consequences of their actions and take care of those who depend on them.

Objective:

Students will demonstrate an understanding that pet overpopulation is a major problem and that spaying and neutering are a key to solving it.

Curriculum connection:

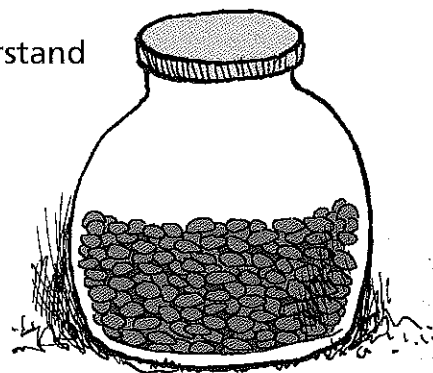
Students will expand their number sense using estimation techniques. They will compute and perform simple multiplication of fractions and apply these procedures to solving problems. (math)

National standards addressed:

math (compute fluently and make reasonable estimates, understand fractions as part of unit wholes, NM-NUM.3-5.1, 3)

Materials:

- large, glass jar
- bag or bowl
- measuring cup
- 1-2 bags of dried beans, all the same variety
- blank slips of paper



Activity:

Students will guess how many puppies and kittens theoretically can be produced from two unspayed/unneutered cats and two unspayed/unneutered dogs in just five years. They will check their guesses against an estimate of the number of beans measured from a jar (1,600), a figure that represents the number of offspring that could result over a five-year period.

Procedure:

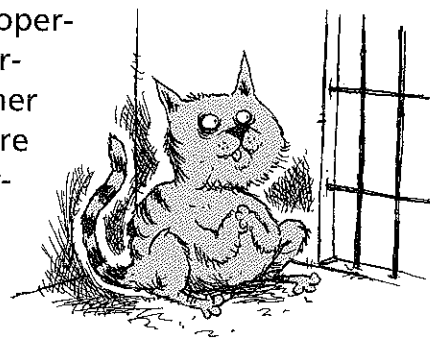


Prepare in advance: Ask two volunteers to count 1,600 beans and put them in a jar. Volunteers should not reveal this number to the rest of the class.

If you prefer, prepare the jar of beans yourself. Count how many beans it takes to fill $\frac{1}{4}$ cup; then measure out the number of quarter-cupfuls it would take to add up to approximately 1,600 beans. Pour that amount into a jar.

1. Briefly introduce the problem of pet overpopulation. Tell students that each year, animal shelters take in 6–8 million lost and unwanted cats and dogs. A major factor in the number

of unwanted pets is people's failure to anticipate and deal properly with pets' behavior problems. For example, 96% of dogs surrendered to shelters never received obedience training. Another major factor in the number of unwanted pets is people's failure to have their animals spayed or neutered. Spaying and neutering are operations, done by a veterinarian, that prevent pets from having babies. About half of all the pets taken to animal shelters are not spayed or neutered.



2. Pass out blank slips of paper to each student.

3. Choose two volunteers to come to the front of the room.

4. Hold up the bottle of beans in one hand. Tell the class that it represents the number of cats and dogs that could result in just five years from two dogs and two cats (male and female) who were never spayed or neutered.

This would be the potential number of kittens and puppies born to five generations of unspayed female dogs and ten generations of unspayed female cats. It is a conservative estimate, because dogs and cats can have more than one litter in a year. According to The HSUS, in six years, one female dog and her offspring theoretically could produce 67,000 puppies; in seven years, one female cat and her offspring theoretically could produce 420,000 kittens.

5. Hold up the measuring cup in the other hand. Ask, "Using this measuring cup, how can we estimate the number of beans in this bottle?"

Guide students in understanding that they can use the cup to scoop out a measured amount of beans—say, $\frac{1}{4}$ cup. After counting how many beans are in $\frac{1}{4}$ cup, they can pour out the rest of the beans, $\frac{1}{4}$ cup at a time, and count how many $\frac{1}{4}$ cupfuls are in the jar. They would multiply that amount by the number of beans in $\frac{1}{4}$ cup to arrive at an estimate of the total number of beans in the jar.

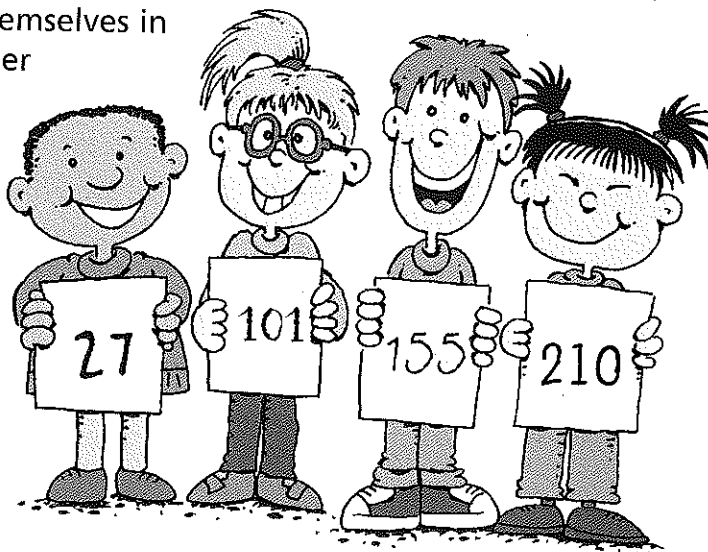
Have your two volunteers do this. As they are counting quarter-cupfuls of beans, they may empty their measuring cup into a bag or bowl.

6. As the volunteers are pouring and counting, have the remainder of the class guess the number of beans in the bottle. Students should write their guesses on blank slips of paper.

7. Instruct students to stand and arrange themselves in order from lowest number to highest number guessed.

8. Ask volunteers to reveal their estimate. How close did it come to the actual number of beans in the jar—1,600? How close did students come to guessing the number? Which student guessed closest?

9. Ask, "With so many homeless animals in shelters waiting to be adopted, would it be possible to find good homes for all the dogs and cats represented by this bottle of beans? What should people do to keep that



number down?" Guide your class in understanding that spaying/neutering is the responsible answer.

Extension:

Invite an area veterinarian or animal care and control professional to visit your classroom. He or she can explain the importance of spaying and neutering and answer students' questions about the procedures.

Helpful Resource

Lead your class on a madcap visit to the vet's. Log on to www.kindclubhouse.org and click the dancing dog (Turnips' Travels). Students can take turns creating silly stories by clicking through a list of nouns and adjectives. A blast to read aloud—and a fun way of teaching pet care and parts of speech.

