



Science

Name: ()

Class:

Date: / /

The Scientific Method – The Tale of the Other Dog

Read through the story of *the Tale of the Other Dog* and then answer the questions that follow.

The Tale of the Other Dog

Tang Ham Ma loved to tinker, trying to improve things, even paper clips and mousetraps. On his birthday his wife gave him a puppy, so he set out to make a better dog food. Pretty soon he came up with a mixture of special vitamins he was proud of, and he began feeding it to his puppy.

After a year Ham Ma was very pleased with the way the puppy had grown, and he showed his friends pictures of the dog. “That’s nothing,” one friend said. “What did the dog look like before you started giving it the special food?”

So Ham Ma produced pictures of the dog when it was a tiny puppy. By comparing the pictures, you could see that the puppy had indeed grown. “That’s still nothing,” the friend countered. “All puppies grow.”

Undaunted, Ham Ma set out to raise another puppy on his special food. Fortunately, it happened that his son had brought home a collie puppy just days before. Ham Ma went to the pound and brought home a second dog, a small mutt. Thus began his second experiment.

To prove that his dog food was better than standard dog food, Ham Ma added his special vitamin mixture to some commercial dog food and labelled it **A**. Then he labelled a second variety of dog food **B** and did not add his special mixture. His son’s collie received food **A** and the mutt received food **B**.

After a year of this, he brought the dogs to the company picnic and proudly displayed them both. The collie had grown nearly twice the size of the mutt. “You think you made some pretty good dog food, huh?” said Ham Ma’s rival at work, Johnny Lau. “You can’t say nothing about how good your special food is. Collies always grow more than little mutts.” Devi was sceptical too, “You never fed them the same stuff, Ham Ma. You have to feed them both the same stuff to prove anything.”

Ham Ma realized he had made two mistakes this time. And he vowed that the third time his conclusions would be so compelling that no one could doubt them.

So Ham Ma went back to work. He invested some of his savings in twin male beagles, identical puppies from the same litter. He restricted the puppies to a standard dry dog meal, and let

them drink only the water from his garden hose. He called them Dog **A** and Dog **B**. Dog **A** got Ham Ma’s special vitamin mixture with its dog meal, and Dog **B** did not.

That year’s picnic was quite a success. Ham Ma brought his dogs and a scale. From the dogs’ identical collars hung brass letters of identical mass, saying “Dog **A**” and “Dog **B**.” He even had brought the two bags of dog food, identical except for the addition of his vitamins to bag **A**.

“Hey, you have quite a thing going here,” admitted Johnny Lau, smiling and petting Dog **A**. “Dog **A** sure did grow,” said Devi. “But poor little Dog **B**. If you don’t want it, I’ll take it home.”

Dog **A** weighed a full two kilograms more than its brother, Dog **B**, after only one year – and there wasn’t a bit of extra fat beneath its glossy coat. Dog **B** was as delightful and sweet as Dog **A**, and its coat was shiny, but it was not any bit heavier than the average beagle.

Ham Ma had learned from his experiences, and he videoed the two beagles from the day that he bought them. When his boss, Mdm. Chan Chen Fen, called him in to congratulate him on his successful dog food work, Ham Ma showed her the video of the two dogs growing-up and she loved it.

One month later, Ham Ma had business cards identifying him as *Tang Ham Ma, Senior Canine Dietician*, and a six figure contract to market his special mix of vitamins worldwide.

Questions

1. What traits characterise a good scientist? How did Ham Ma demonstrate these traits?

Note: Refer to the *16 Habits of Mind* for guidance.

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2. What was wrong with Ham Ma’s first dog food experiment?

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3. What two mistakes did Ham Ma make in his second dog food experiment?

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4. What was Ham Ma’s hypothesis?

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5. What were Ham Ma’s independent and dependent variables?

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6. What was Ham Ma's controlled experiment, and what did he control in it?

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7. What is a control and why is it important in a scientific experiment?

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8. What kind of record(s) did Ham Ma keep? What other records could / should Ham Ma have kept? Why?

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9. From the information given in the story, could you repeat Ham Ma's experiment? Why is it important to reproduce experimental results in science?

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10. What other experiment(s) could you do to test Ham Ma's conclusion about the effect of his dog vitamins?

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- Scan the QR code given below to view the answers to this assignment.



http://www.nygh.sg/nature_of_science/worksheets/12_the_other_dog_ans.pdf