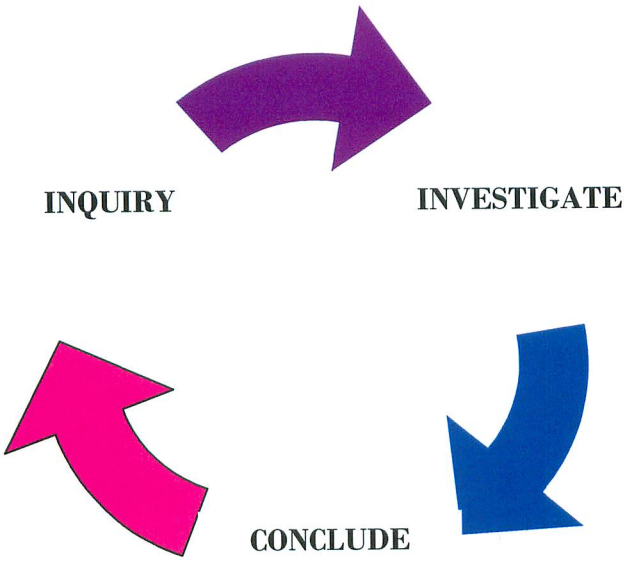
Ashaway School Science Journal

March of 2010
Trimester 2
Volume 2

The Ashaway School Science Journal highlights the observation and investigative work of our school's young scientists.



Ashaway School Teachers

Kindergarten

Kerri Smith
Tricia Koukas

Grade 1

Laurie Gigliotti
Patience Breault

Grade 1and 2 Split

Annie Campbell

Grade 2

Patricia Pearce
Gina Lee

Grade 3

Kim Allen
Lindsay Bliven
Kelly Vocatura

Grade 4

Clare Ornburn
Julie Young

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Edited by Lori Bouchard

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Extended Day Kindergarten

Students read literature about hibernation. They researched animals and discussed why some animals hibernate.

Mrs. Koukas
Extended Day K

Kindergarten

Kindergarten did not have an inquiry kit this trimester. The students did a follow up experiment to *Balls and Ramps*. They had to use a straw and blow several items across the table. Students predicted which object would go the farthest. They had to apply what they learned about characteristics of balls in this investigation. All the students had correct predictions and they were able to state their reasoning.

Mrs. Smith
Kindergarten

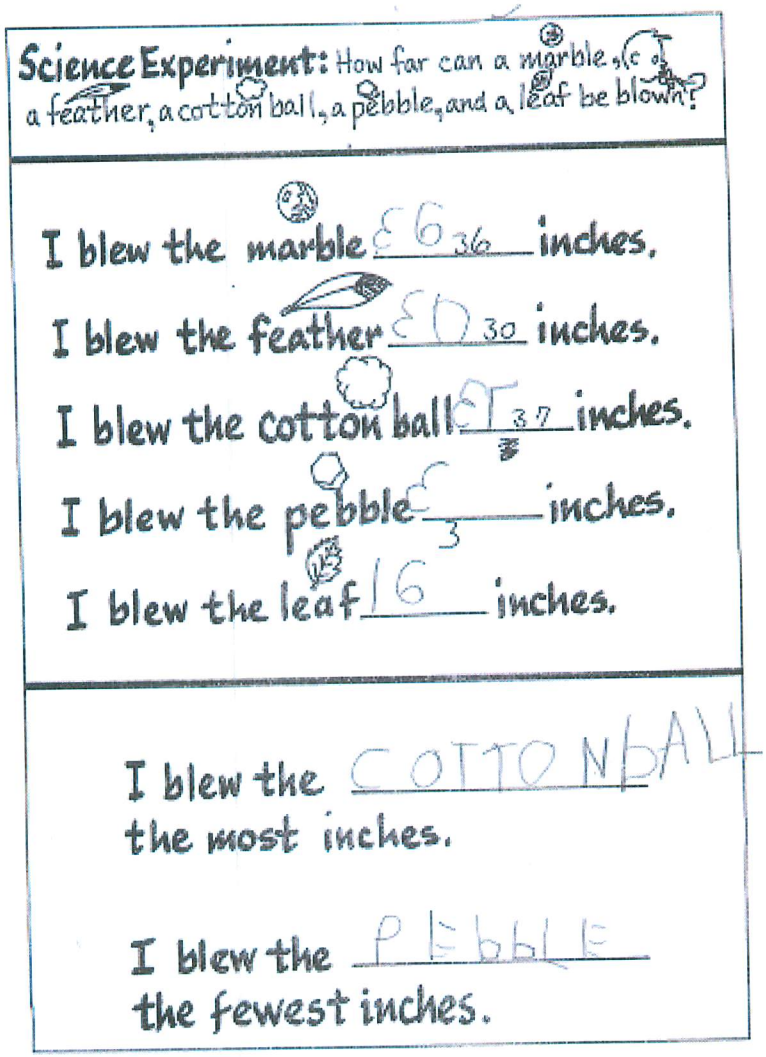
In spring animals come out of hibernation because it is warmer and they can see food

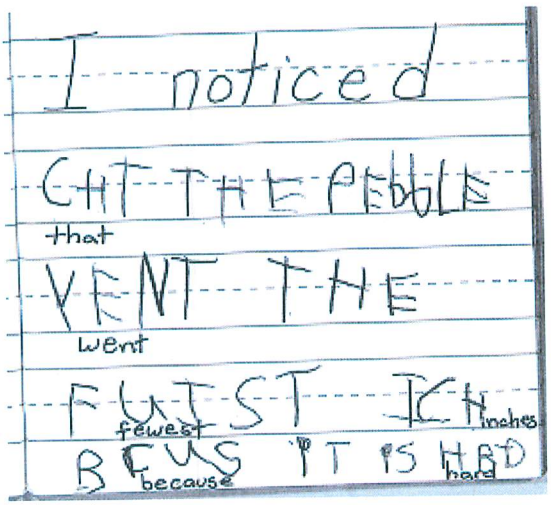
After reading several books about hibernation and researching how different animals hibernate, the children designed a model hibernation home. Upon the arrival of spring we read that animals will come out of hibernation. Based on the information we read, the class brainstormed as to why the animals wake up and what they will do now. As a class we formed and sounded out the words to write a sentence. Using neat penmanship students copied the completed sentence and illustrated accordingly.

Zaiden P.
Kindergarten

The kindergarten students used their prior knowledge about **Balls and Ramps** to predict which item would move the furthest when they blew air at them. The objects were a feather, a cotton ball, a pebble, and a leaf. Students had to write an observation sentence and a "because" sentence.

Curtis P. and Kate S.
Kindergarten





KATE

Science Experiment: How far can a marble, a feather, a cotton ball, a pebble, and a leaf be blown?

I blew the marble 26 inches.

I blew the feather 7 inches.

I blew the cotton ball 18 inches.

I blew the pebble 0 inches.

I blew the leaf 17 inches.

I blew the MARBLE the most inches.

I blew the PEBBLE the fewest inches.

I noticed
the MARBLE
the marble
WENT THE MOST
went the most
INCHES BECAUSE IT
inches because it
IS SMOOTH AND
is smooth and
ROUND
round

Grade 1

Plants

Students care for plants and learn what they need to grow and develop. They observed the structures of flowering plants and described changes that occur ed as plants grew.

Students are expected to:

- Provide for the needs of growing plants
- Observe and describe the changes that occur as plants grow and develop
- Become familiar with the structures and functions of flowering plants (roots, stems, leaf, bud, flower, and seed)
- Discover ways that new plants can develop from mature plants
- Compare changes over time in different kinds of plants
- Organize and communicate observations through journal writing and scientific illustrations
- Acquire the vocabulary associated with the structures of the plant

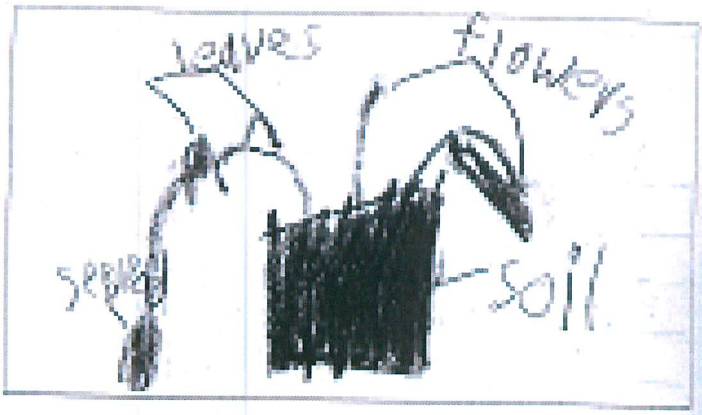
Mrs. Breault
Mrs. Gigliotti

I observed my Brassica plant. I noticed that my plant is 4 inches tall. I also noticed one yellow flower on the stem. There are 13 leaves.

Students were asked to observe a Brassica plant and record observations in writing and draw a scientific illustration.

Collin wrote a detailed sentence describing his plant. He also provided a labeled and accurate scientific illustration.

Collin J.
Grade 1

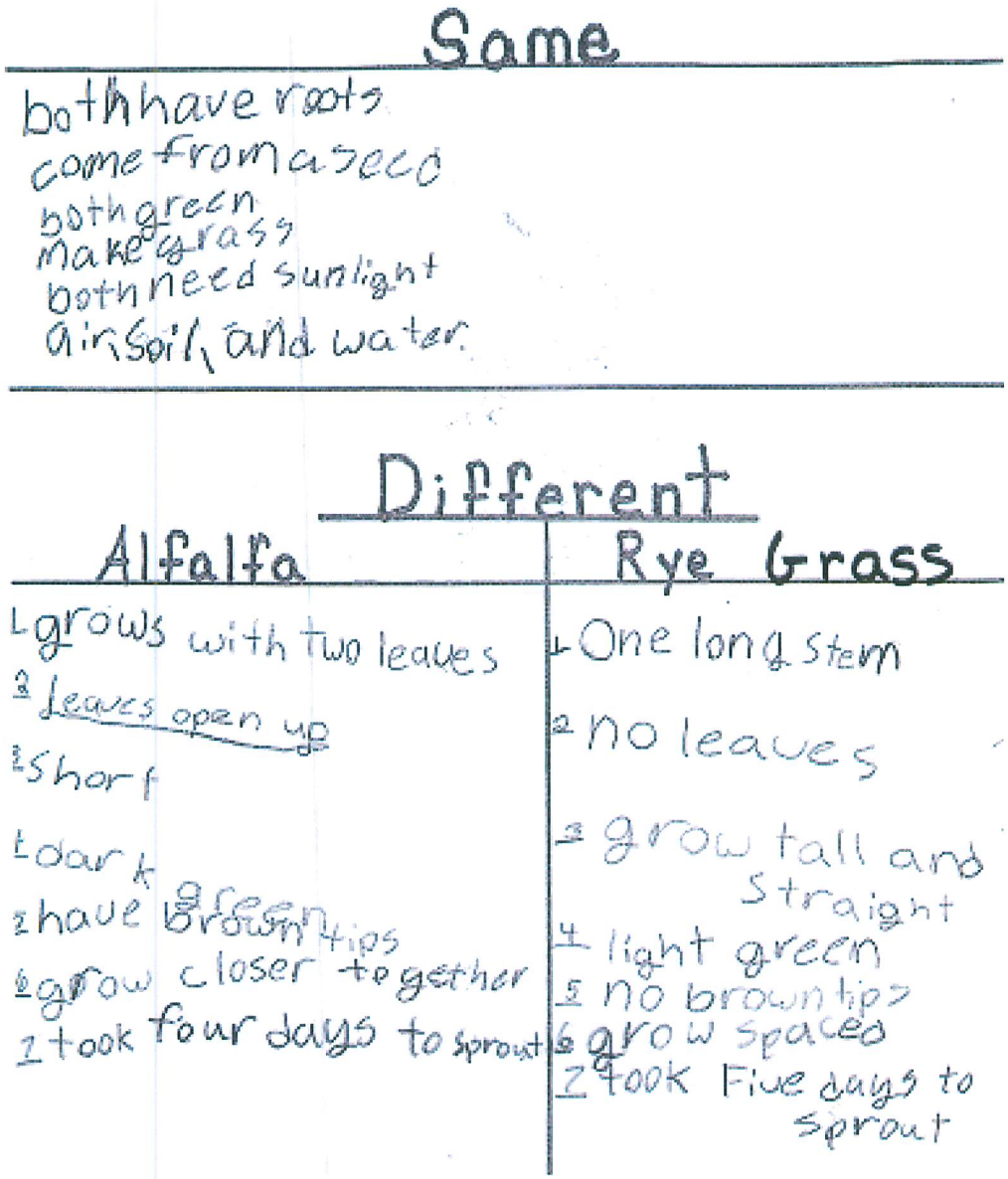


At first my
Brassica plant
was just a seed.
Now my plant
has a seedpod
a flowers buds
and leaves. my
plant is 5 inchs
tall.

Students were asked to recall what their Brassica plant looked like when it was first planted and compare it to what it looked like one week late.

Rhys provides an accurate and detailed scientific illustration of his plant. The illustration also includes labels. He clearly describes what the plant looks like using scientific vocabulary.

Rhys U.
Grade 1

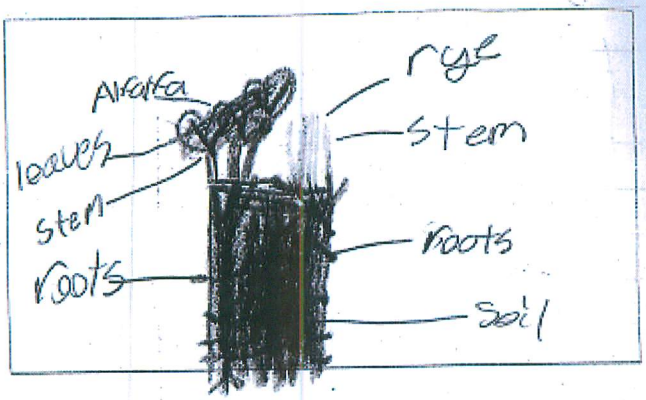


Students used a Box and T-Chart to compare and contrast two different types of plants found in our lawns.

Halina's Box and T-Chart is clearly organized and provides many similarities and differences.

Halina S.
Grade 1

Date: 3-7-11



The Rye and Alfalfa plants are similar because they both are grass and they are green. The alfalfa and rye are different because the Alfalfa is short and The rye is tall an Straight. The rye is dark green. The Alfa

plants are light green. The rye grass has no tips. The Alfalfa plant has brown tips.

Students used the information from the Box and T-Chart to write a "compare and contrast" writing piece.

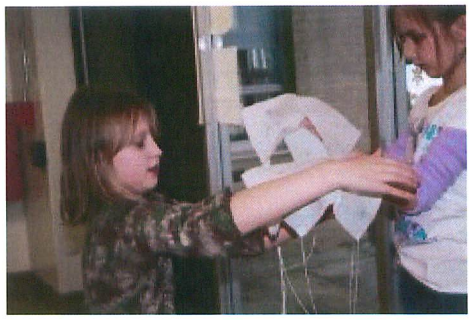
Halina S.
Grade 1

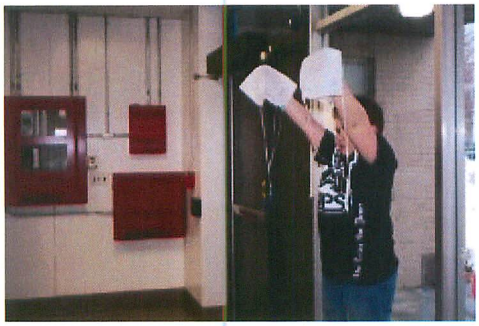
Grade 2

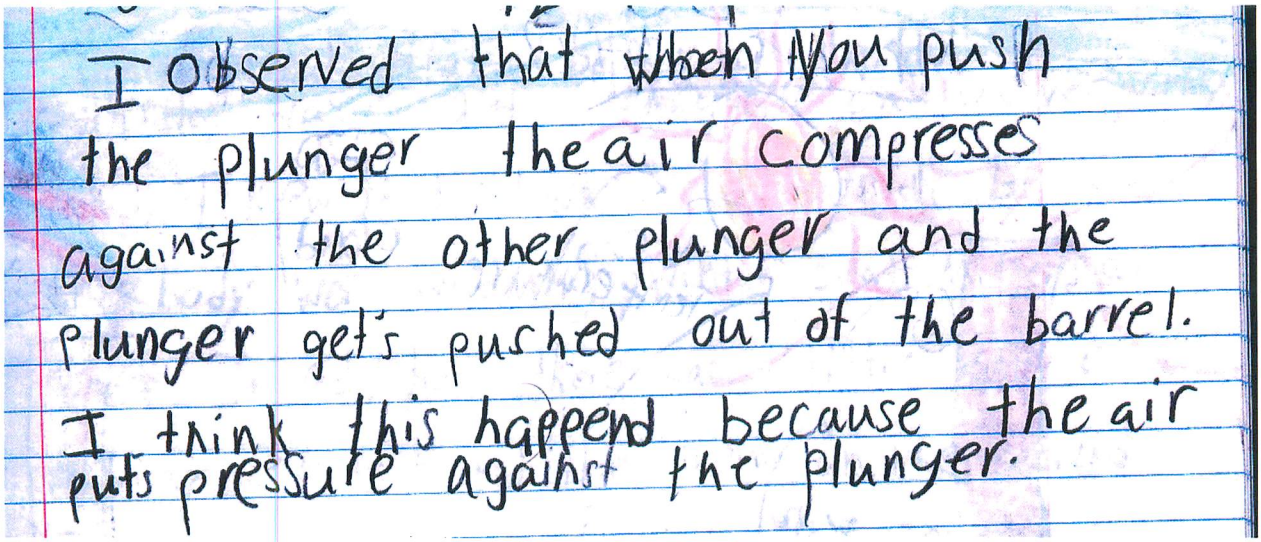
Air and Weather

The second grade students conducted many investigations around the study of air and how it relates to weather. Students observed evidence that air is matter and something real. Second graders noticed how air can be captured, compressed, and move things under pressure. Students applied vocabulary terms like resistance and compression. Observations were documented in their notebooks, using diagrams, graphic organizers, and written paragraphs. Students observed daily weather conditions such as temperature, rainfall, cloud coverage, wind speed, and wind direction. They recorded all data in a class calendar. They compared and contrasted types of clouds and made bar and line graphs.

Mrs. Campbell
Mrs. Lee
Mrs. Pearce







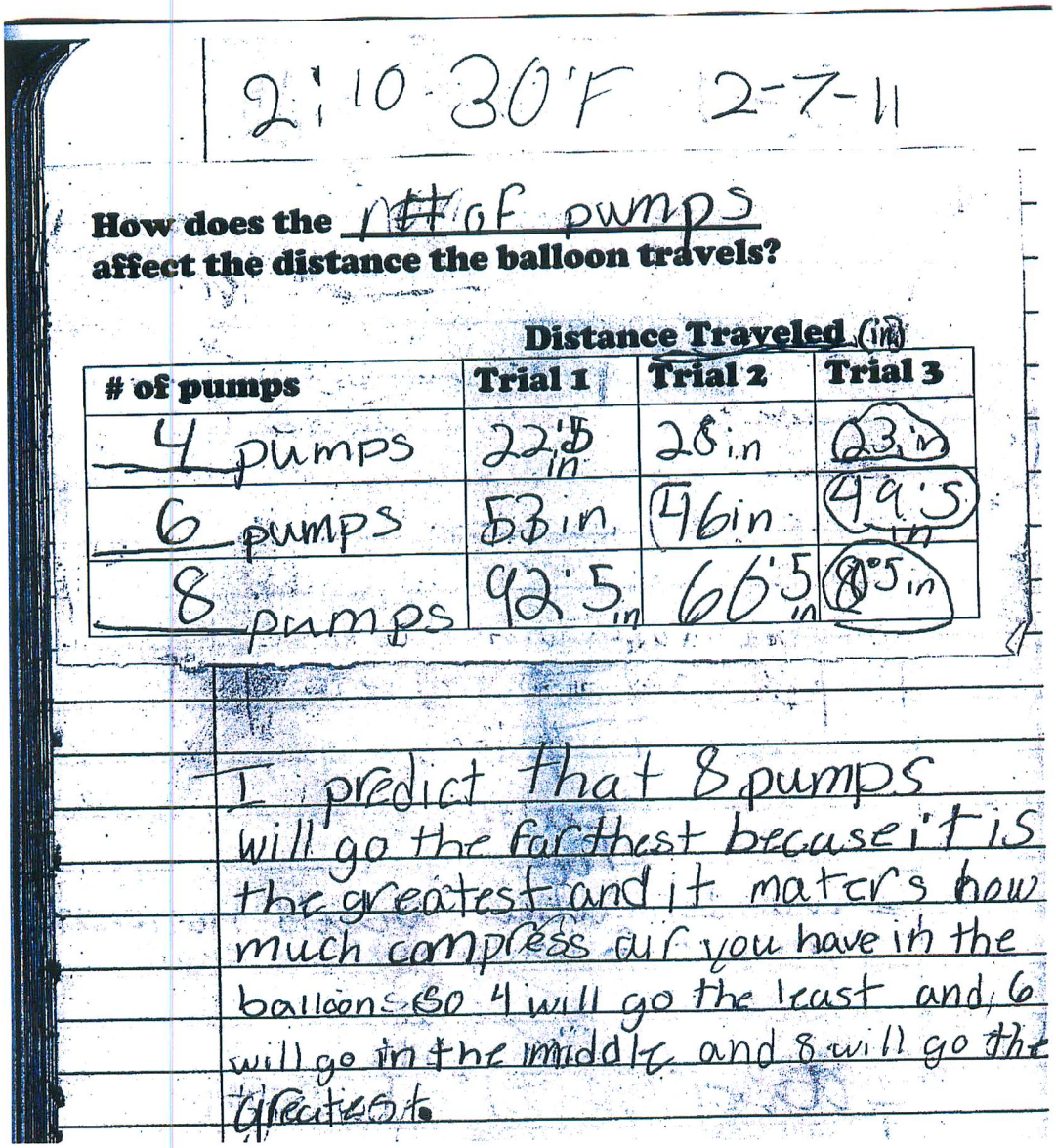
During the properties of air investigation, Rhiannon took a difficult concept and clearly explained the process of pressure against the syringe. She did this after she investigated with her partner many times. The writing was the result of direct investigation on the part of the student. The observational writing frame was used.

Rhiannon W.
Grade 2

Mrs. Lee's Second Grade Class conducted their first "Fair Test" using balloon rockets. We had a group discussion about the different variables we could test. We decided to answer this focus question:

How does the # of pumps affect the distance the balloon travels?

Students chose intervals of 4, 6 and 8 pumps. We made predictions first and then set up our data table. We made sure we used 3 trials and measured the distance in inches. We analyzed the data and wrote a shared conclusion paragraph.



2:10 30°F 2-7-11

How does the # of pumps affect the distance the balloon travels?

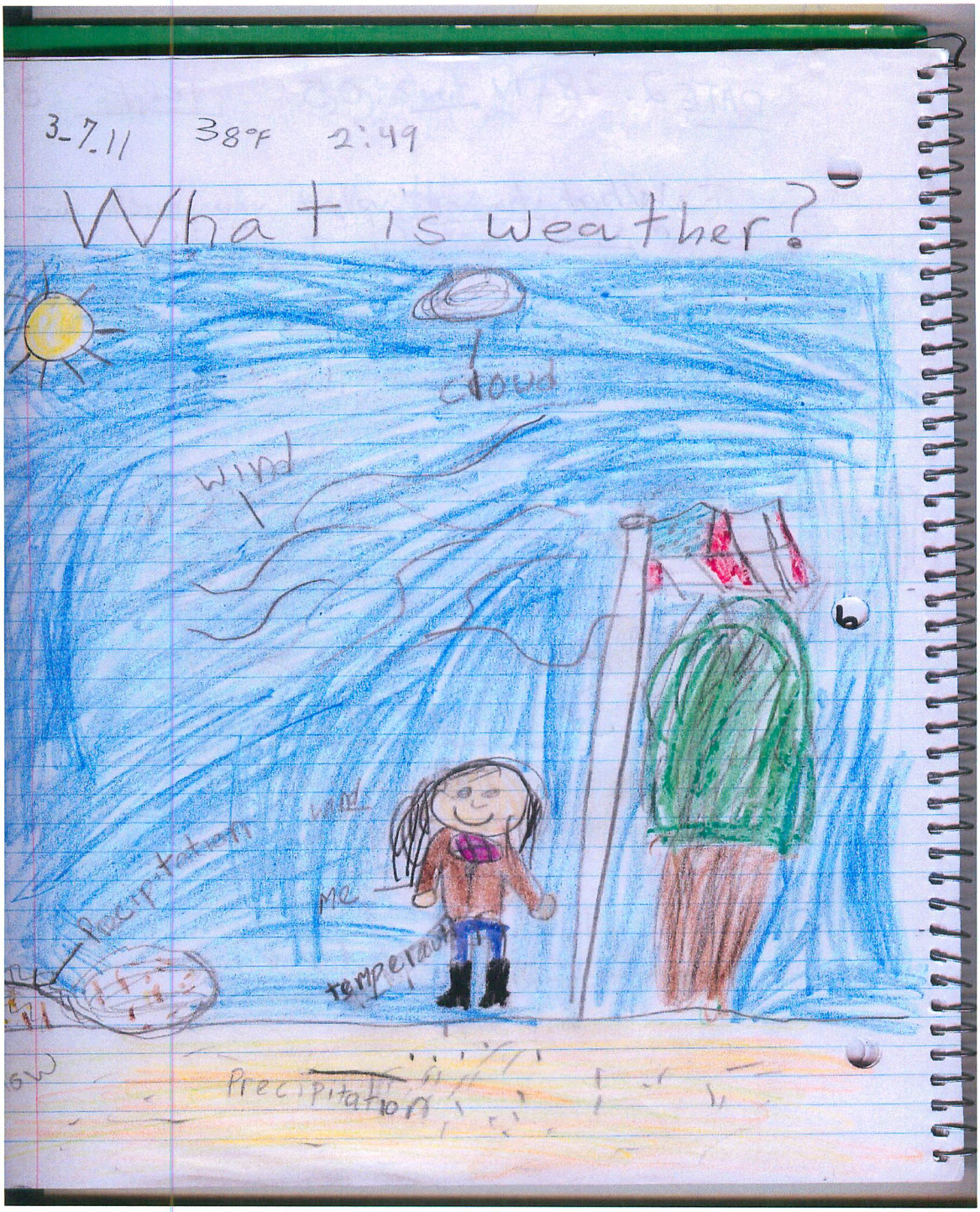
# of pumps	Distance Traveled (in) Trial 1	Trial 2	Trial 3
4 pumps	22.5 in	28 in	23 in
6 pumps	53 in	46 in	49.5 in
8 pumps	92.5 in	66.5 in	80.5 in

I predict that 8 pumps will go the farthest because it is the greatest and it maters how much compress air you have in the balloons. So 4 will go the least and 6 will go in the middle and 8 will go the greatest.

2.19 33°F 2-8-11

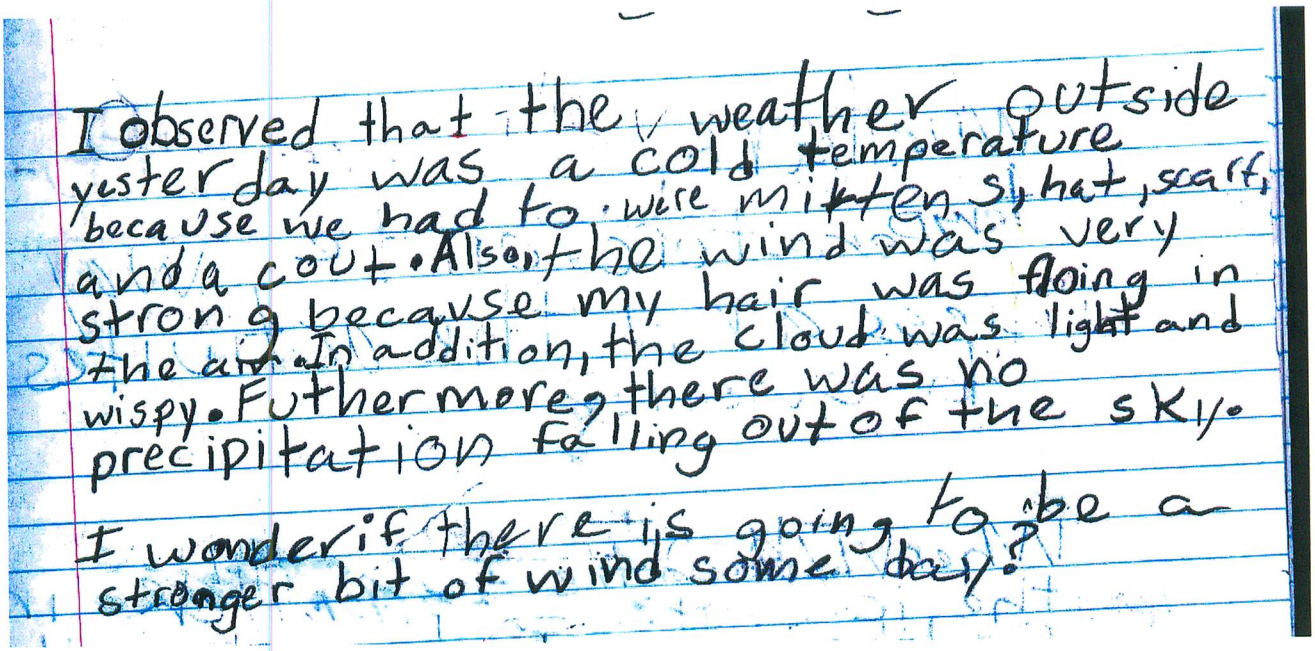
Conclusion

The # of pumps did affect the distance the balloon traveled. The more pumps we put in the balloon the further it traveled. For Example, when I pumped it 4 times it moved 223 inches. When I pumped it 6 times it went 495 inches, whereas the 8 pump pumped balloon went to a total of 80 5 inches. Therefore, this data tells me that the most pumps went the farthest.



Natalie produced this illustration after observing and searching for the conditions that make weather. She's included wind, clouds, precipitation with the snow on the ground and temperature by showing she has her boots and winter coat on.

Natalie B.
Grade 2

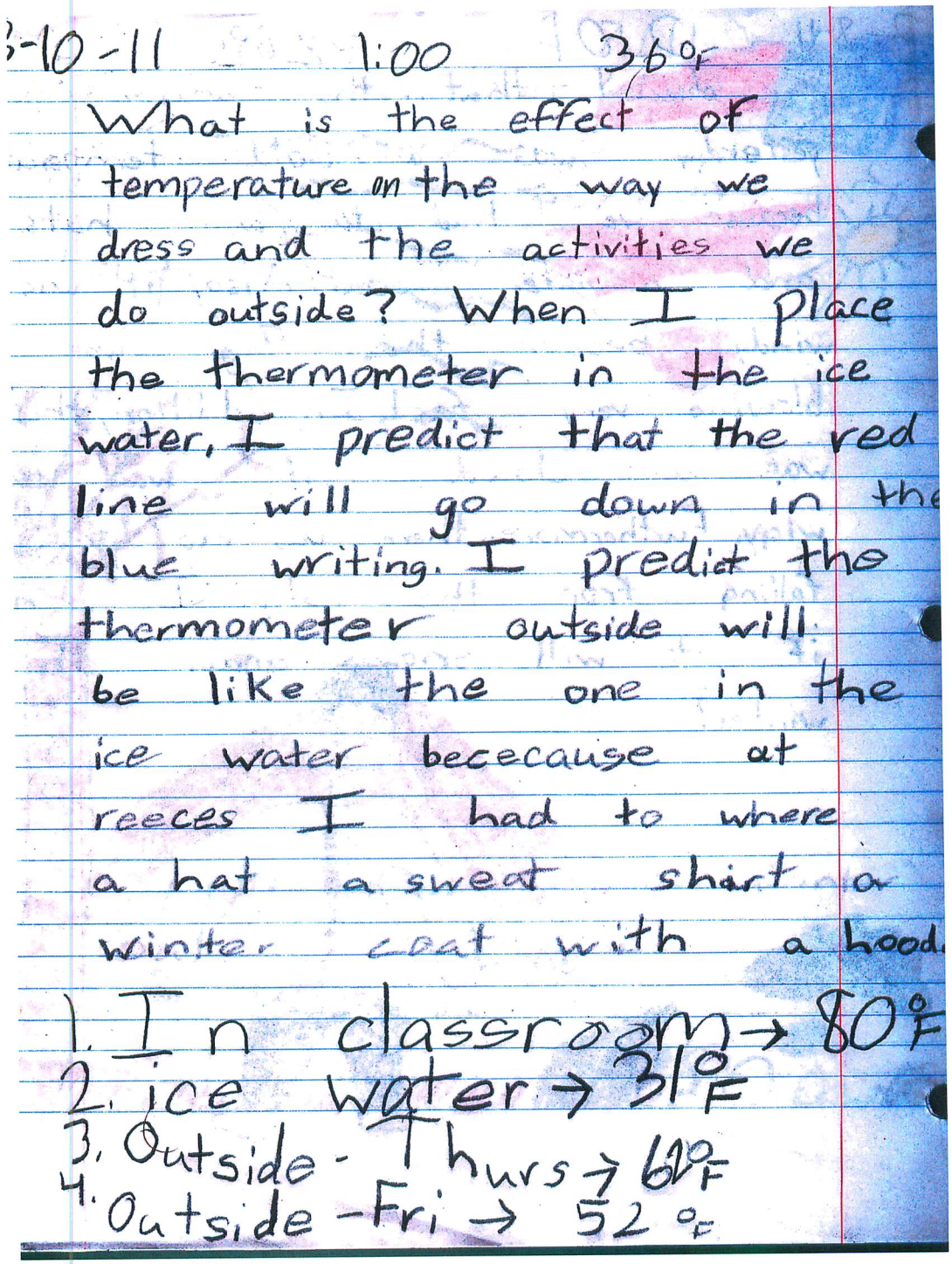

I observed that the weather outside yesterday was a cold temperature because we had to wire mitten, hat, scarf, and a cout. Also, the wind was very strong because my hair was floing in the air. In addition, the cloud was light and wispy. Futhermore, there was no precipitation falling out of the sky.

I wonder if there is going to be a stronger bit of wind some day?

Using the observational frame, Natalie was then able to explain each weather factor and how it was represented in her picture.

While studying the thermometer, Kiley and Shelby were able to change their thinking after making predictions. Both girls made a prediction about the weather outside and then were asked to compare it to the temperature in our classroom and the temperature of ice water. This helped to show them how the thermometer worked, and how to take simple temperature data and use it in their writing. Parts of the data collection frame were used to complete this writing.

Kiley C. and Shelby R.
Grade 2



3-10-11 1:00 36°F

What is the effect of temperature on the way we dress and the activities we do outside? When I place the thermometer in the ice water, I predict that the red line will go down in the blue writing. I predict the thermometer outside will be like the one in the ice water bececause at reeces I had to where a hat a sweat shirt a winter coat with a hood.

1. In classroom → 80°F
2. ice water → 31°F
3. Outside - Thurs → 60°F
4. Outside - Fri → 52°F

3-11-11 1:58 36°F

I observed that the temperature was 80°F in the classroom and 62°F outside. My prediction was incorrect. I thought the thermometer outside would be closer to the ice water. But now I think it was closer to room temperature.

3-11-11 1:58 36°F

I observed that the thermometer in the classroom read 80°F. My prediction was incorrect. At first I thought the temperature would be as low as the temperature in the ice water. But now i think it is the same as the thermometer in the classroom. I think this because my data showed that the temperature in the ice water was 30°F.

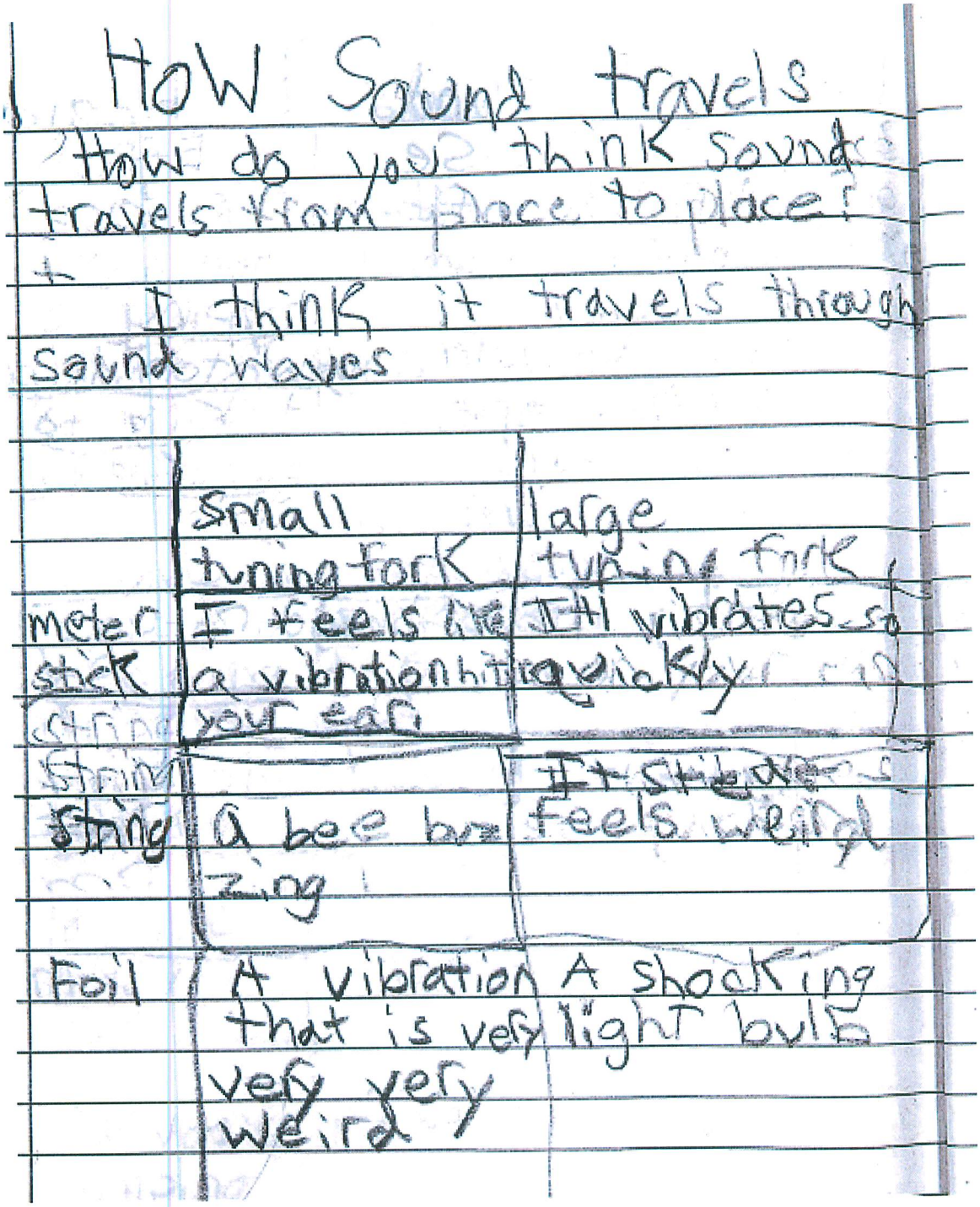
Third Grade

Sound

Ashaway School third graders are performing experiments with sound. The concepts include learning that sounds are produced by vibrating objects and columns of air. Changing the length, tension, or thickness of vibrations also changes pitch and frequency. The human ear has a membrane that vibrates when sound reaches it and then the brain translates these vibrations into sound. Human vocal cords produce sound as air moves through the tightened cords.

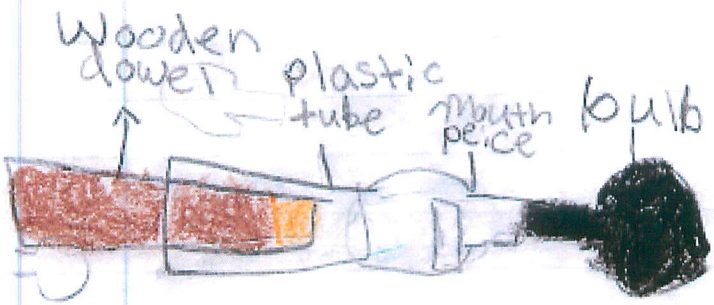
The skills third graders are practicing include performing experiments, describing results of investigations using data, reflecting on experiences, predicting outcomes in new situations, applying previously learned concepts and obtaining more information about sound, hearing, and the vocal cords.

Mrs. Allen
Mrs. Bliven
Mrs. Allen



After making accurate and full observations about how sound travels, Rowan was able to collect data accurately and completely. He showed understanding of fair test by creating a chart to collect and organize data.

Rowan U.
Grade 3

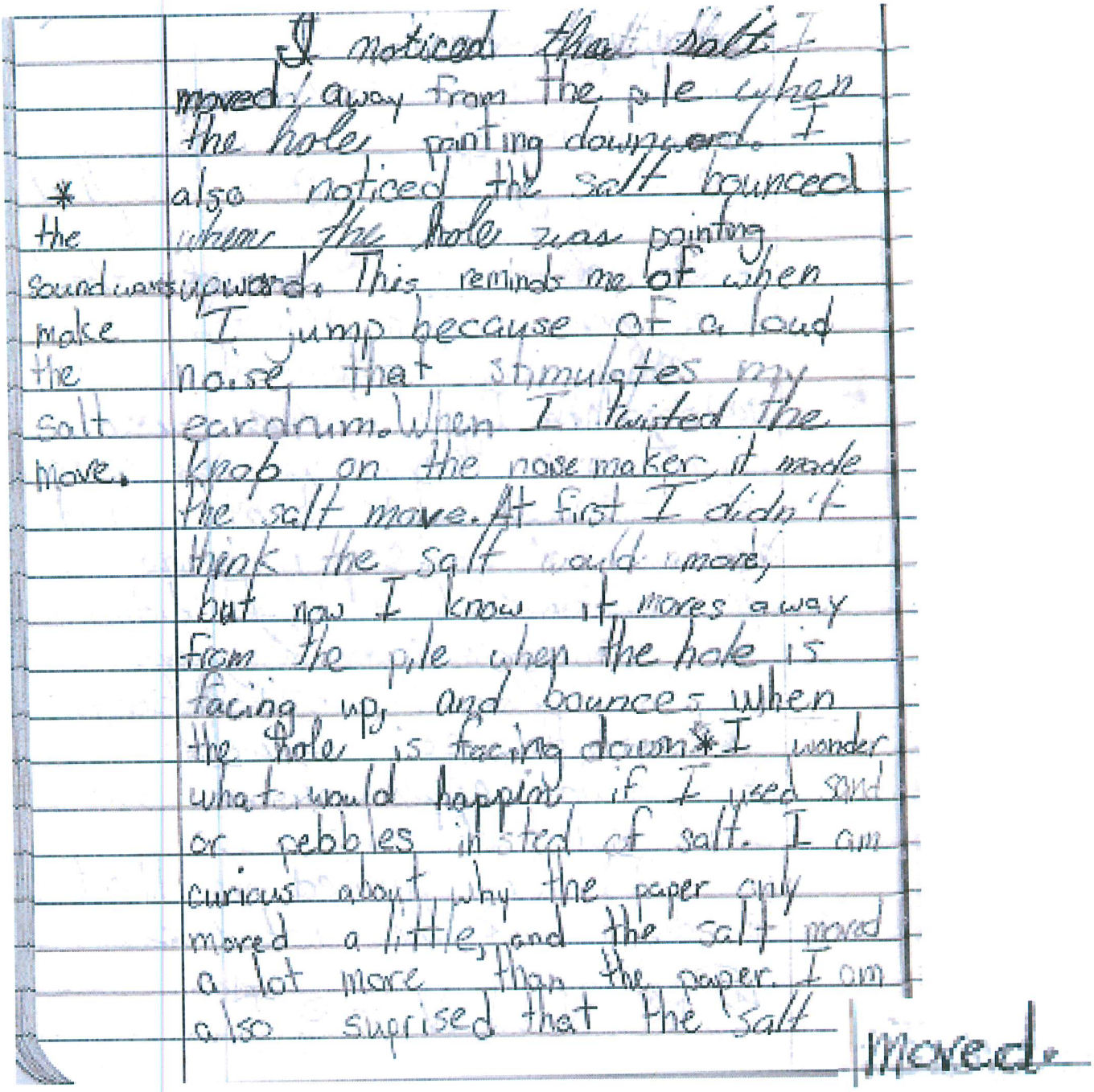


Pitch

I observed that the pitch can be high or low when you move the wooden dowel side to side in the plastic tube. I noticed that when you put the wooden dowel all the way up the plastic tube it makes a low pitch and when the wooden dowel is out of the plastic tube it makes a high pitch sound. I remind me of a instrument that has a slide because it has a high and low pitch sound. At first I didn't hear a low pitch sound but now when I listen carefully I can hear the low pitch sound. I am curious about putting tape at the bottom of the mouth peice

Jasmine made accurate and full observations. She supports her explanations with appropriate data. She included information on pitch clearly and accurately while using scientific vocabulary. She accompanied her writing with an accurate scientific illustration.

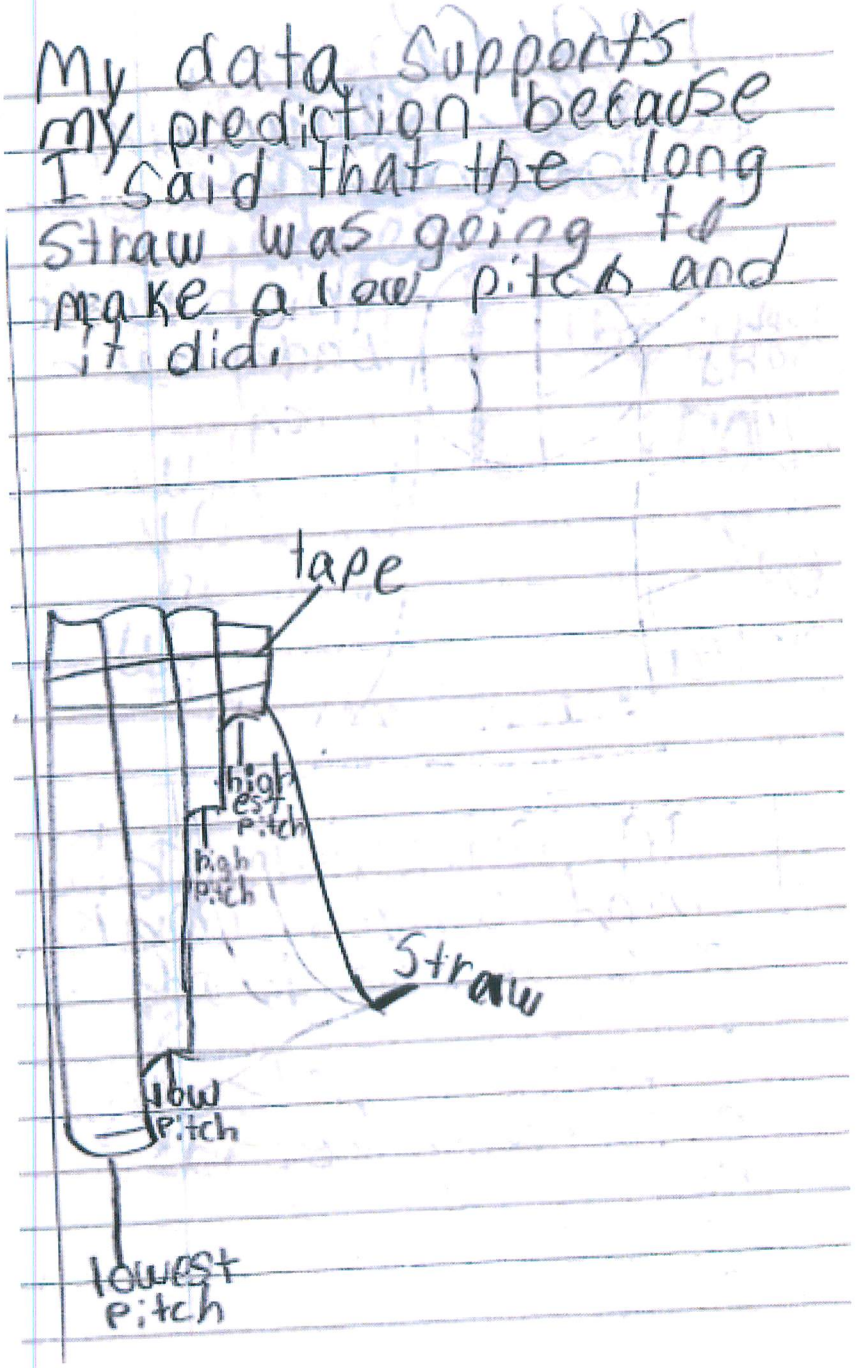
Jasmine S.
Grade 3


I noticed that salt I moved away from the pie when the hole pointing downward. I also noticed the salt bounced when the hole was pointing upward. This reminds me of when I jump because of a loud noise that stimulates my eardrum. When I twisted the knob on the nose maker, it made the salt move. At first I didn't think the salt would move, but now I know it moves away from the pie when the hole is facing up, and bounces when the hole is facing down. I wonder what would happen if I used sand or pebbles instead of salt. I am curious about why the paper only moved a little, and the salt moved a lot more than the paper. I am also suprised that the salt moved.

* the sound waves make the salt move.

After making complete observations about eardrums vibrating, Tia was able to show understanding of sound waves causing vibrations and movement.

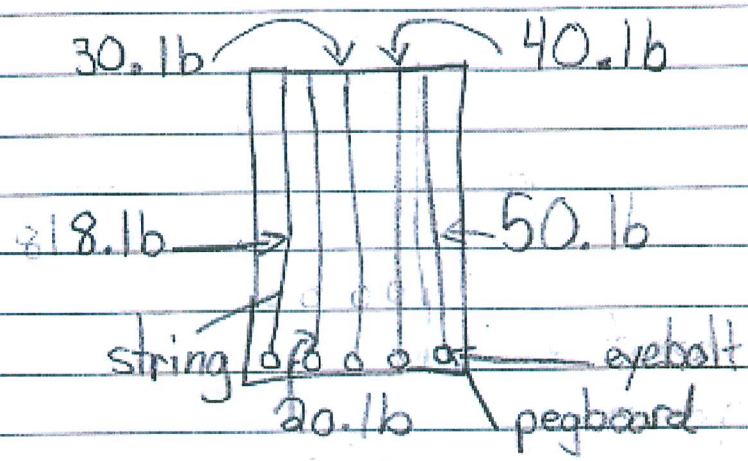
Tia S.
Grade 3



Devan made a prediction about how the length of straws affect pitch. He then created a panpipe and recorded his data. Lastly, he verified that his prediction was supported.

Devan J.
Grade 3

I predict the thin string will make a high pitch because I know a faster vibration makes a higher.



Data	lb	Pitch
	8.lbs	highest
	20.lbs	high
	30.lbs	medium
	40.lbs	low
	50.lbs	lowest

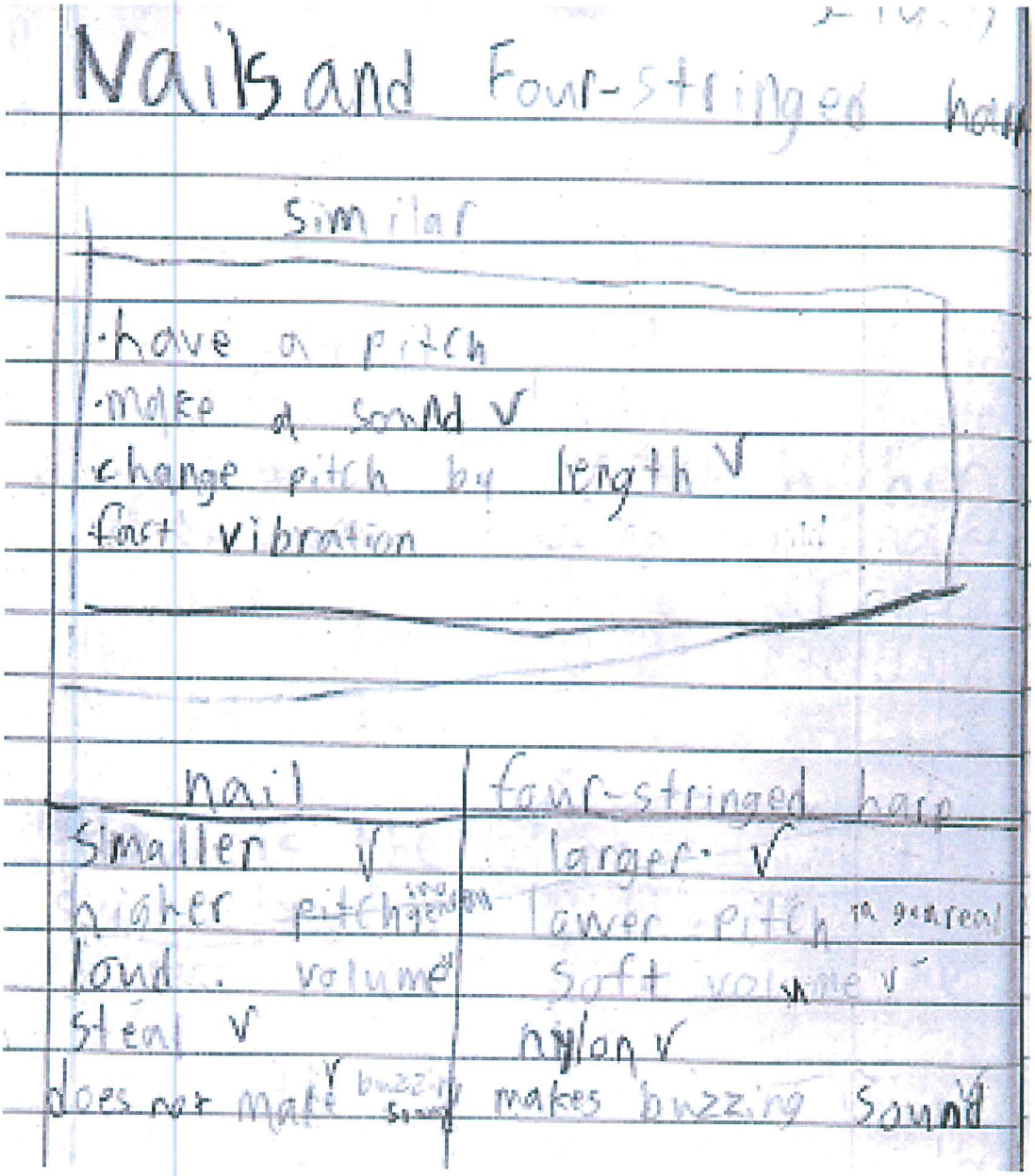
My data suports my prediction. because I predicted the thin string would make a high pitch and the 8 lbs. string, which is the thin string, made the highest pitch.

Noelle made a prediction but about how the thickness of a string effects pitch. She illustrated the peg board and collected data while performing a fair test. She determined the data supported her prediction.

Noelle S.

After explaining observations, Matt was able to compare different observations and organize them accurately in a Box and T-Chart. In addition, Matthew used his organized observations accurately in a "compare and contrast" writing frame. Matthew was able to develop his ideas fully with relevant ideas, evidence, and explanation. Matthew used appropriate transition words to show logical connections and also used scientific vocabulary accurately.

Matt P.
Grade 3



The nails and the four-stringed harp are similar because they both can make a sound. In addition they can change pitch by the length. Also they have a fast vibration.

They are different because the nails are smaller in length but the four-stringed harp is larger in length. Also the nails are made from steal whereas the four-stringed harp is made out of nylon. In addition the nails do not make a buzzing sound furthermore the string make a buzzing sound. Second to last the nails make a higher pitch in general but the four-stringed harp makes a lower pitch in general. Lastly, the nail makes loud volume but the four-stringed harp makes a soft sound. In the end

Fourth Grade

Magnetism and Electricity Module

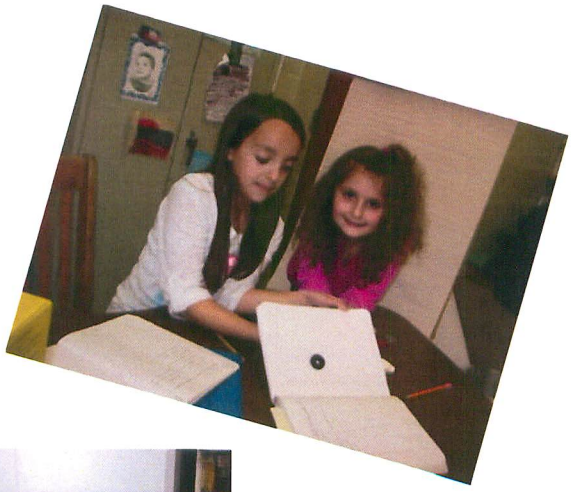
The Magnetism and Electricity Module helps students investigate permanent magnets, build electric circuits powered by D-cells (flashlight batteries), and explore electromagnetism.

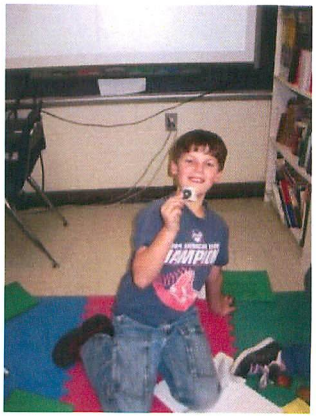
During the magnetism portion of the module, students observed the interaction of permanent magnets with a variety of common materials. They also discovered that magnets display forces of attraction and repulsion. Furthermore, they investigated the change in force between two magnets as the distance between them increases.

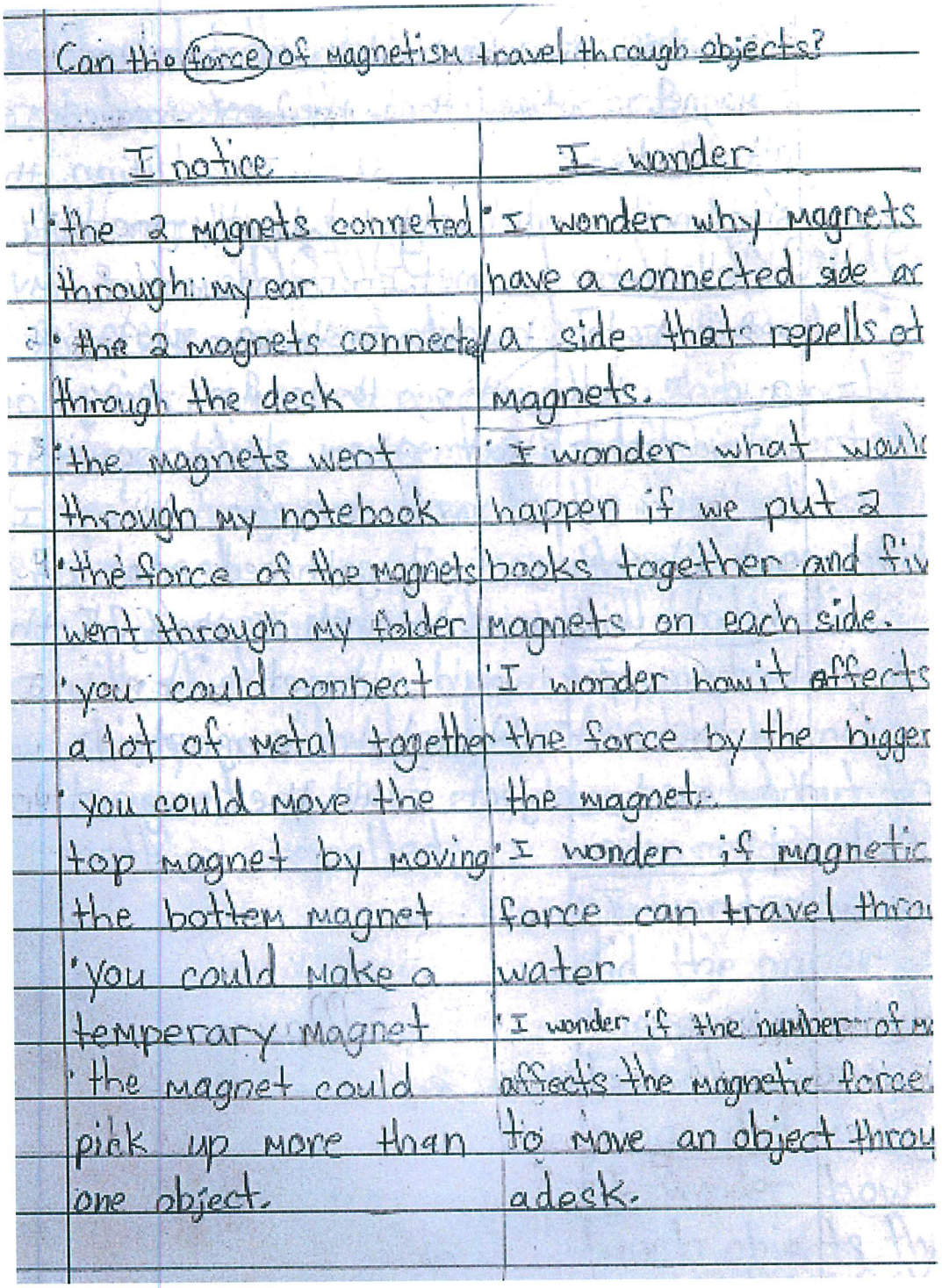
As students investigated the electricity portion of the module, they began by identifying materials that are conductors and insulators. They also learned how to construct open, closed, parallel, and series circuits.

Finally, they combined their knowledge of magnetism and electricity to construct electromagnets. They investigated the relationship between the number of turns of wire around an electromagnet core and the strength of magnetism. To conclude the module, students incorporated their experiences with circuits and magnetism to create a working telegraph that could send a message from one group to another using Morse Code.

Mrs. Ornburn
Mrs. Young





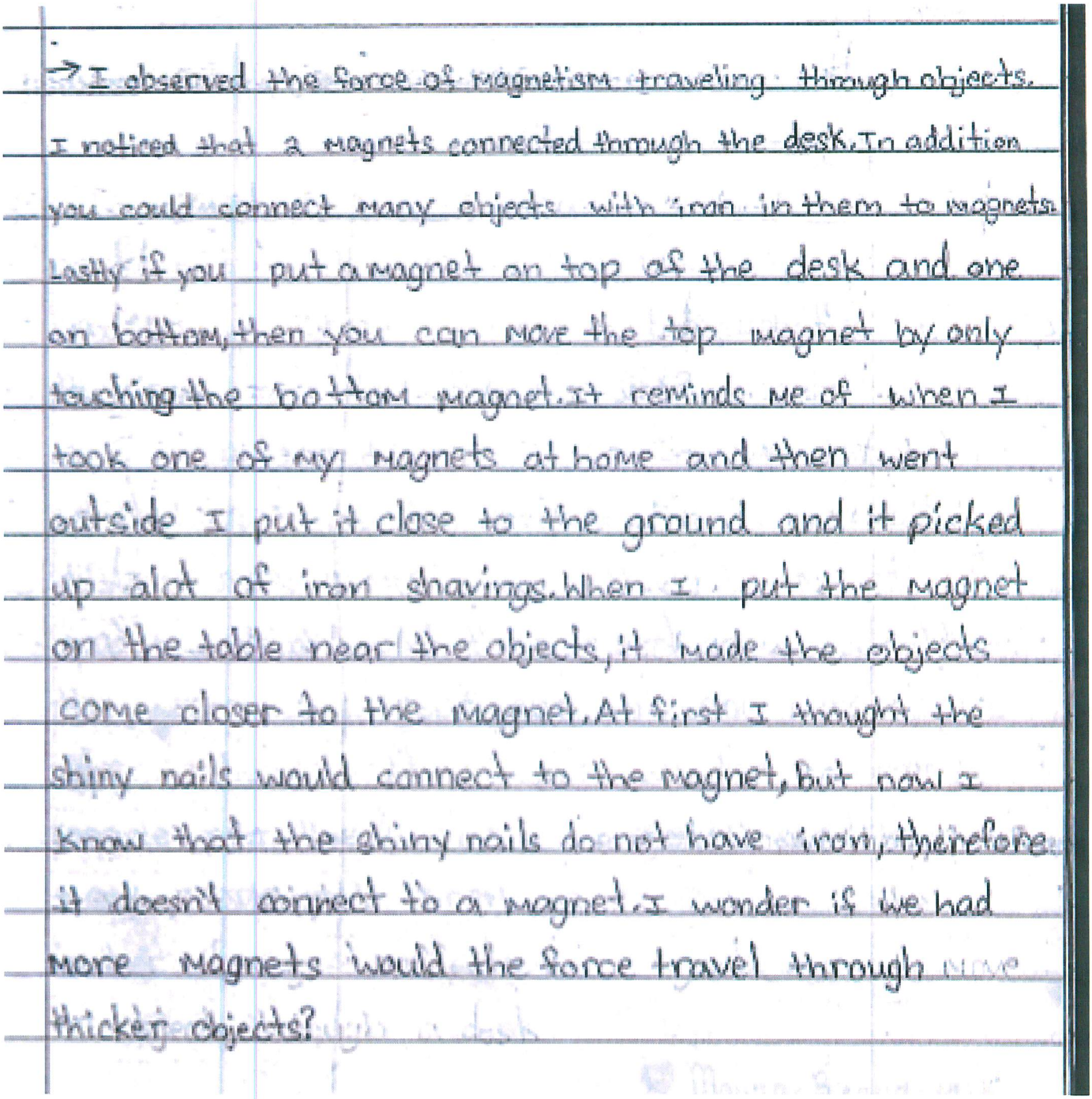


Can the force of magnetism travel through objects?

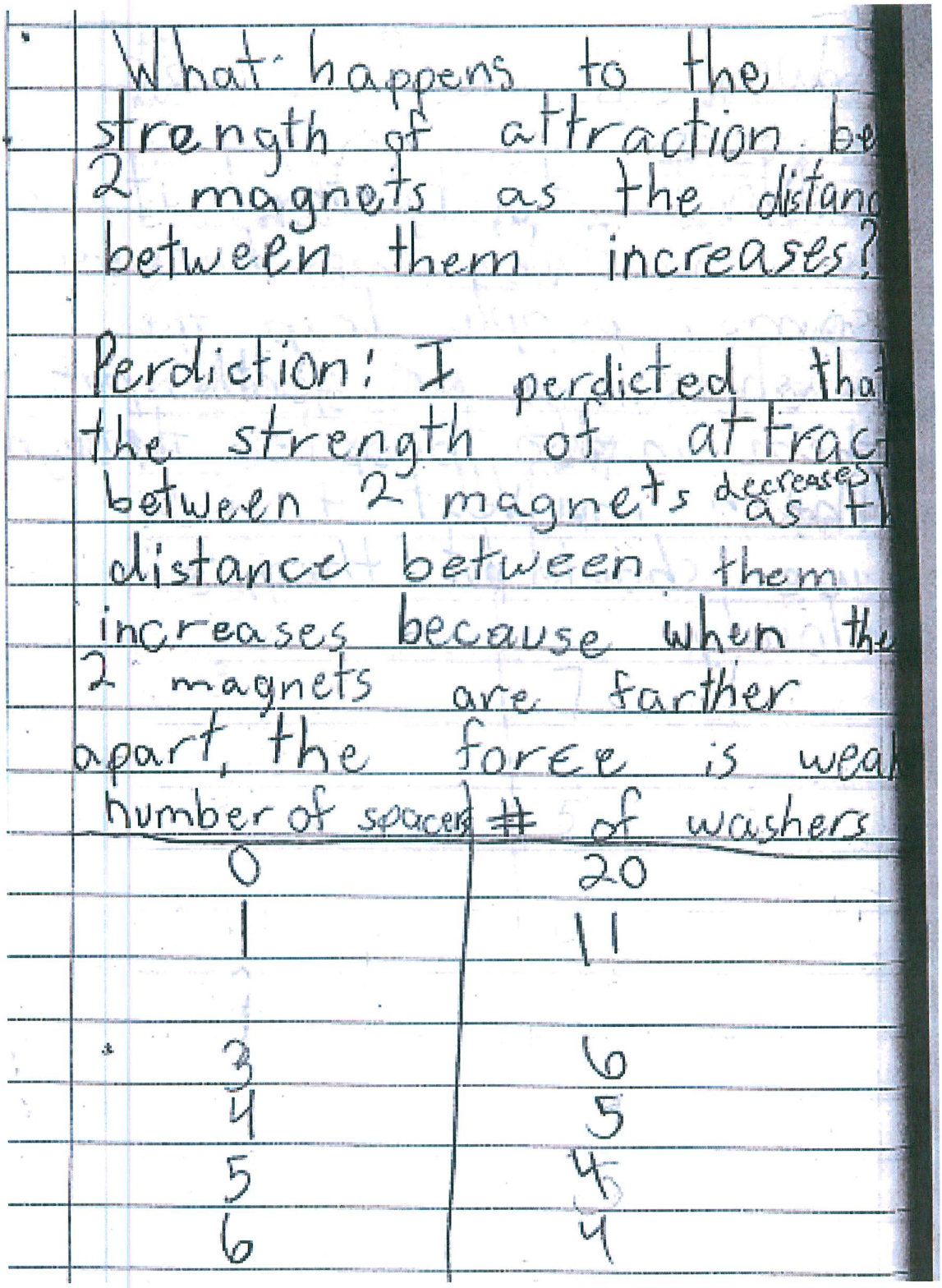
I notice	I wonder
1. the 2 magnets conneted through my ear	I wonder why magnets have a connected side or
2. the 2 magnets connected through the desk	a side that repells ot magnets.
3. the magnets went through my notebook	I wonder what would happen if we put 2
4. the force of the magnets went through my folder	books together and fiv magnets on each side.
you could connect a lot of metal together	I wonder how it affects the force by the bigger
you could move the top magnet by moving the botten magnet	the magnet. I wonder if magnetic force can travel thro
you could make a temperary magnet	water
the magnet could pick up more than one object.	I wonder if the number of m affects the magnetic force to move an object throu adesk.

Students were given a magnet and a bag of test items. They were asked how these items interacted with the magnet. Maura's "I Notice/I Wonder" chart shows that she made accurate and full observations. Furthermore, she collected her data in a neat and organized way. Her "I Wonder" section shows a great deal of critical thinking. She asks "investigatable" questions which could be used for further exploration.

Maura B.
Grade 4


→ I observed the force of magnetism traveling through objects. I noticed that 2 magnets connected through the desk. In addition you could connect many objects with iron in them to magnets. Lastly if you put a magnet on top of the desk and one on bottom, then you can move the top magnet by only touching the bottom magnet. It reminds me of when I took one of my magnets at home and then went outside I put it close to the ground and it picked up alot of iron shavings. When I put the magnet on the table near the objects, it made the objects come closer to the magnet. At first I thought the shiny nails would connect to the magnet, but now I know that the shiny nails do not have iron, therefore it doesn't connect to a magnet. I wonder if we had more magnets would the force travel through more thicker objects?

Maura's writing piece shows an accurate and complete grasp of the big idea that magnets are attracted to items that contain iron. She uses evidence from her observations to support her inference. She states her ideas clearly and uses relevant details to get her point across.



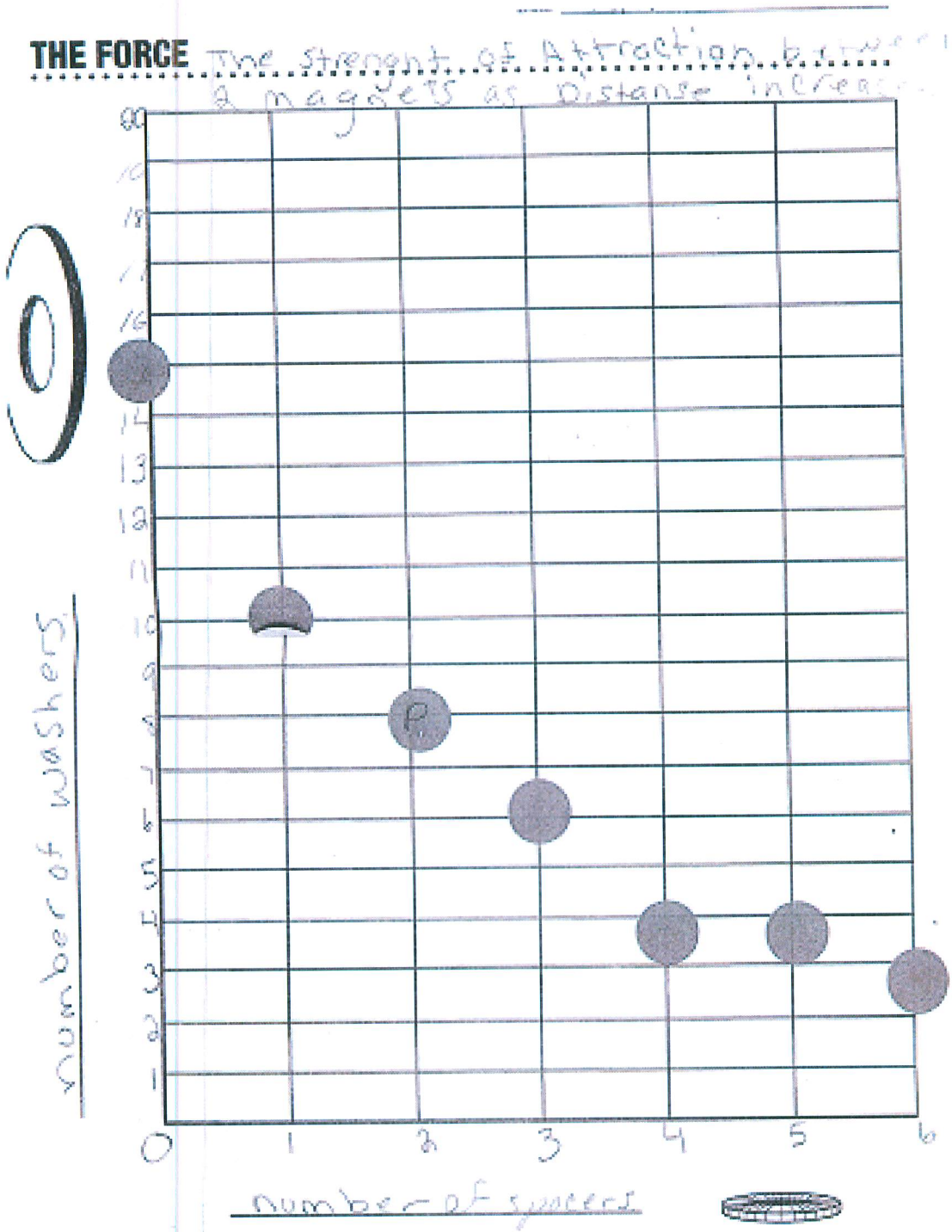
What happens to the strength of attraction be 2 magnets as the distanc between them increases?

Perdiction: I perdicted tha the strength of attrac between 2 magnets decreases as t distance between them increases because when the 2 magnets are farther apart, the force is weak

number of spacers	# of washers
0	20
1	11
3	6
4	5
5	4
6	4

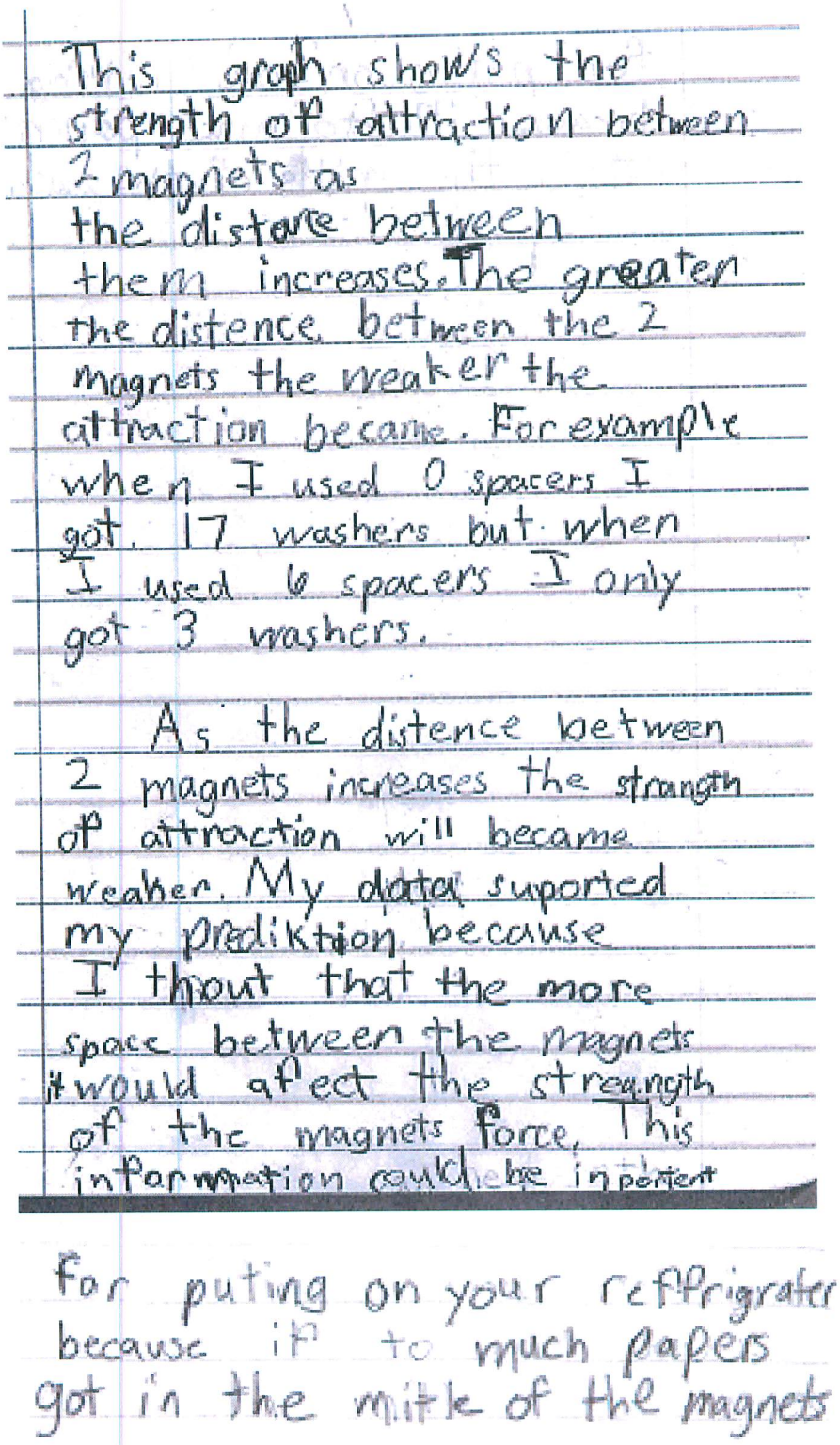
In this investigation, students were testing what happens to the strength of attraction between two magnets as the distance between them increases. Tiffany's prediction applies previous learning about force to a new concept. She states her prediction clearly and uses accurate scientific vocabulary.

Tiffany B.
Grade 4



After collecting data about the strength of attraction between 2 magnets, students graphed the results on a line graph. Callie's graph had an appropriate title, labels, and a scale. She graphed her data accurately, and was able to predict how many washers would break the force if she used two spacers based on the trend of the data.

Callie R.
Grade 4

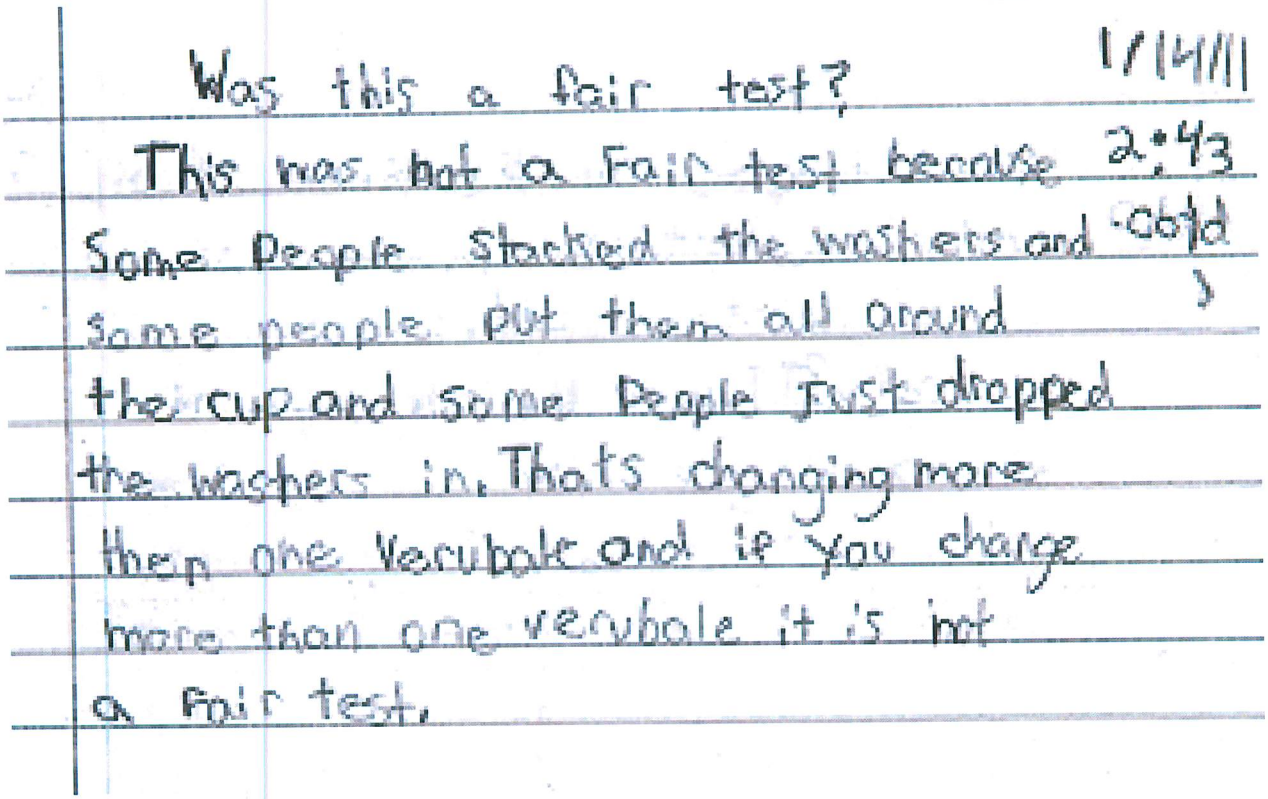


This graph shows the strength of attraction between 2 magnets as the distare between them increases. The greater the distence between the 2 magnets the weaker the attraction became. For example when I used 0 spacers I got 17 washers but when I used 6 spacers I only got 3 washers.

As the distence between 2 magnets increases the strength of attraction will became weaker. My data suported my prediktion because I thout that the more space between the magnets would afect the streangth of the magnets force. This information could be important for puting on your refrigrater because if to much papers got in the mitle of the magnets

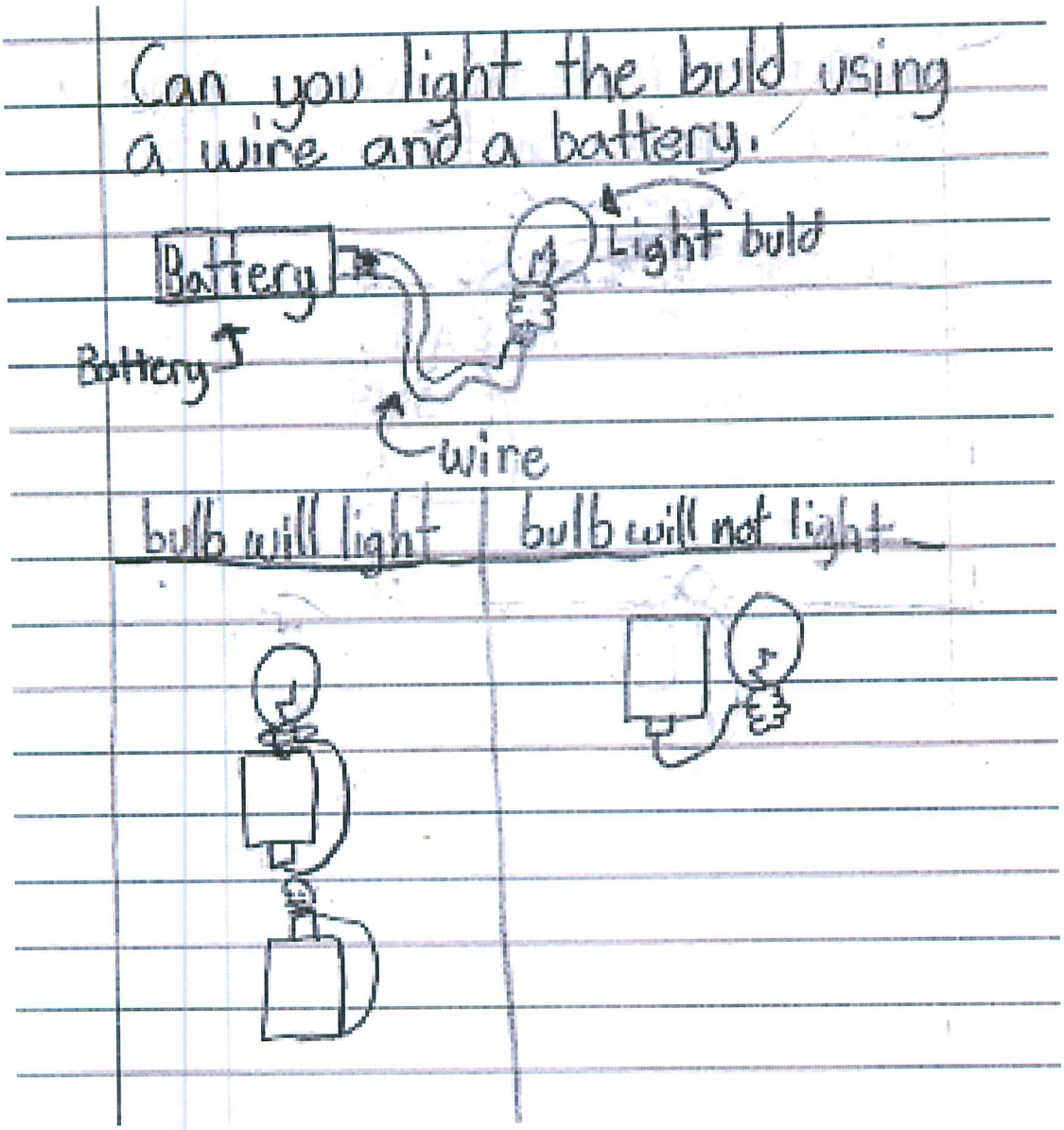
The writing piece was chosen because Chuck was able to draw a reasonable inference from his data and support that inference with both qualitative and quantitative data. He was able to examine his graph and compare different data points. He demonstrated a good understanding of the science concept.

Charles H.
Grade 4



In this investigation, students tested the strength of the force of attraction between two magnets. After completing the investigation, students were asked whether or not the test was fair. In Mindy's response, she refers to changing more than one variable. This shows an understanding of fair tests and controlled investigations.

Mindy L.
Grade 4



Luke's illustration was chosen because he showed an understanding of the "big idea" through graphics. His illustration shows accurately how a bulb will light and how a bulb will not light. He shows that he has a full grasp of the concept of a circuit.

Luke B.
Grade 4

What is similar and different about a Series Circuit and a paralell?

(1)

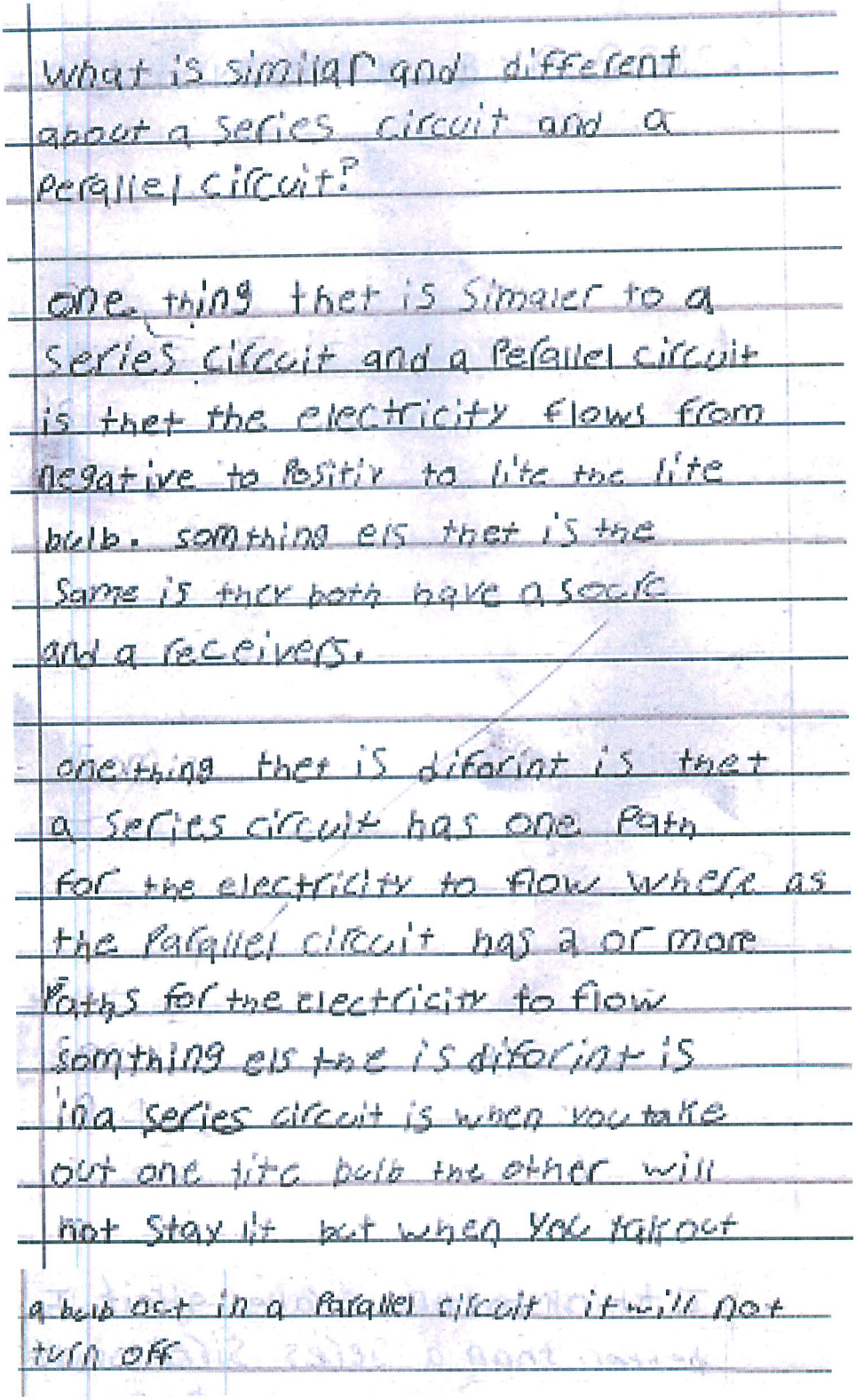
→ One thing that is similar about a series circuit and a paralell circuit is that they both have a source and a receiver. In addition, they can both be opened and closed with a switch. Lastly, they both can have more than two receiver.

(2)

→ One thing that is different about a series circuit and a paralell circuit is that the series circuit has one path of eletricity while, the paralell circuit has more than one path of eletricity. Also, if you→ remove a receiver from the series circuit the other receiver will stop working on the other hand, if you remove a reciver from the paralell circuit the other receiver will continue to work. Finally, in the series circuit the energy is shared so the bulbs are dim whereas, in the paralell circuit the receivers have thier own path so, they will both be very bright.

Students completed several investigations about series and parallel circuits. After working with each type of circuit, students recorded their observations. As a class, we made a box and T-chart to compare the two circuits. Students were then asked to write a comparison of the two. Malese's response to "What is similar and different about a series and parallel circuit?" is clearly written and logically sequenced. Her use of transition words enhances her overall writing and it is clear that she grasps the major science concepts of the unit.

Malese F.
Grade 4



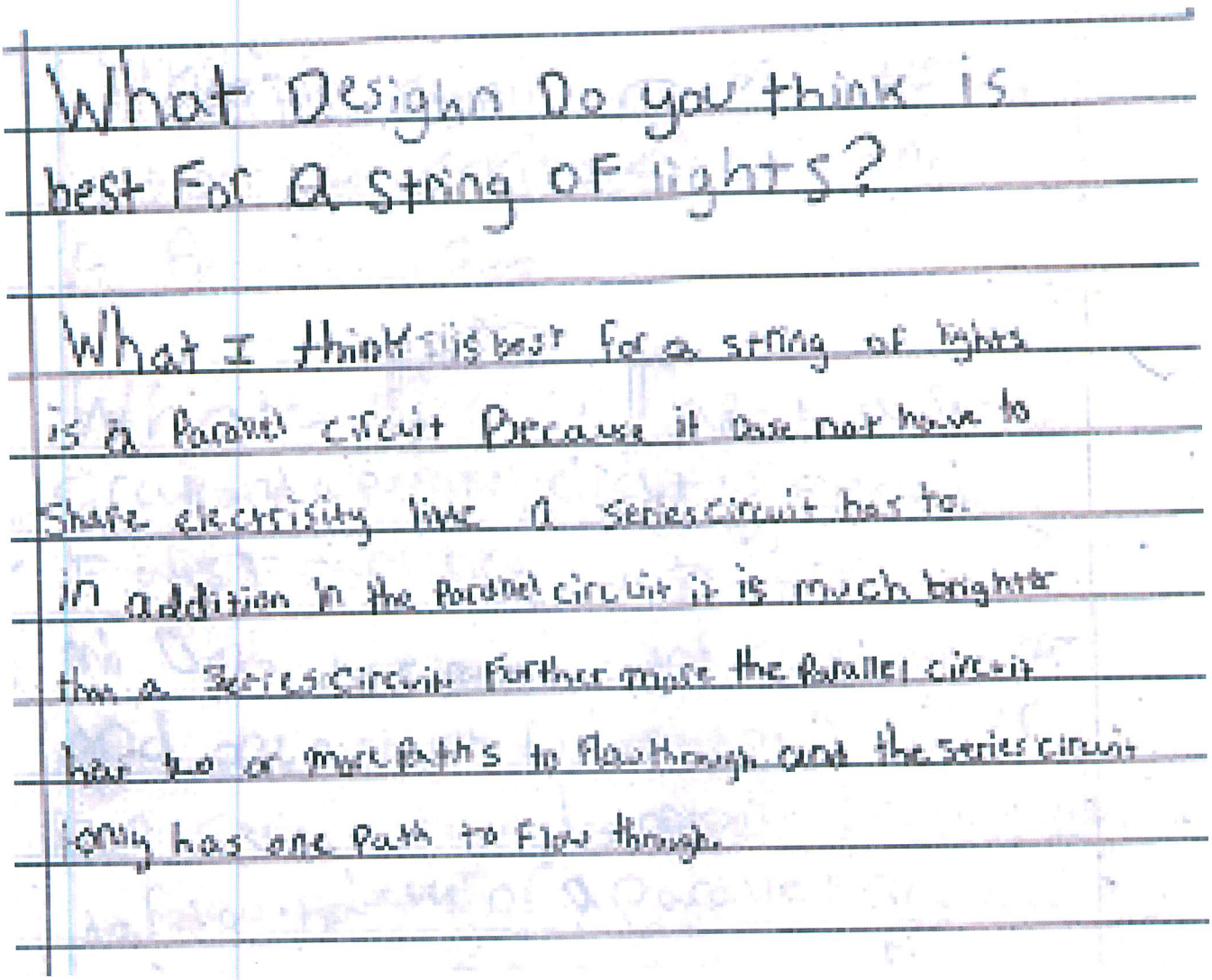
What is similar and different about a series circuit and a Parallel circuit?

One thing that is Simaler to a series circuit and a Parallel circuit is that the electricity flows from negative to Positiv to lite the lite bulb. somthing els that is the Same is they both have a sorc and a receivers.

one thing that is diforint is that a series circuit has one Path for the electricity to flow where as the Parallel circuit has a or more Paths for the electricity to flow somthing els the is diforint is in a series circuit is when you take out one lite bulb the other will not Stay lit but when you tak out a bulb out in a Parallel circuit it will not turn off

Taylor I.'s response to "What is similar and different about a series and parallel circuit?" shows an understanding of the big ideas of the unit. He uses accurate science vocabulary to explain his thinking and he uses transition words to enhance his writing.

Taylor I.
Grade 4



Alexis was able to take what she learned during investigations of series and parallel circuits and apply it to a real world situation. She states her idea clearly and develops it using relevant details and evidence.

Alexis S.
Grade 4

How can a rivet become a magnet when you connect it to a circuit?

A rivet can become a magnet by wrapping a wire around the rivet. The magnetic field from the wire is being combined with other magnetic fields to make a larger one.

I noticed that if the wire is wrapped tighter around the rivet you can attract more washers. I also noticed that if you wrap the wire closer to the head of the rivet you can attract more of the washers. Furthermore, when the wire was wrapped neatly more washers were attracted. If it was wrapped loosely you could only pick up one or two washers.

This makes me wonder if I could attract more washers if I had a bigger rivet. I think this would create a bigger magnetic field. I am also curious if a nail would create a better magnetic field than a rivet.

In this investigation, students were asked to create an electromagnet given a rivet, some wire, a d-cell, and a switch. After successfully creating the electromagnet, students were asked to write a response to the following question: "How can a rivet become a magnet when you connect it to a circuit?" Taylor K.'s response demonstrates an understanding of the "big ideas" of the unit. She accurately applied previous learning about magnetic fields and circuits to the new concept of electromagnetism.

Taylor K.
Grade 4

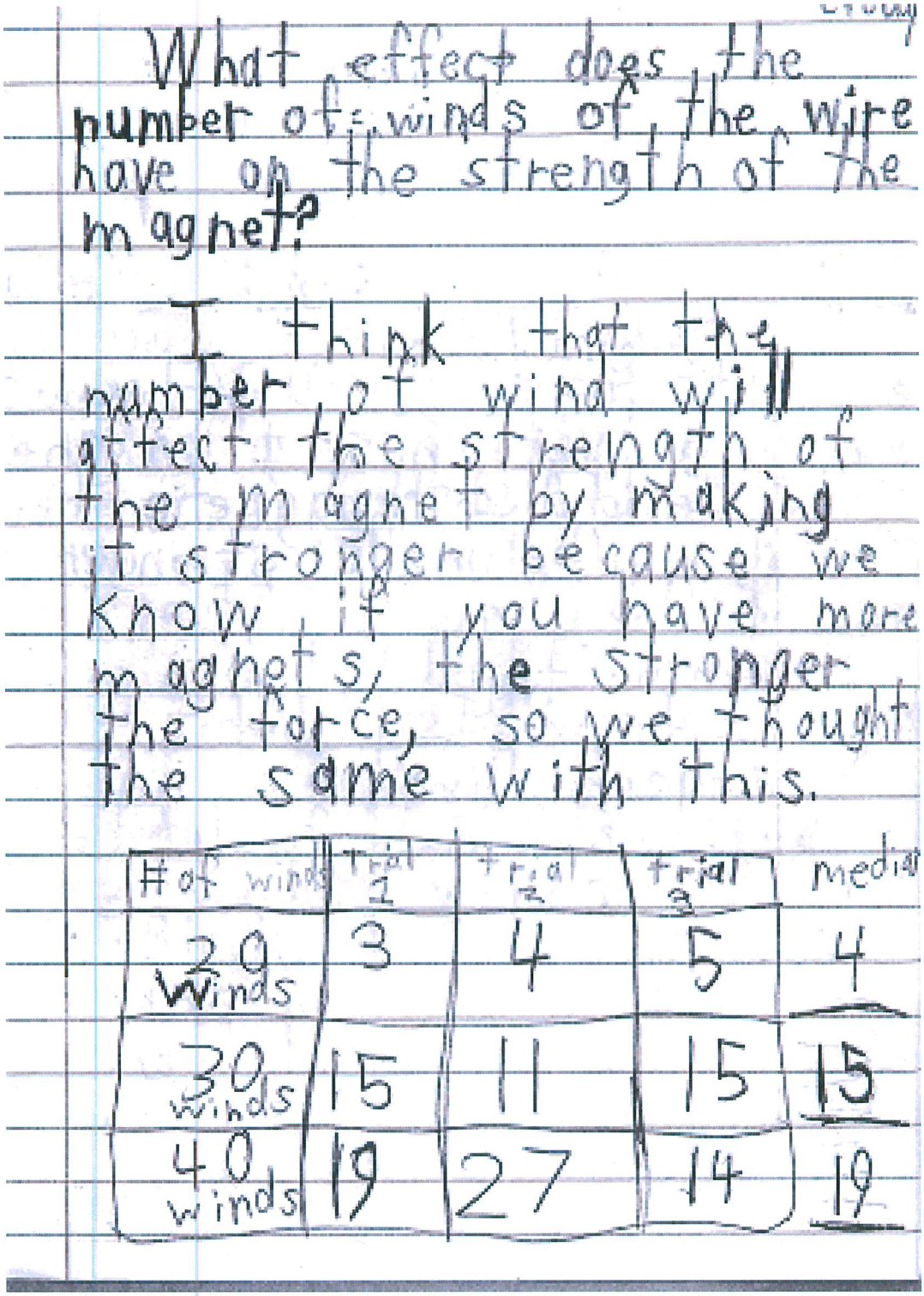
What effect does the number of winds of the wire have on the strength of the magnet?

Prediction: I predict that the number of winds will make the strength of the magnet stronger because it would be 1 magnetic force and another magnetic force and so on.

Number Winds	Number washers Trial 1	Number washers Trial 2	Number washers Trial 3	Median
20 winds	3	3	3	3
30 winds	10	11	8	10
40 winds	15	15	14	14

Paige's prediction shows that she has a clear understanding of what the focus question is asking of her. She appropriately and accurately applies previous learning of electromagnets to a new question. Her data was collected and recorded accurately and completely.

Paige S.
Grade 4



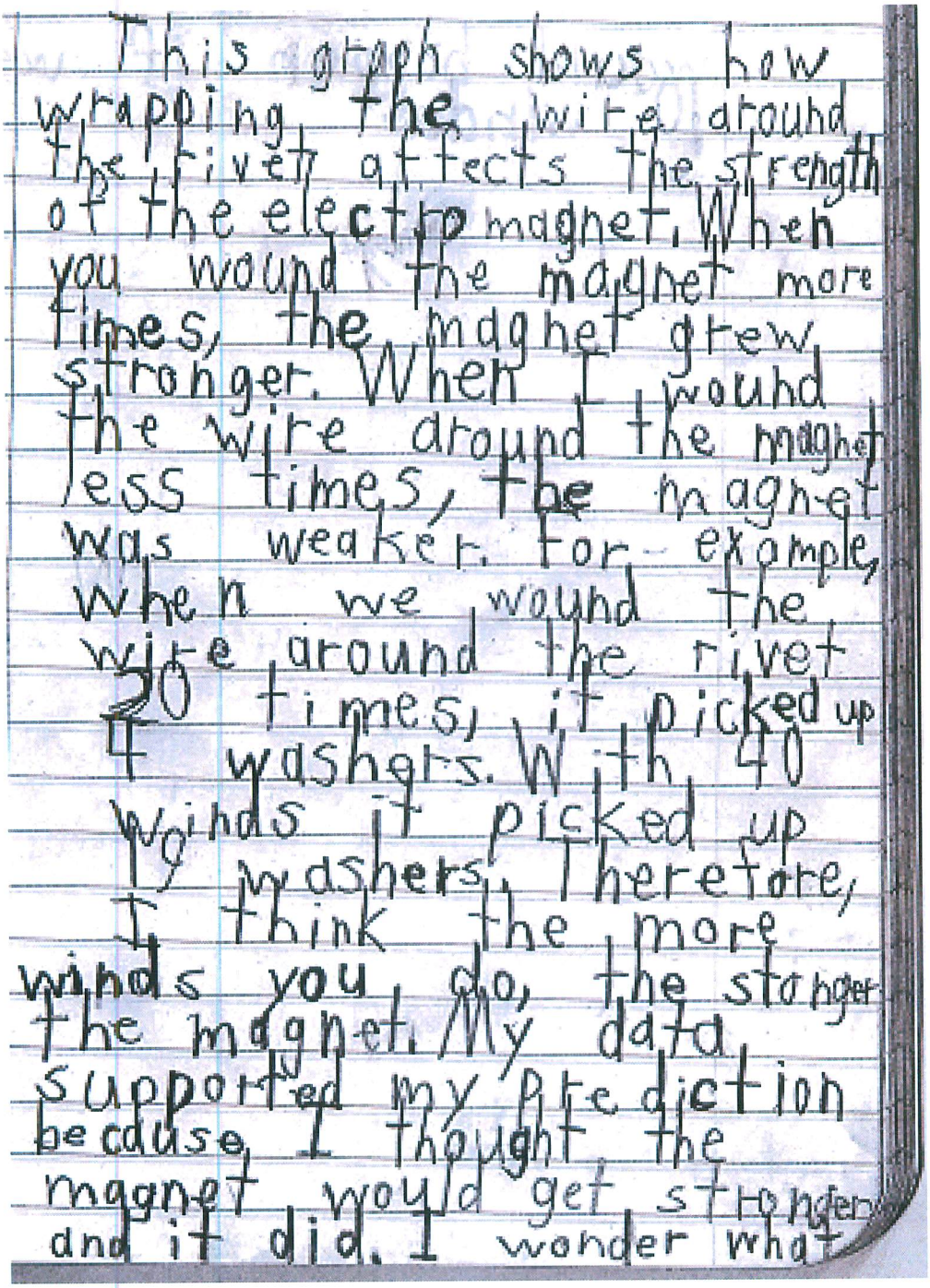
What effect does the number of winds of the wire have on the strength of the magnet?

I think that the number of wind will affect the strength of the magnet by making it stronger because we know, if you have more magnets, the stronger the force, so we thought the same with this.

# of winds	trial 1	trial 2	trial 3	median
29 winds	3	4	5	4
30 winds	15	11	15	15
40 winds	19	27	14	19

In this investigation, students were asked what effect the number of winds of a wire would have on the strength of an electromagnet. Alex's prediction referred to a previous investigation about magnetic force to explain his thinking. His writing was clearly stated, and included science vocabulary. In his data table, Alex collected and recorded data accurately and completely.

Alex W.
Grade 4


This graph shows how wrapping the wire around the rivet affects the strength of the electromagnet. When you wound the magnet more times, the magnet grew stronger. When I wound the wire around the magnet less times, the magnet was weaker. For example, when we wound the wire around the rivet 20 times, it picked up 4 washers. With 40 winds it picked up 9 washers. Therefore, I think the more winds you do, the stronger the magnet. My data supported my prediction because I thought the magnet would get stronger and it did. I wonder what

would happen if we did ten winds.

After completing the investigation on the strength of the electromagnet, students were asked to write a data analysis. In Alex's response, he demonstrated a full grasp of the major science concepts in the lesson. He examined his data carefully and identified the results by comparing different data points. He supported his explanations with the appropriate data, and his writing was logically sequenced with transition words.

Alex W.
Grade 4

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