Name: _____ Date: _____

The Squeaky Gate

Reading level 9 (5th grade) · 1188 words

Hana. The gate on our street squeaks, but only on cold mornings, at twenty to seven, when the whole street is empty. The sound is a long, thin, scraping eeeeek that goes right through the wall. It woke Jun, and nothing wakes Jun. Our rule is that you write things down before you start guessing, so I opened my notebook.

Jun. I was already guessing. I said it was rust, because rust makes everything squeak. But Hana pointed out that rust would squeak on warm days too, and she was right, which is annoying. So we made a list of the things we could test: oil, wax and water. Then we borrowed a thermometer from Mr. Alvarez next door, who handed it over with a very plain face and no advice.

Hana. Here is the first page of the notebook, in my neatest handwriting. Mon, 34 degrees, squeak. Tue, 31 degrees, squeak. Wed, 52 degrees, quiet. Thu, 36 degrees, squeak. Fri, 55 degrees, quiet. That is a pattern, but a pattern is not an answer. So I wrote the question, Does cold cause the squeak?, underlined it twice, and put a box around it.

Jun. I went to look at the hinge itself, which is a metal pin that sits inside a metal tube, with the gate swinging on the pin. Hana drew it and labeled the parts: pin, tube, and leaf, which is the flat piece bolted to the post. There was a dry, flaky brown ring around the pin where something used to be greasy. I said the squeak must come from the old grease running out. Hana said that was only a guess.

Hana. Test one was water, because Jun wanted to find out whether the hinge was just thirsty. He poured half a cup of it on the pin, and the gate swung without a sound, and he looked extremely pleased with himself. Ten minutes later it squeaked again. By the next morning it squeaked louder than ever, and there was an orange smear on the post. I wrote, Water: worse.

Jun. I thought about it through a whole bowl of cereal. Water is not slippery in the way that matters. It only washed away the last of the old grease, and then it left the bare metal wet, which is exactly what rust wants. So the squeak came back with a friend. Hana said that was a good thought, but that we had only done one test, so I should be careful about being proud.

Hana. Test two was cooking oil. Jun put three drops on the pin and swung the gate fifty times, and it stayed quiet for the whole afternoon, so we both said, Fixed. But the next morning was 33 degrees, and at twenty to seven we heard the squeak again, softer this time but still unmistakable. I wrote down, in a neat column, that oil had helped but had not fixed it.

Jun. Then I had an idea, and for once it was a good one. I put a spoonful of cooking oil in the

refrigerator, and an hour later I tipped the spoon over a saucer. The oil moved like honey, in a slow, fat drip. It does not like the cold, I said. Hana said that in the cold it could not slide into the tiny gaps between the metal parts, and that sliding into gaps is the whole job of oil.

Hana. I went to the library and looked it up, and it took me one whole afternoon. Cold makes oil thicker, so it flows slowly between the metal parts, and then the metal rubs. Cold also shrinks metal a tiny bit, but I could not find out how much that matters for our hinge, so I wrote down, Not known.

Hana, still. The squeak itself is simpler. It comes from friction, the drag between two rubbing surfaces. The metal grabs and slips hundreds of times a second, and the shaking is the sound, the same way a chalk can squeal on a board. Oil makes the grab smaller, and wax does too, which is why Jun's next idea was a good one.

Jun. For test three, I borrowed the stub of a birthday candle. Wax is not a liquid, so I figured it should not get thick when the weather turns cold. I rubbed it all over the pin and inside the tube until the metal looked cloudy, and then I swung the gate, and it was silent. After that all we could do was wait for a cold morning, which is a strange kind of experiment.

Hana. For five cold mornings in a row, at 33, 30, 35, 28 and 32 degrees, I stood at the window in my pajamas with the notebook. The squeak count was zero every time, and the wax had clearly worked. But on the sixth morning, at 6:41, I looked out and saw the gate hanging open the width of my hand, without a sound. Somebody had gone through it.

Jun. Hana wrote, Who opens the gate at twenty to seven on cold days only? I said the wind, but the wind does not lift a latch. So that evening I sprinkled flour on the ground in front of the gate, in a thin white layer, the way detectives do in books. It was not very scientific, but it was cheap and easy, and it was a way to find out.

Hana. The next morning there were prints in the flour, small and round, with four toes and no claws. They went through the gate, along the fence, and around the corner of our house, and I followed them in my slippers. They stopped at the warm air vent from our dryer. On the vent, with her eyes shut and her paws tucked under, lay a gray cat.

Jun. It was Mustard, who belongs to Mr. Alvarez, and on warm days she stays on his porch, because she does not need a vent. On cold days she lets herself in through our gate, because she can lift the latch with her head, and before the wax, the old squeaking gate was how she announced herself. Mr. Alvarez leaned over the fence in his bathrobe, holding a coffee.

Hana. "I wondered where she went," he said, and he asked what we had put on the hinge. He wanted to try it on his own back door. Jun showed him how, and now the gate is silent, and Mustard still visits the vent every cold morning at twenty to seven. We leave the flour out. We like to count her toes, and the answer, so far, is always four.

Hana's notebook, last page. Day 14, 31 degrees. The gate is silent, the latch is open, and the flour shows four toes and no claws. Explanation, part one: the hinge squeaks when cold thickens the oil and the metal grabs. Part two: Mustard opens the gate on cold days because our dryer vent is warm. Both are true. Still to test: does Mustard like wax? Jun says no, and I will check.

Questions

1. When did the gate squeak?

A. Every afternoon
B. Only on cold mornings
C. Only when it rained

2. What happened when Jun poured water on the hinge?

A. It stopped squeaking forever
B. The gate fell off
C. It squeaked louder the next day and made rust

3. Why did the cooking oil not fully fix the squeak on cold mornings?

A. It dried up in an hour
B. Cold made it thick, so it could not slide well
C. Mustard licked it off

4. What does the word latch mean in this story?

A. A thick kind of oil
B. A gate catch that holds it shut
C. A paw print

5. Why did the flour help the twins?

A. It stopped the squeak
B. It showed paw prints
C. It warmed the hinge

6. Why did Mustard come through the gate on cold days only?

A. The dryer vent was warm
B. She wanted to play with the twins
C. Mr. Alvarez sent her

Words to know

hinge: swinging joint
friction: rubbing drag
thermometer: heat gauge
latch: gate catch

pattern: repeating order

Answer key: The Squeaky Gate

1. B. Only on cold mornings
2. C. It squeaked louder the next day and made rust
3. B. Cold made it thick, so it could not slide well
4. B. A gate catch that holds it shut
5. B. It showed paw prints
6. A. The dryer vent was warm