



INTRODUCTION TO DECIMAL DALMATIAN'S OUTER SPACE ADVENTURE



Decimal Dalmatian is no ordinary canine. This powerful pooch came from the planet Lamiced to help students learn about the power of decimals, and he can use his magical medallion to do incredible things. He can instantly change an ice cube's temperature from 30.1° to 301° or change a wrestler's weight from 350 lbs to .350 lbs!

The following short story chronicles one of Decimal Dalmatian's exciting adventures in outer space. The story is divided into three two page sections. Each section is followed by ten questions pertaining to that part of the story. Some questions test reading comprehension while others are designed to make the reader think about decimals.

The story was originally written for use in a third grade classroom, but it has been revised for use in higher grades. When the story was first presented to third graders, it was read to them out loud while they read along. The questions were also read out loud, and possible answers were discussed as a class.

Before the last part of the story was given to the students, each of them wrote their own version of the story's conclusion. From what they wrote, it was clear that the story had captured their imagination. Hopefully, it also helped convince them that word problems are not something to be feared or avoided. In fact, under the right circumstances, solving word problems can actually be fun!

Please send us an E-mail if you use the story in your classroom, and let us know how your students responded.

Sincerely,

The Mike's Math Club Team

Decimal Dalmatian's Outer Space Adventure



(Part One)



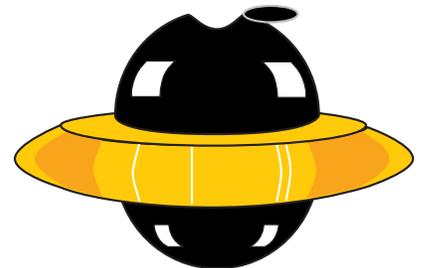
One morning Decimal Dalmatian woke up with a strange craving for comet crunchies. It had been years since he'd even seen a comet crunchy, but for some reason he just could not stop thinking about those tasty little dog biscuits.

"Oh, how I would love even just a crumb of one of the comet crunchies my mother used to make," Decimal Dalmatian thought to himself. "I wonder if I could get her recipe from my spaceship's computer?"

With that thought in his mind, Decimal Dalmatian started his journey. It took the incredible canine only minutes to fly from Muskratville, Minnesota to Wolf's Tooth (the California ghost town where his spaceship was hidden). He carefully scanned the deserted streets of Wolf's Tooth to make sure no one was around. Then, he flew into Bald Butch's Barber Shop.

The barber shop was old and covered with dust—no one had been inside for years. It was a perfect hiding place for a small intergalactic vehicle. A tiny .04 inch wide passage beneath one of the big barber chairs lead to the spaceship that brought Decimal Dalmatian to Earth from Lamiced, his home planet. Decimal Dalmatian used his awesome strength to push the chair aside. Then, he used the decimal powers of his magical medallion to increase the diameter of the passage until it was 40 inches wide, big enough for him to fly through.

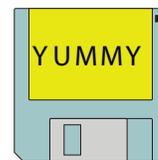
When he reached the spaceship, Decimal Dalmatian barked out a secret password that caused a round door to open on top of the small flying saucer. He was struck by a powerful decimal ray that made him shrink to .005 times his normal size before he entered the ship. The shrinking ray was used to let the inhabitants of Lamiced take long voyages in a vehicle that would otherwise be too small and cramped. It was also used as a weapon to shrink anything that threatened them during their space travels.



Once inside the ship, Decimal Dalmatian rushed to the computer and started searching for the comet crunchy recipe. He searched for it under "Recipes" but found nothing. He searched for it under "Comet" but it wasn't there either. He searched for it under "Crunchies" and still had no luck.

“What could that recipe be filed under?” he wondered.

He searched for it under several other file names unsuccessfully. Then, he opened a little file called “Yummy” and there it was! “I should have known that a recipe for something as yummy as comet crunchies would be in this file!” the clever canine said to himself. “Now, let’s see what the ingredients are.”



The recipe was full of stuff that the average dog would just love. Beef jerky, an old leather shoe, soup bones, and a slice of cheese pizza were all part of the recipe—those things would be easy to get. However, to make comet crunchies you also need two moon rocks, martian mud, and ice crystals from a comet!

“I’ll have to take my spaceship to get some of these things,” Decimal Dalmatian realized. “I better prepare to blast off!”

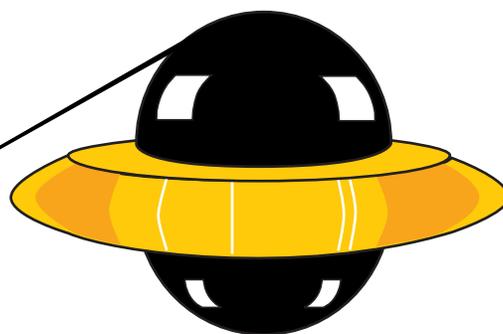
The dynamic dog barked an order to his computer and was instantly transported to the spaceship’s control room. He sat down in the captain’s chair and seatbelts automatically fastened themselves around him. He could feel the ship’s engines begin to rumble as a countdown sounded over the ship’s speakers.

“Five, four, three, two, one...” the computer counted backwards, and in the last second before liftoff, a decimal ray shrank the entire spaceship so it could fly through the passage leading to the barber shop and the world beyond.

“First stop: the moon,” Decimal Dalmatian barked to the computer, and the spaceship instantly zoomed up into the sunny sky.

END PART ONE

I can't wait to munch on some comet crunchies!



Decimal Dalmatian's Outer Space Adventure

(Part One Question Sheet)



- 1) In what state is Decimal Dalmatian's spaceship hidden?
- 2) Did it take Decimal Dalmatian more or less than an hour to fly to Wolf's Tooth?
- 3) Decimal Dalmatian used his magical medallion to increase the diameter of the passage leading to his spaceship. What is a diameter?
- 4) The diameter of the passage was increased from .04 of an inch to 40 inches. How many times larger is 40 inches than .04 of an inch?
- 5) The decimal ray inside the spaceship shrank Decimal Dalmatian to what portion of his normal size?
- 6) What was the name of the computer file that contained the recipe for comet crunchies?
- 7) Name five of the ingredients used to make comet crunchies.
- 8) How many moon rocks are needed to make comet crunchies?
- 9) Before blast off, a countdown sounded over the ship's speakers. Why do you think it is called a "countdown"?
- 10) Why did the flying saucer shrink itself with the decimal ray?

Decimal Dalmatian's Outer Space Adventure



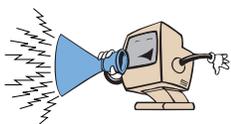
(Part Two)

A huge cloud of dust rose into the dark lunar sky when the small flying saucer from Lamiced landed on the moon. Decimal Dalmatian waited for the dust to settle before he left the spaceship. Soon, he was searching for two good moon rocks to use in making a batch of comet crunchies.

“How can I tell whether a moon rock is good for cooking or not?” Decimal Dalmatian wondered. “My mother used to say something about their shape... Oh, I remember now: She always said the rounder a moon rock is on the outside, the more lunar flavor it has on the inside!”

With that thought, Decimal Dalmatian picked out two big round moon rocks and headed back to his spaceship. He was already dreaming about the wonderful aroma of fresh comet crunchies cooking in the oven.

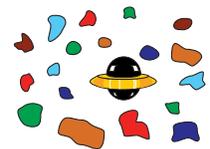
Decimal Dalmatian went straight to his spaceship's control room. He told the computer that their next destination was Mars, and in the blink of an eye the spaceship was streaking through the thin lunar atmosphere. It took only a few moments for the ship to escape the moon's gravitational field and hurtle into outer space.



The little spaceship was more than halfway to Mars when the computer started shouting through the loud speakers. “Warning! Warning! We are rapidly approaching a dense asteroid belt!”

This emergency called for a quick response. Decimal Dalmatian barked out a command and was instantly transported to his battle station. He could see thousands of giant hunks of rock hurtling between his ship and Mars. Any of those huge rocks could seriously damage the spaceship.

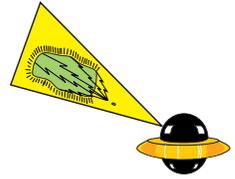
There was only one thing to do—“prepare to fire the decimal cannon!” Decimal Dalmatian ordered the computer.



The little spaceship slowed down to match the speed at which the asteroids were traveling (about 28,000 miles per hour). The computer scanned the belt of giant rocks to find a safe path to travel through, but it found none. Then, a giant boulder flying faster than the others rocketed right at Decimal Dalmatian's ship!

Decimal Dalmatian aimed the cannon right at the giant boulder and fired. Just like magic, the huge hunk of rock shrunk to the size of a pebble. The cannon

had reduced it to only .000001 of its original mass and size! The shrunken asteroid bounced harmlessly off of the spaceship, and Decimal Dalmatian let out a sigh of relief—that was a close call.



The little ship made it to Mars without much more trouble. The only problem Decimal Dalmatian faced was what to do about the rumbling in his empty stomach; he'd forgotten to pack a lunch for himself!

"I'm so hungry I could eat an elephant!" Decimal Dalmatian thought as he flew over the surface of Mars looking for a good patch of mud. He flew over the canals of Mars, the broad martian plains, and the martian polar ice caps, but he didn't see a drop of mud. Finally, Decimal Dalmatian decided that looking for mud was a waste of his time. After all, he could make his own martian mud!

The spaceship landed in the middle of a vast martian plain. Decimal Dalmatian jumped out and began filling a bag with red martian soil. Soon he was ready for step two of his plan, so he took the bag back to his spaceship and blasted off.

Minutes later, the ship was hovering over a martian icefield. Decimal Dalmatian flew out of the spaceship holding an extra large bucket in his mouth. He landed on the field of ice and thought, "Wow, I could make the biggest outdoor hockey rink in the universe right here!" He looked around at the beautiful wintery landscape, and then his grumbling stomach reminded him that there was work to do. He used the decimal powers of his magical medallion to raise

the temperature of the ice in front of him from .012° fahrenheit to 120°. In no time at all, there was a big pool of steaming hot water in the middle of the ice. Decimal Dalmatian filled his bucket with water and flew back to his little spaceship.



"Martian dirt, plus martian water, equals martian mud!" Decimal Dalmatian told himself. He mixed up enough of the stuff to use in making his special doggie treats, and then he gave the ship's computer another command. "Take me to the nearest comet, and hurry; my stomach is growling so much I feel like growling too—grrrrrr..."



Decimal Dalmatian started preparing the ingredients for the comet crunchies as his little spaceship flew towards the nearest comet. He ground the moon rocks to dust and stirred the sandy powder into the martian mud. Then, he chopped up several pounds of beef jerky and one old leather shoe. Into the pot these ingredients went. "Hmmm... I still need some soup bones and a slice of cheese pizza," Decimal Dalmatian thought as he examined the recipe again. "I'll return to Earth for those final yummy ingredients after I get some ice crystals from a comet," he decided, and his little spaceship traveled on through the velvety darkness of outer space.

END PART TWO

Decimal Dalmatian's Outer Space Adventure

(Part Two Question Sheet)



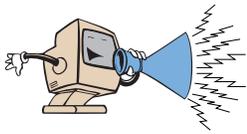
- 1) What shape moon rocks have the most lunar flavor?
- 2) Why did the computer start shouting through the loud speakers?
- 3) About how fast were the asteroids traveling?
- 4) The decimal cannon reduced a big asteroid to what portion of its original size and mass?
- 5) What is meant by the asteroid's "mass"?
- 6) In outer space, even an elephant is weightless. On Earth, is there some relationship between mass and weight?
- 7) When Decimal Dalmatian landed on Mars, what did he put in his bag?
- 8) Decimal Dalmatian raised the temperature of the martian ice to 120° . What does " $^{\circ}$ " mean?
- 9) To change the temperature of the ice from $.012^{\circ}$ to 120° , the decimal point had to be moved how many decimal places?
- 10) What did Decimal Dalmatian do with the two moon rocks before stirring them into the martian mud?

Decimal Dalmatian's Outer Space Adventure



(Part Three)

"Noah-Leon 5 (a class 1 comet) is now within viewing range," the computer informed Decimal Dalmatian.

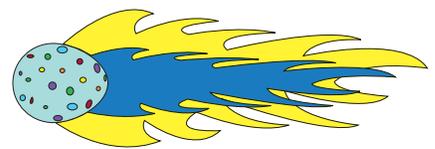


"It's about time!" he replied. He was really grumpy because he was so hungry. His stomach growled louder than a wild grizzly bear with a giant thorn stuck in its paw.

"Show me the comet!" Decimal Dalmatian commanded, and the computer immediately produced a three-dimensional holographic image of the comet. "There sure are lots of ice crystals on that thing," the hungry hound muttered. "This should be easy."

The little spaceship from Lamiced was soon in position next to the comet. It was traveling through space at the same speed as the big ball of cosmic debris: 162,000 miles per hour!

Decimal Dalmatian was already collecting ice crystals from the surface of the frigid orb when the solar winds suddenly whipped up, igniting the enormous tail of the comet! It was beautiful; it looked like a yellow and blue flame stretching for thousands of miles. Decimal Dalmatian stopped collecting ice crystals to admire the view, and as he did, a fog bank of solar-charged particles slowly wrapped itself around the comet. The fog grew thicker and thicker until it was almost impossible to see through!



Decimal Dalmatian used his magical medallion as a search light and finished collecting the ice crystals. "I better get back to my spaceship before this fog gets even worse," the dynamic dog thought out loud. He took the big bag of ice and flew back to his trusty little flying saucer. Soon he would be adding the final ingredients to his comet crunchy batter.

The return trip to Earth couldn't have been fast enough for Decimal Dalmatian. He was so hungry that he started chewing on the big wooden spoon he used to stir the comet crunchy batter. "Now all I need is some soup bones and a slice of pizza to complete the recipe," he grumbled. "Maybe I'll get an extra slice of pizza to eat while my doggy delicacies are cooking," he thought. "Yeah, a slice of pizza would really hit my spots."



As the spaceship entered Earth's atmosphere, Decimal Dalmatian told the computer that he wanted to stop in New York.



"New York? Why do you want to go to New York?" the computer asked.

"I won't have any trouble finding soup bones there, and everyone knows that New York has the best pizza," he explained to the computer. "Besides, some of my best friends live in New York!"



It took only a few minutes for the powerful little spaceship to reach "The Big Apple" and for Decimal Dalmatian to gather the soup bones and pizza required to complete his recipe. "I can't wait until we reach Wolf's Tooth," howled the hungry dog. "I have to make my comet crunchies now!"

So, the computer heated up the spaceship's atomic oven while Decimal Dalmatian poured the special batter into big bone shaped baking pans. When the oven reached 795°, Decimal Dalmatian loaded it with batter filled pans.



Within ten minutes, the aroma of freshly baked comet crunchies drifted down from the little flying saucer and spread through the streets of New York. All over the city, dogs woke up with a strange craving for the unearthly treats they smelled in the cool morning air.

It was amazing; hundreds of dogs began barking and howling at the same time! They all wanted a sample of the special treats Decimal Dalmatian had just finished baking, and they were in luck. Decimal Dalmatian had been taught to share when he was just a puppy, so he couldn't refuse the pleading cries of his fellow canines.



As soon as the comet crunchies were cool enough to eat, Decimal Dalmatian loaded them into a huge sack. Moments later, he was flying through the sky carrying the sack of goodies over his shoulder like Santa Claus.

On that day, hundreds of dogs in New York City got their first taste of comet crunchies, but Decimal Dalmatian had none. By the time he finished giving out free samples, there was nothing left!

"Oh well," he said to himself, "I can always whip up another batch tomorrow."



THE END

Decimal Dalmatian's Outer Space Adventure

(Part Three Question Sheet)



- 1) What is the name of the comet Decimal Dalmatian visited?
- 2) How fast was the comet traveling?
- 3) How can you find out how far the comet travels in one minute?
- 4) How far does the comet travel in one second?
- 5) What ignited the tail of the comet?
- 6) When Decimal Dalmatian returned to Earth, what city did he go to?
- 7) What kind of oven does Decimal Dalmatian's spaceship have?
- 8) At what temperature were the comet crunchies baked?
- 9) What happened when the aroma of the freshly baked comet crunchies spread through the streets of the city?
- 10) How many comet crunchies did Decimal Dalmatian eat?