

PET OVERPOPULATION
LESSON 3: Grades 4-6
DOGS AND CATS CAN'T ADD AND SUBTRACT,
BUT THEY SURE CAN MULTIPLY!!

Show Me Standards: Academic Goals: 1.4, 1.6, 1.8, 1.10, 2.1, 2.2, 2.3, 3.1, 3.2, 3.5, 3.6, 3.7, 4.1, 4.3 & 4.7; Communication Arts: 1, 4 & 6; Mathematics: 1 & 3; Science: 4 & 8

Objective: To help students understand that there is a very serious pet overpopulation problem with dogs and cats, why that problem exists and how it can be solved.

Materials:

- Chalkboard or large paper on an easel
- Chalk or markers
- Calculator

Method: The teacher will review spay and neuter facts with students. Recall the fact that nearly 5000 animals are born every HOUR in the United States. If every family adopted just one dog or one cat, there would still be too many. There simply are not enough caring homes available for all the dogs and cats that are being born.

Have students calculate how many kittens can be produced by one unspayed female cat. To do this ask one student to go to the chalkboard and draw a cat with the year (2002) next to the cat. Create a scenario ("This is my beautiful cat, Princess. She is black and white and we love her dearly.") Princess is not spayed, so in the spring of 2002 she has a litter of kittens. In this litter she has two surviving female kittens. Also, in the fall of 2002, Princess has a litter of kittens with two surviving females. (The reality is that Princess can have more than two litters a year, and certainly can have more than two surviving females from each litter, but for the sake of simplicity, we will work with these lower numbers.)

Next to the year 2002, write the number 4---to demonstrate how many female kittens Princess brought into the world during this year.

Now, pretend it is the year 2003. Princess is only two-years-old. She has not been spayed, so she has a litter of kittens in the spring of 2003 and the fall of 2003. Again, two surviving female kittens from each litter, so Princess is again responsible for bringing four more kittens into the world. BUT....in 2003, her female kittens from 2002 are old enough to have kittens. EACH 2002 kitten has a litter in the spring of 2003 and a litter in the fall of 2003, (using the same premise as Princess, they will each have two surviving females per litter---and remember, in reality the numbers can be much higher. Remind students that we are trying to keep it simple for tabulation purposes.) SO, according to our framework, each 2002 kitten (remember there were four) now has produced four kittens of their own. Next to the year 2003, add the kittens. (Four for Princess, four for EACH of her spring kittens and four for EACH of her fall kittens.)

It is now 2004. Princess is only three-years-old and very capable of reproducing. She has a litter in the spring and a litter in the fall, with two surviving females in each litter. Princess has produced four more female kittens in 2004. BUT---her 2002 kittens have each had a litter in the spring and a litter in the fall---along with their 2003 kittens and Princess' 2003 kittens!!!! Get the idea? Now is the time to consult the calculators and begin the math.

If we were to block off Princess and her female geometric offspring for a ten-year period, how many kittens could be brought into this world by ONE unspayed female? (Remind students that this number in reality is very low. The truth is Princess can truly have more than four surviving female kittens in a year's time---and we haven't even calculated the male kittens which are causing females to get pregnant as well.

Well, according to the above calculations, Princess will produce 40 kittens in a 10-year period. But her kittens' kittens will cause a population explosion. Have students try to calculate the number using calculators and working in small groups. After a period of time, have them explain their findings to the class.

The answer: If left to reproduce at the above rate, one unspayed female cat can be responsible for indirectly causing the births of more than *9,765,625 female cats!!! This demonstrates the absolute necessity of spaying and neutering.

The very simple surgical procedure of spaying and neutering is the only solution to the pet overpopulation problem in all communities.

Remind students: Spaying is a term that applies to female dogs and cats. It is a surgical procedure (operation) performed completely under anesthesia (a medicine that makes animals go to sleep for a very short period), so the dog or cat feels no pain at all. A small incision (cut) is made in the abdomen (stomach area) and the female reproductive organs are removed. They wake up and after one day feel fine. The only difference is that they no longer can have puppies or kittens. They are actually healthier and live longer because of spaying.

Neutering is a term that refers to male dogs and cats. It, too, is done under anesthetic so the animal feels no pain. A small incision is made and the testicles are removed. Without the testicles, a male dog or cat cannot cause a female dog or cat to have puppies or kittens. One day after the surgery, the animal is fine and lives a longer healthier life because of the simple act of neutering.

For discussion: Which of the above scenarios is more humane? The offspring of Princess will necessitate finding over 86,000,000 homes for all of the kittens. Remember, this is only ONE female cat. Is this possible? Do you see a lot of homeless cats and kittens in your community? Is the act of spaying and neutering kinder for the animal? Why?

Call To Action: Pet overpopulation is a serious problem that affects us all—whether we own a pet or not. Our response to its presence in our communities helps to define us as people. Encourage students to create a poster that depicts this problem. Distribute these posters throughout the community...in grocery stores, post offices, community buildings, other schools...spreading the message of responsible pet ownership and the importance of spaying or neutering. Have students presents this message to other classrooms and at the next PTA or Home/School meeting for adults to hear.

Attention Teacher: See the following activity sheets “Dogs can’t Add...” and “Multipli-cat-ion”.

Web sites: For recommended animal-related web sites visit www.apamo.org and choose “Animal Issues” from the left-side menu, then choose “Links” from the top of the page. Or [click here](#) to launch your browser and link directly to the list.

**Example:*

	<u>Total atStart of Year</u>	<u>New Kittens Born</u>	<u>Total at End of Year</u>
2002	1 (<i>x4 kittens=</i>)	4	= 5
2003	5 (<i>x4 kittens ea.=</i>)	20	= 25
2004	25 (<i>x4 kittens ea.=</i>)	100	= 125 etc., etc.

Dogs can't Add, Cat's can't Subtract, But they sure can **MULTIPLY!**

An unspayed female dog, her mate and all of their puppies, if none are ever neutered or spayed, add up to:



1 year:	16
2 years:	128
3 years:	512
4 years:	2,048
5 years:	12,288
6 years:	67,000 dogs!!!!

There aren't enough good homes for all of these dogs.
Be a responsible pet owner.

Spay or neuter your pet!

Teacher's box: After students have worked the math problems below, call on several of them to read the sentences aloud. Use this lesson to encourage empathy and respect for companion animals.

Name _____

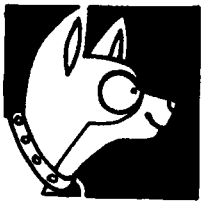
Multipli-cat-ion

What would your life be like if you were a cat instead of a kid? In some ways, it would be just the same. You'd still need a good home with

people who love you and take care of you. But in other ways, things would change a lot. Want to know more? Do the math!

1. Your heart would beat as many as _____ (70×2) times a minute—twice as fast as it does now. According to Richard Torregrossa, author of *Fun Facts About Cats*, you'd be "love on _____ ($12 \div 3$) legs."

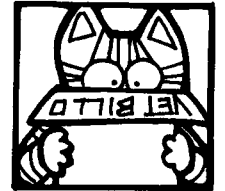
2. About _____ (4×4) hours of your day would be spent sleeping. (And you'd appreciate a warm, cozy bed, like the rest of your family.) Of course, you'd be wide awake most of the night.



3. Your night vision would be _____ ($36 \div 6$) times sharper than it is now.

4. Your doctor bills would be about _____ (10×8) bucks a year.

5. You wouldn't have to turn your head to hear someone calling you. You'd just move your ears in the direction of the voice. Sneaking up on you would be tricky, because you could hear footsteps from more than _____ (40×5) feet away.

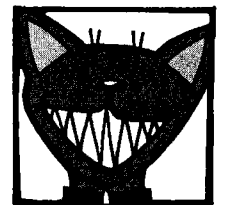


6. You'd spend at least _____ ($21 \div 7$) hours a day keeping yourself neat and clean. Forget the soap and washcloth; all you'd need is your tongue and some spit.

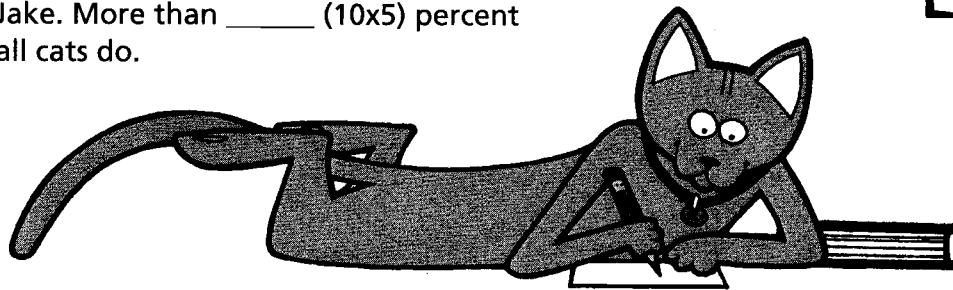
7. If you were kept safe indoors, you could live to be _____ (5×3) years old or more. You wouldn't celebrate birthdays with a cake, but that's okay. You'd like your cat treats better anyway.

8. The people you lived with would probably risk their lives to save you. In a recent survey, _____ ($51 + 32$) out of 100 pet owners said they would.

9. You would have the same number of teeth as grownup people do: _____ (8×4).



10. There's a good chance you'd have a human name, like Samantha or Jake. More than _____ (10×5) percent of all cats do.



Let's say you woke up this morning to the usual sights and sounds in your home. Except overnight you turned into a cat!
On the back, write a short story about a day in your life.