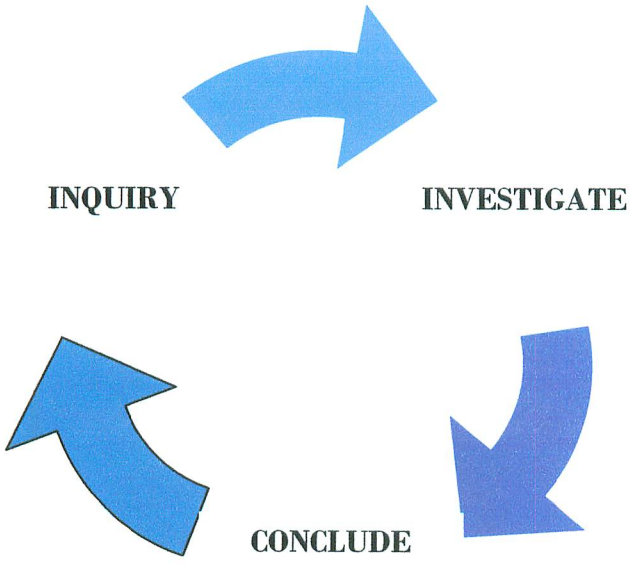
Ashaway School Science Journal

December of 2011
Trimester 1
Volume 3

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



Ashaway School Teachers

Kindergarten

Kerri Smith
Lori Lambert

Grade 1

Christine Austin
Patience Breault

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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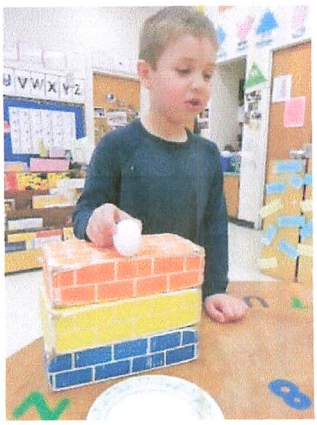
Kindergarten

Mrs. Smith

Miss Lambert

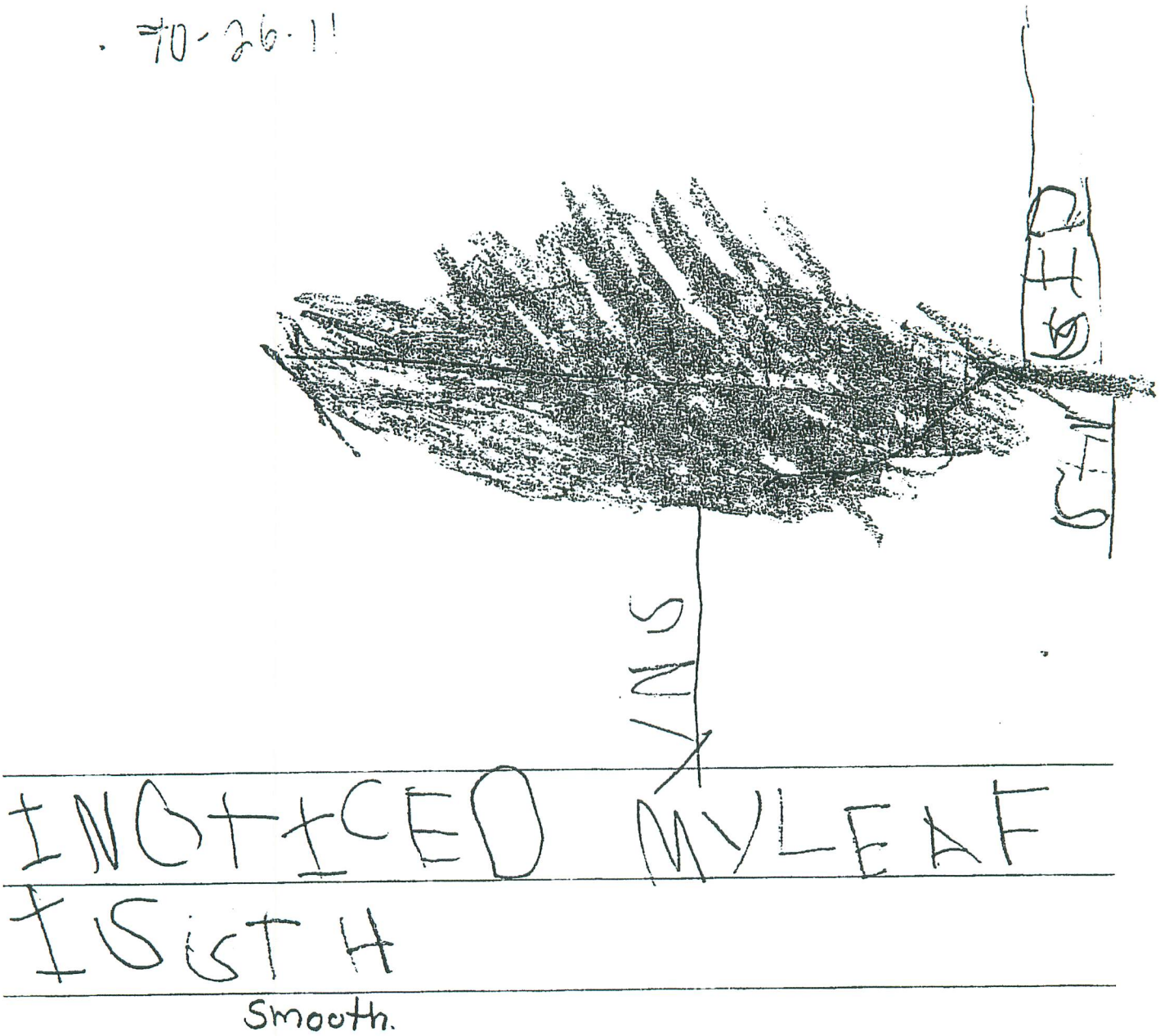


I NOTICED MY leafs LEAF'S VNS VEINS Df don't MAH match

The students start the year with drawing a scientific illustration by observing an object. They also learn how to label it properly.

Grayson S.

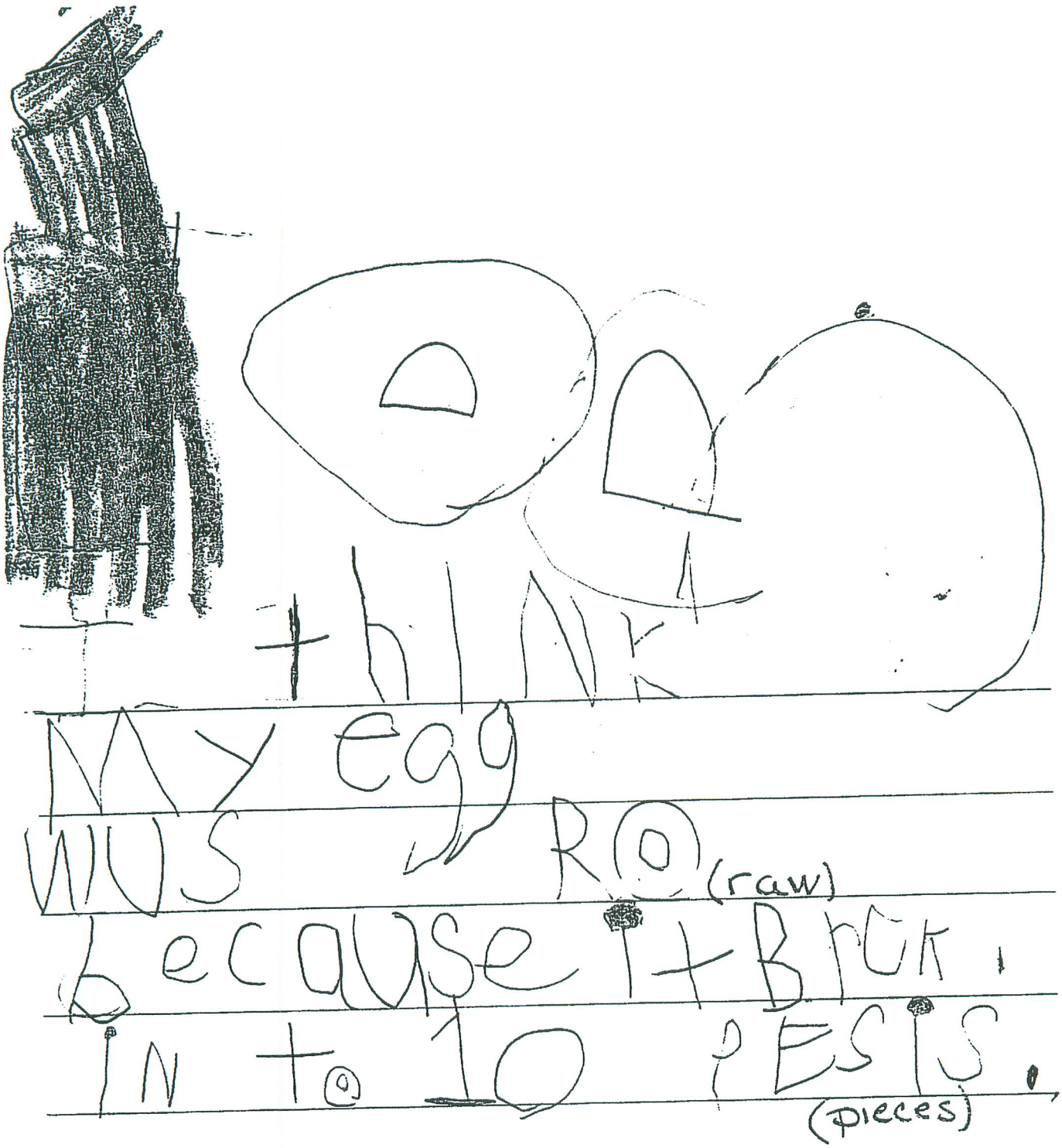
Kindergarten



The students observed an object and drew a scientific illustration. Then they had to write a sentence about their observation. Guy wrote about the texture of the leaf.

Guy Jakob

Kindergarten



Students completed an investigation that required them to test if an egg would break or not if it rolled off a "wall." Some of the eggs were hard boiled and some were raw. The lesson was connected to Humpy Dumpty. Students had to predict what would happen to the egg when it rolled off the wall and then decide if it was a hard boiled egg or a raw egg.

Keely S.

Kindergarten

The following student work samples are from the Humpty Dumpty lesson. Students had to predict about whether their egg would break or not and then provide evidence proving or disproving their prediction.

I predict my egg will break. My prediction was true because my egg broke.

Alayna R.

Kindergarten

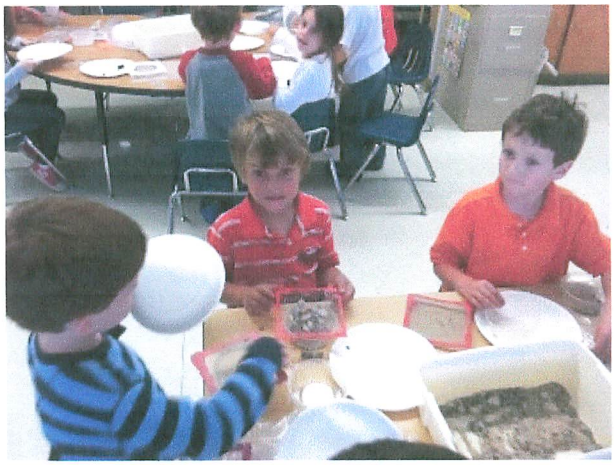
I predict my EGG will BREAK. My prediction was true because the egg broke.

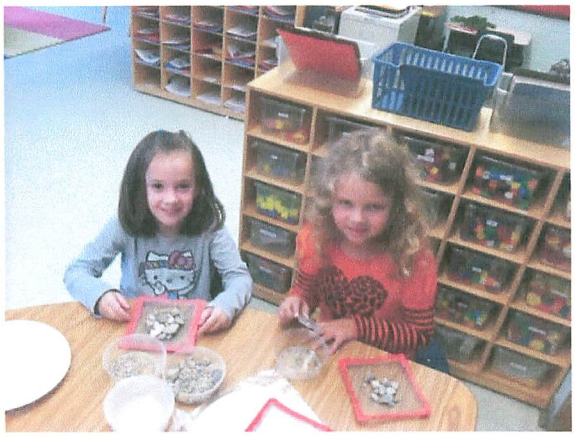
Jackson H.

Kindergarten

First Grade

Pebbles, Sand, and Silt



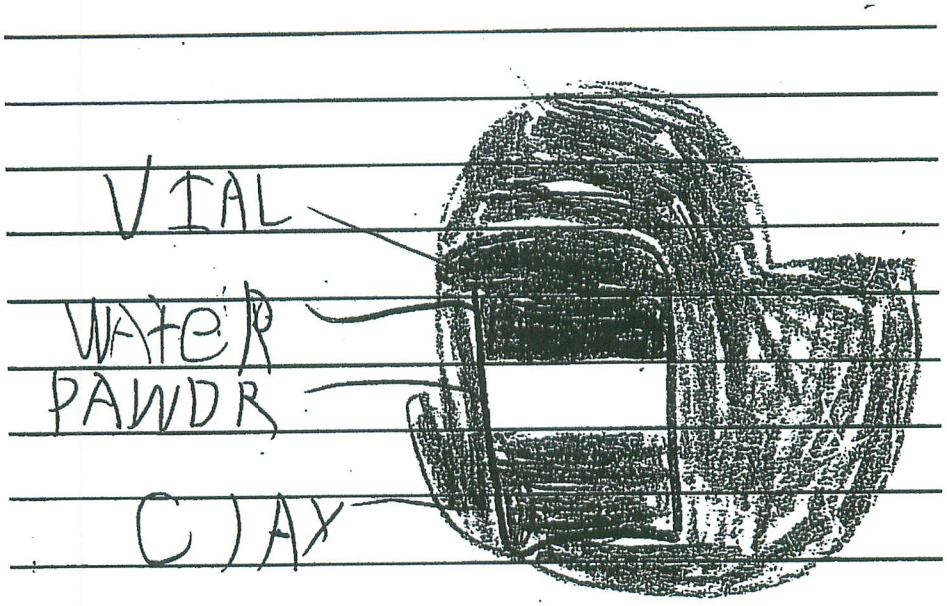


Mrs. Austin

Mrs. Breault

What do you predict will happen when we put clay in a vial of water? Why do you think this?

I PREDICT the CLAY WIL TRN INTO PAWDR. I think this because We DID this to the SAND.



Students were asked to predict what would happen when we add clay to water. Cory made a prediction based on his prior experience with sand. He used prior knowledge to make a thoughtful prediction. He also provided an accurate scientific illustration

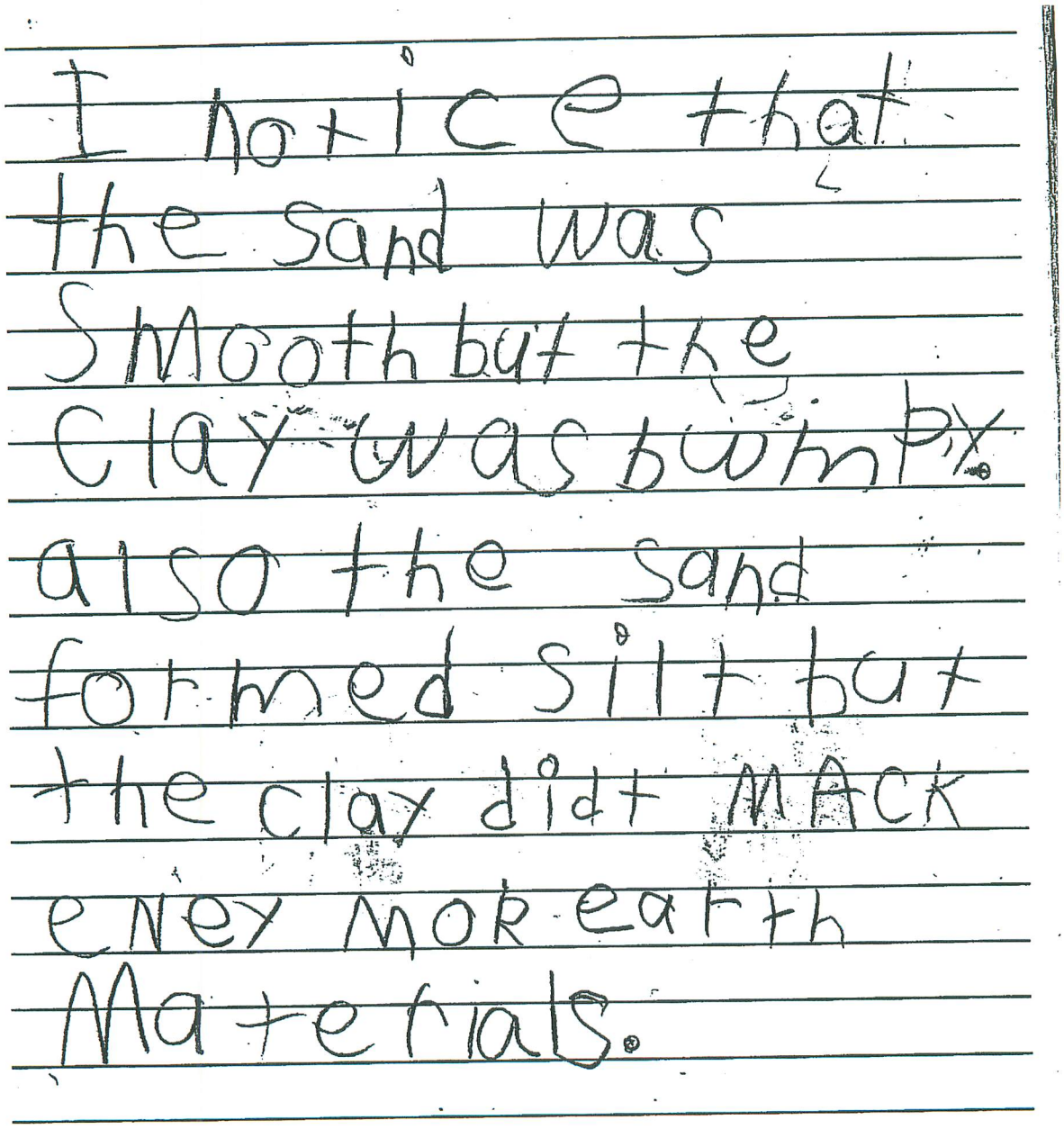
Cory S.

Grade 1

The students observed a vial of clay and water and a vial of sand and water. Then they wrote about their observations. Holly provides a detail description comparing the two vials. She used great describing words such as smooth and bumpy. She also used scientific vocabulary words like earth materials and silt. In addition, her scientific illustration is accurate and detailed.

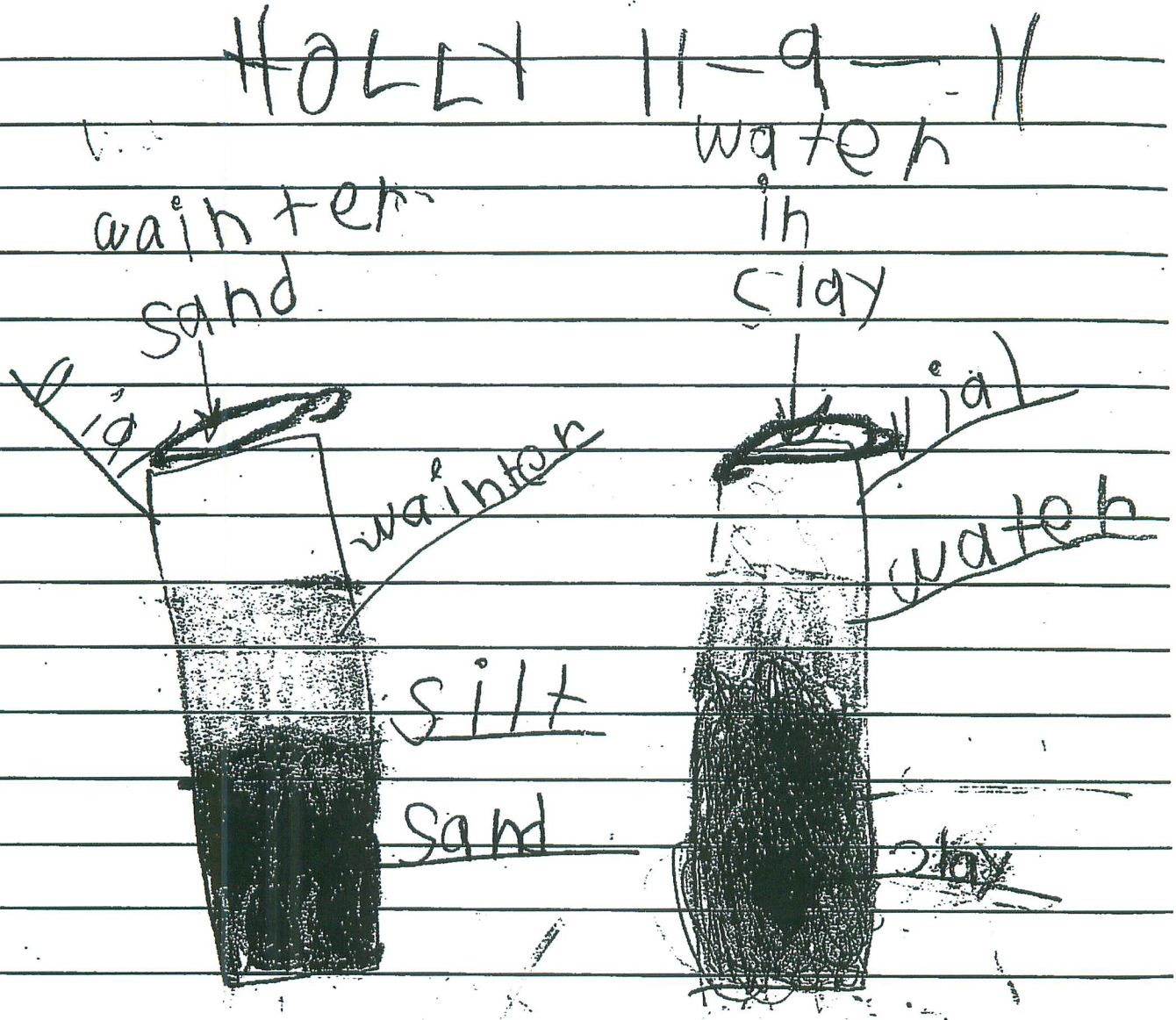
Holly W.

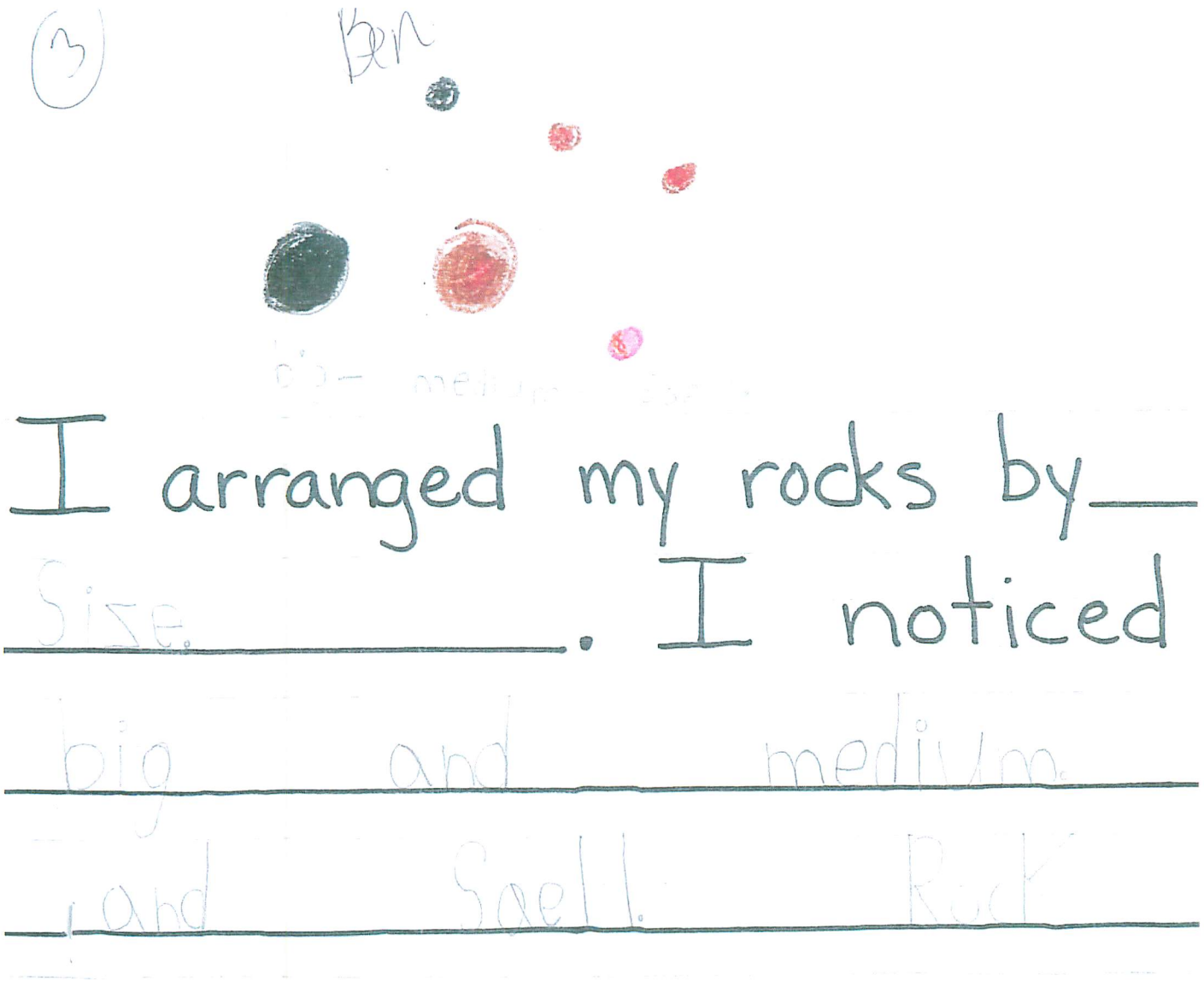
Grade 1



What do you notice about clay that is different from sand?

HOLLY H-9-H





Students were asked to sort the river rocks and then tell how they sorted them. Ben sorted the rocks by size, which he indicates in his writing. He also provides a clear and detailed illustration of the rocks he sorted. In addition, he clearly labeled the rocks big, medium, and small.

Ben C.

Grade 1

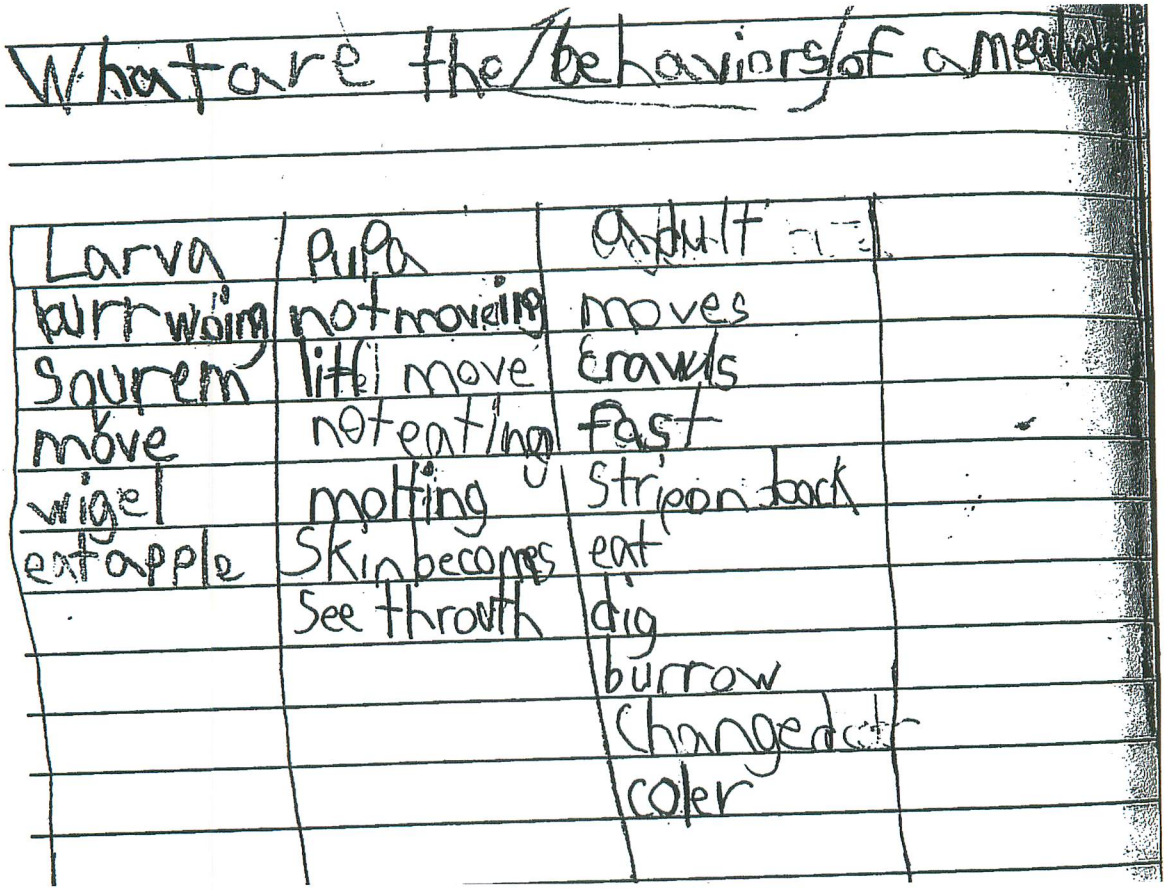
Second Grade

Insects

Mrs. Lee

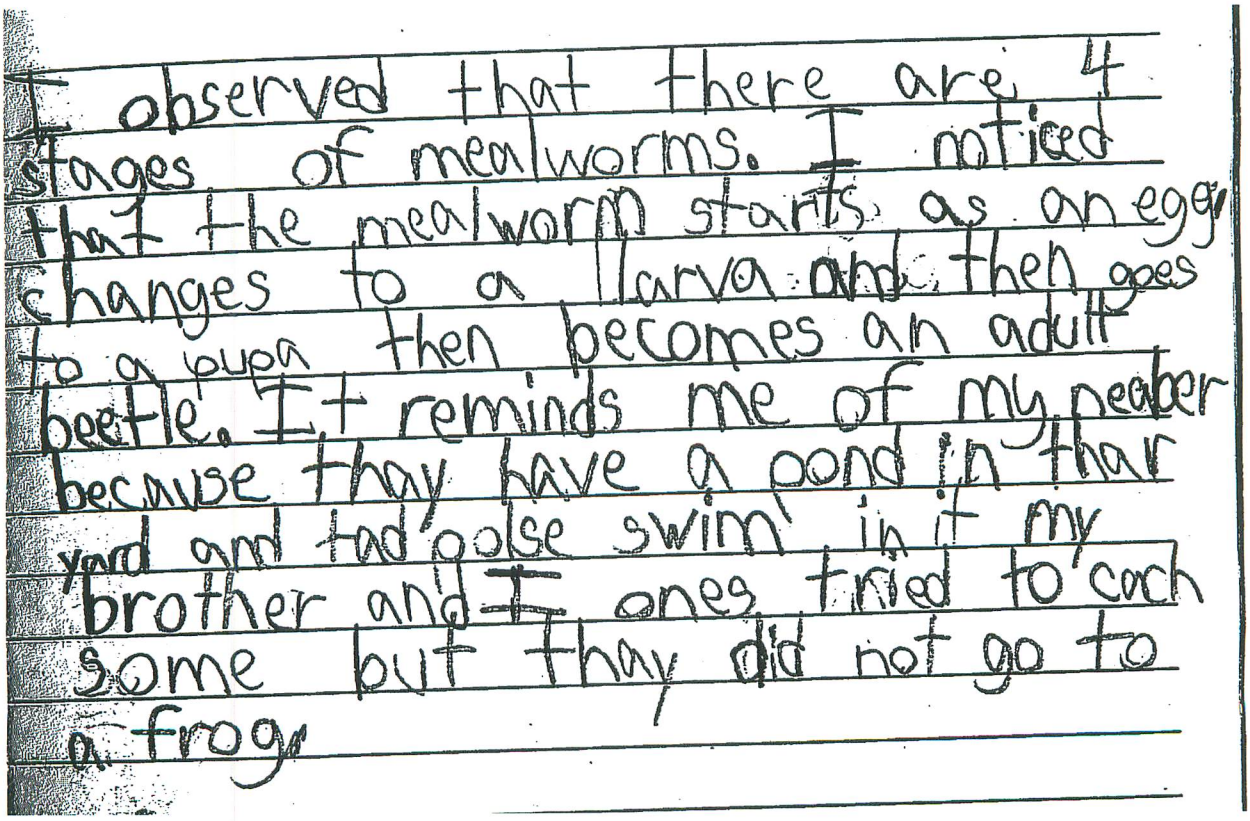
Mrs. Pearce

Students observed and charted the behaviors of a meal worm going through different stages. Then they wrote an observation product.



What are the behaviors of a meal

Larva	Pupa	adult
burrowing	not moveing	moves
Squrem	litel move	Crawls
move	not eating	fast
wigel	molting	Stripe on back
eat apple	Skin becomes	eat
	See throuth	dig
		burrow
		Change color
		coler



I observed that there are 4 stages of mealworms. I noticed that the mealworm starts as an egg changes to a larva and then goes to a pupa then becomes an adult beetle. It reminds me of my neaber because thay have a pond in thar yard and tad poles swim in it my brother and I ones tried to catch some but thay did not go to a frog.

How is your body similar to and different from an insect body?

The human and the insect are the same because they both have heads. Also they both most importantly are living things. Further more they have eyes. In addition they have feet. they need food, water, air and space. they both need time to grow. they both eat.

The human is different from the insect because the human does not have wings, whereas the insect has wings. Also the human does not have antennas but the insect does. In addition the insect has bristles but the human does not have bristles. Further more the human has no pupa stage, where the insect has a pupa stage. theres lots of things and this is one. humans have bones, but insects do not have bones in there body. last but not least humans can talk, but insects can't talk.

The students created a box and T-Chart before writing their compare and contrast writing piece. Students compared and contrasted the human body with an insect's body.

11-2-11 2 TO 6 11

I observed the Mealworm was tan. Also, the pupa was getting whiter a week later. In addiston the Adult went to white, to brown, to black. It reminds me of Magits because they look like mealworms. When I saw the white beatle Mrs pearce said it was an adult and I saw clear wings It reaminds me of the sand at the beach because its kind of Grayish like the mealw At first the Mealworms were all Crazy but na the darkling beatle is com and not Crazy. I wonder if magits and Mealworms are in the same family?

Scientist Cali,
A scientist would really understand what the colors were at each stage in the lifecycle of your mealworms. Would another scientist know what you mean when you say the mealworms were crazy? What did you mean?
♡ Scientist Pearce

The cricket and the Painted lady butterfly are the same because they both have legs. Also, they both have a head. In addition, they both have a thorax. They are different because the cricket is tenybut the painted lady butterfly is big. Also, the cricket nos. Whereas, the painted lady butterfly flys. Furthermore the cricket has a incomplete metamorphosis and the painted lady butterfly have a c:n complete metamorphosis.

Scientist David,

It is very clear that you observed these two insects. You also understand that the cricket and butterfly have different life cycles. You say the cricket is small and the butterfly is big. Another Scientist may want to know sizes. Would it be helpful to include the centimeters? Good Work!

♡ Scientist Pearce

The Painted lady butterfly and the Cricket are the same because they both have antenna. Also, they both have Legs and they both Lay eggs. In addition, they also start as eggs. They are different because the Painted lady butterfly is red and Orange and Cricket is brown. Also the Painted lady butter has dots on it and the cricket has lines. Furthermore the cricket can hop but the Painted lady butterfly can fly and it eats oatmeal but the Cricket eats carrots and salads

Scientist Mala,

It is very clear that you understand how two insects are alike and different. You also added more details at the end. Are we sure the butterfly eats oatmeal? Should we research the ingredients that the science company sent us? Let me know what you think.

♡ Scientist Pearce

Third Grade

Structures of Life

Mrs. Allen

Mrs. Bliven

Mrs. Vocatura

What is the life cycle of a seed?

The first step of the life cycle of a seed, is a dry dorment seed. The second step of the life cycle of a seed is the seed is germinating. The third step is the water is causing the seed coat to crack open and the embryo to come out. The cotyledon is the food for the embryo. I wonder how the roots get so long.

The third step is a seedling. It grows longer roots, leaves, and a stronger stem.

In the fourth step it's a plant with bigger roots and stem, and many leaves.

In the fifth step the plant grows flowers and they start to sprout. The flowers need to by pollinated for the plant to bloom.

The sixth step the flower buds turn into fruit because they were pollinated and the flowers bloomed.

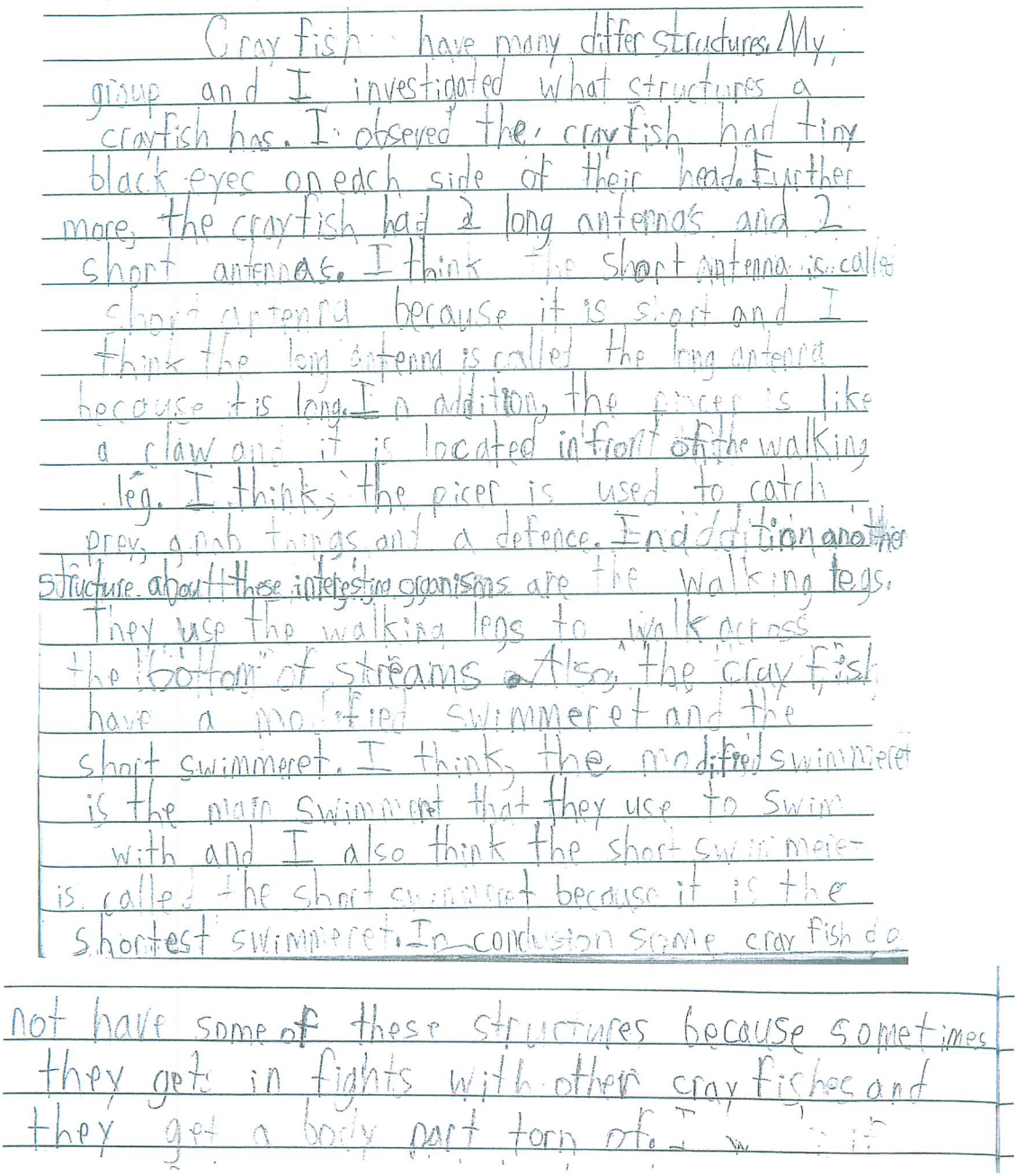
In the seventh step the fruit falls off of the plant.

In the eighth step all of the seeds fall out of the fruit and plants more plants and the germination starts all over again. The seeds turn in to dry dormant seeds.

Students grew, observed, and measured bean plants in hydroponics containers in the classroom. Students used their observational data to explain the life cycle of the bean plant.

Michaela A.

Grade 3



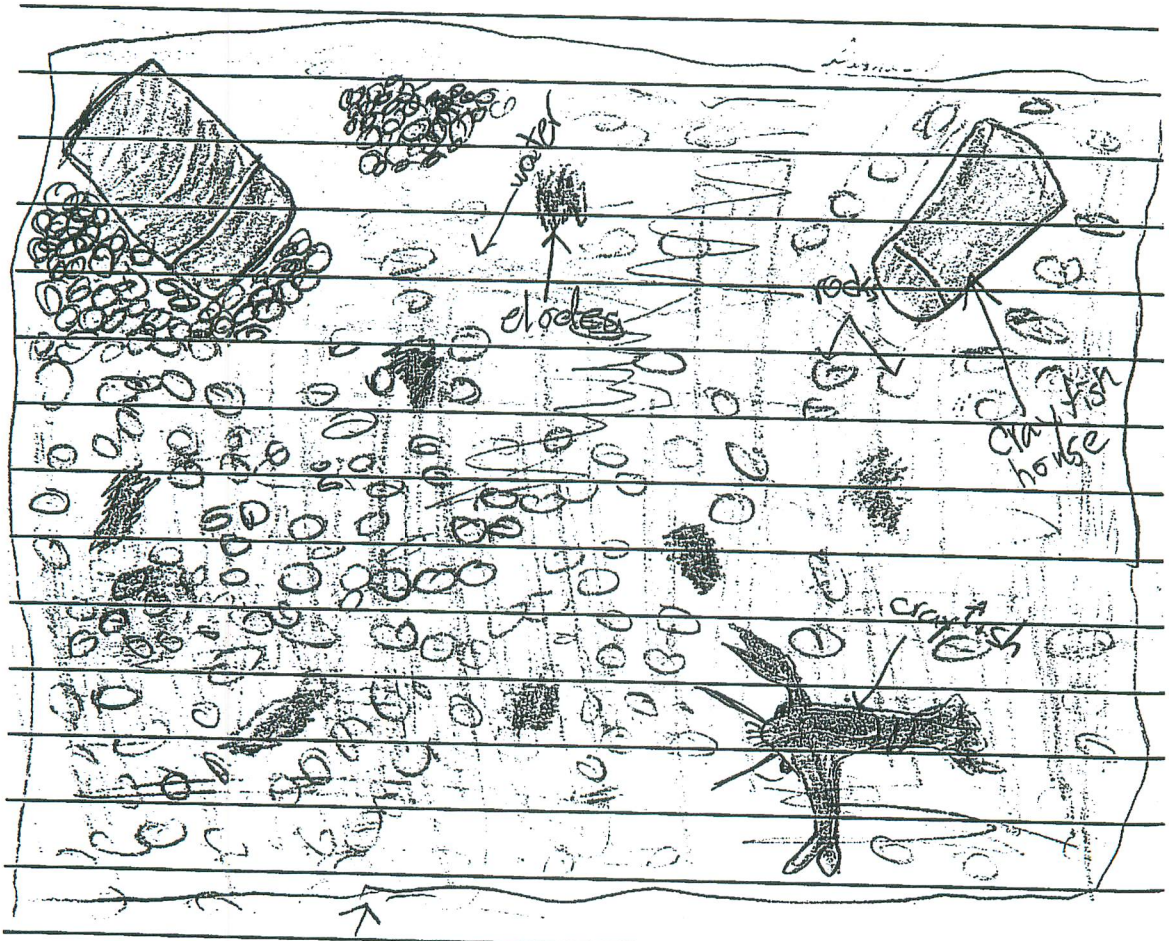
Crayfish have many differ structures. My group and I investigated what structures a crayfish has. I observed the crayfish had tiny black eyes on each side of their head. Further more, the crayfish had 2 long antennas and 2 short antennas. I think the short antenna is called short antenna because it is short and I think the long antenna is called the long antenna because it is long. In addition, the picer is like a claw and it is located in front of the walking leg. I thinks the picer is used to catch prey, grab things and a defence. In addition another structure about these interesting organisms are the walking legs. They use the walking legs to walk across the bottom of streams. Also, the cray fish have a modified swimmeret and the short swimmeret. I think the modified swimmeret is the main swimmeret that they use to swim with and I also think the short swimmeret is called the short swimmeret because it is the shortest swimmeret. In conclusion some cray fish do not have some of these structures because sometimes they get in fights with other cray fishes and they get a body part torn off.

William made accurate and full observations with complete records. He also was able to draw reasonable inferences from data and supported inferences with reasoning. William used scientific vocabulary accurately while identifying the structures of a crayfish.

William L.

Grade 3

43F EQ: What is crayfish behavior in their territory?



Crayfish habitat

When I poked at the crayfishes pincer with the spoon, the crayfish grabed the spoon and then went into one of the houses and curld up its tail.

11-2-2011 1

Crayfish behave in many different ways when in their territory. I observed the crayfish used it's pincer to grab a plastic spoon and then went in to it's crayfish house. The crayfish behaved like this when I poked at it's pincer with a plastic spoon. I think the crayfish did this because it was trying to defend it's self.

In addion, the crayfish also hid under the crayfish house. The crayfish did this when we put the crayfish house in it's habitat. I think the crayfish did this because it was loud in the class room and the cray fish wanted to feal safe from pretiters. My evidence is that when ever it was loud in the class room the crayfish would scery in to the cray fish house and I think the cray fish thought my group and I were pretiors. In conclusion, all crayfish behave in different ways while in their territory.

In Samantha's observational writing, she supported her explanations with appropriate data about her investigations with crayfish and its behavior. The class first wrote a shared writing piece about the crayfish behavior. Then, while using accurate scientific vocabulary, Samantha was able to make and draw reasonable inferences from her data about the behavior of a crayfish and supported her explanations.

Samantha S.

Grade 3

11/15/11

61°F

The structures and functions of a crayfish are similar and different to other animals. The crayfish and the bird are similar because they both have 3 body parts. I think the 3 body parts are a head, thorax, and abdomen which is used to store food in it's abdomen because an abdomen is a stomache.

They are different because the crayfish has pincers, but the bird has a beek to eat food and picks it up. I think the pincers and the beek are used to eat food and picks it up because what would the bird and crayfish eat with? In addition, a crayfish has to stay under water but they can stay on land for about one minute, but the bird can stay on land and can swim in water.

In conclusion, crayfish have similar and different structures and functions when compared to a bird.

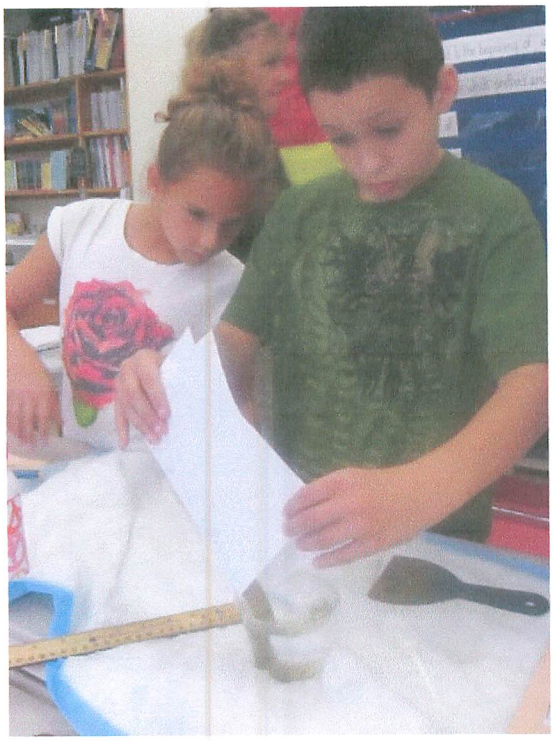
After making full and accurate observations about the structures and functions of a bird and a crayfish, she accurately followed the scientific frame with appropriate data that supported her explanations. Spencer was able to show logical connections to real-world science content.

Spencer S.

Grade 3

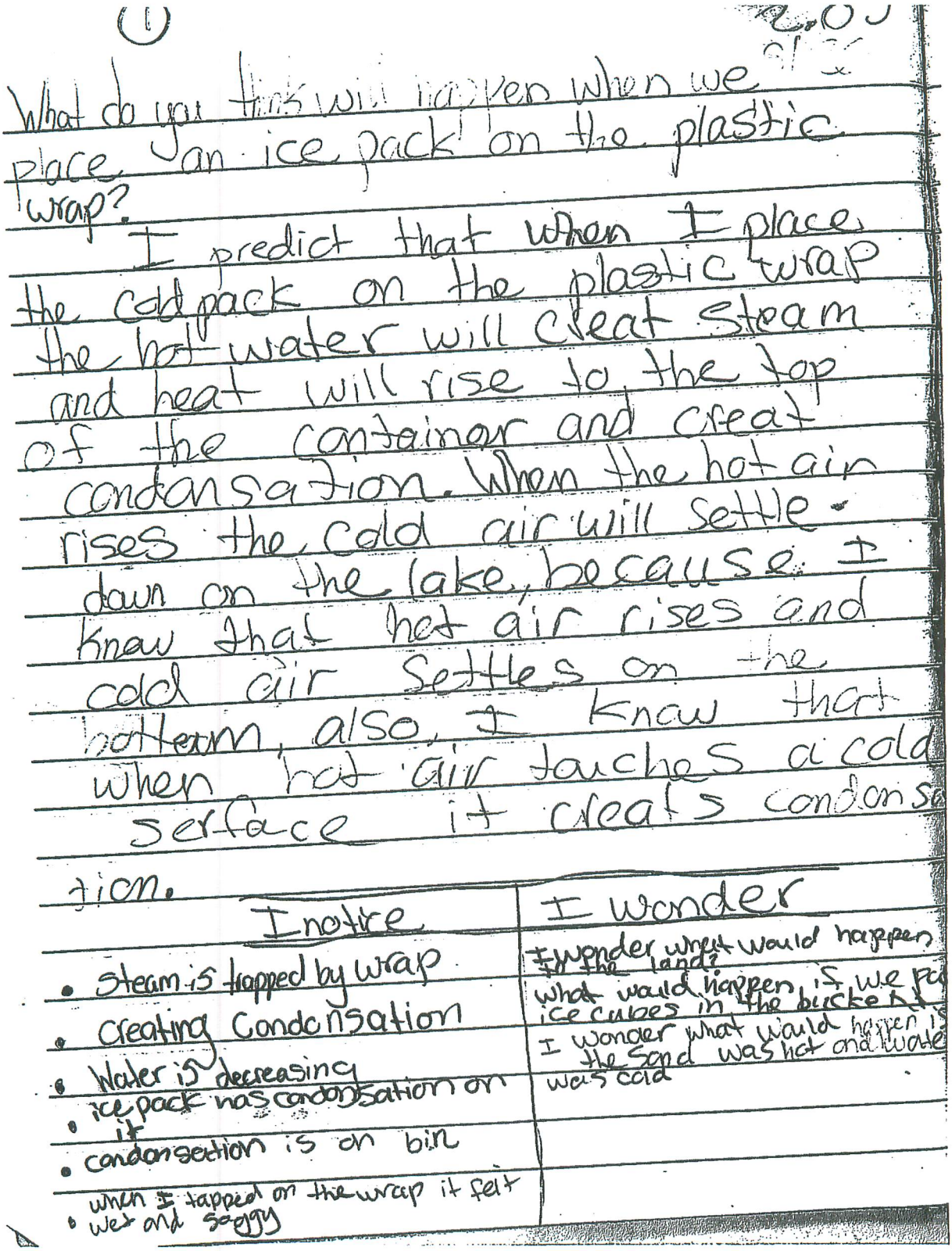
Fourth Grade

Land and Water



Mrs. Ornburn

Mrs. Young



(1)

What do you think will happen when we place an ice pack on the plastic wrap?

I predict that when I place the coldpack on the plastic wrap the hot water will creat steam and heat will rise to the top of the container and creat condensation. When the hot air rises the cold air will settle down on the lake, because I know that hot air rises and cold air Settles on the bottom, also, I know that when hot air touches a cold serface it creats condensation.

I notice	I wonder
• steam is trapped by wrap • creating Condensation • Water is decreasing • ice pack has condensation on it • condensation is on bin • when I tapped on the wrap it felt wet and saggy	I wonder what would happen to the land? what would happen if we put ice cubes in the bucket I wonder what would happen if the sand was hot and water was cold

In this early lesson from the Land and Water kit, students modeled the water cycle using a cold ice pack and hot water. Students were asked to predict what would happen in their stream tables. In Haley's prediction, she applied previous learning from the third grade Water kit and used scientific vocabulary to explain her thinking.

Haley S.

Grade 4

Haley Sawyer

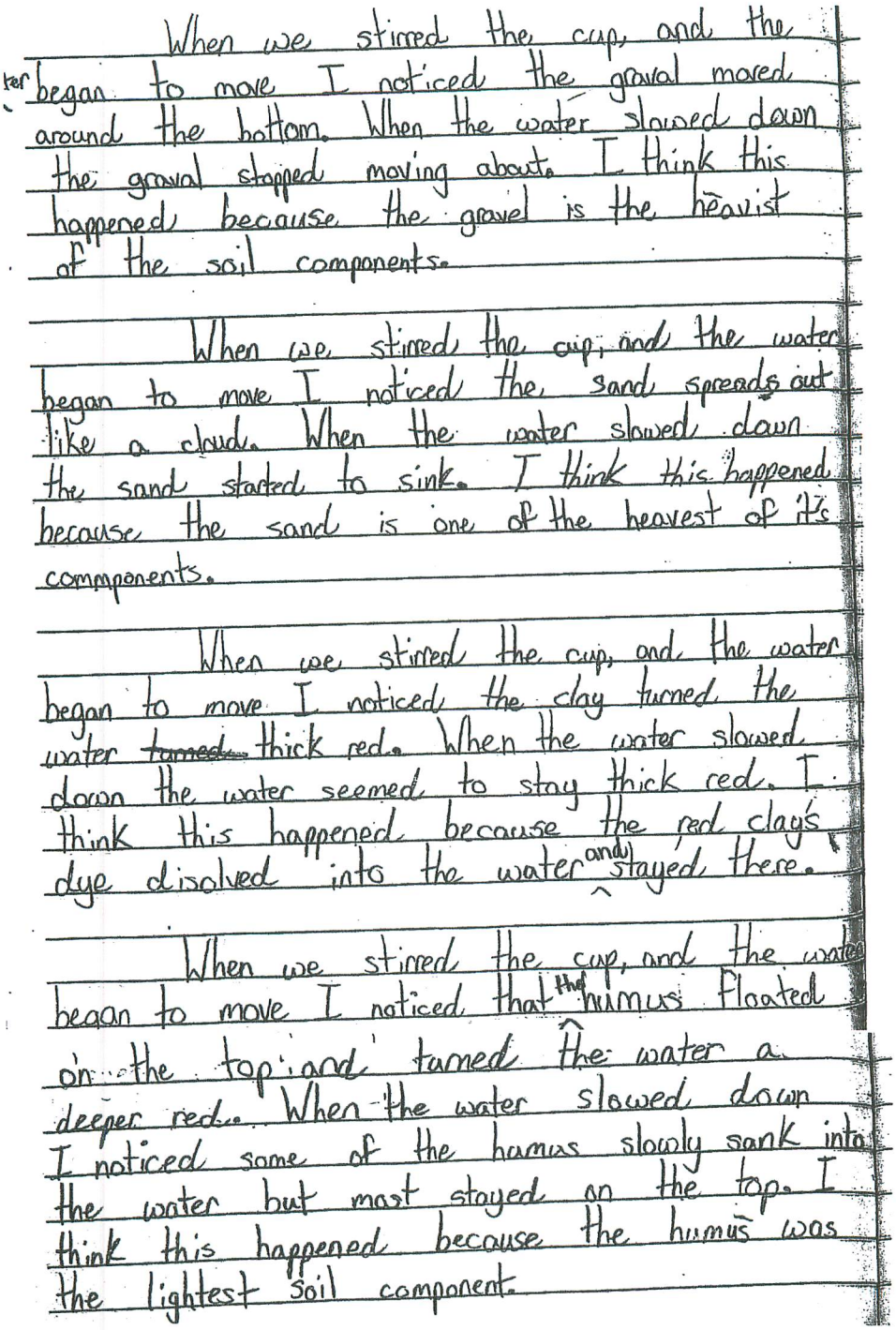
Examining Earth Materials

HALEY	Gravel	Sand	Clay	Humus
Appearance (how it looks: color, shine, clumping)	all different colors (mostly white) Shiny no shape small	beige sparkles no shape small particles	red shiny clump rocky Dull	Black chunky smooth small
Texture (how it feels)	bumpy Dull rough hard	it ~~feels~~ smooth clumps fine	bumpy rough hard Rocky	smooth Powdery soft moist chunky (Chunks)
What it does when you put it in water	the gravel sank to the bottom	the sand floated and sank it made the water dirty	the clay made the water red and the clay sunk to the bottom	the Humus floated and sunk to the bottom
What it does when you stir the water	the grave just mixed and but the gravel didn't float stayed on the bottom	the sand is sinking towards the bottom and floating	the clay got mixed up into the soil	The Humus turned into smaller pices and some sunk
Other observations	stayed on bottom	foggy cloudy	Looked like Soup	

In this investigation, students were asked to carefully observe the properties of the four soil components – gravel, sand, clay, and humus. They were then asked to pour the components into water and observe what happens when the water was stirred and then allowed to slow down. Haley made accurate and full observations and recorded her data carefully.

Haley S.

Grade 4



When we stirred the cup, and the water began to move I noticed the graval moved around the bottom. When the water slowed down the graval stopped moving about. I think this happened because the gravel is the heavist of the soil components.

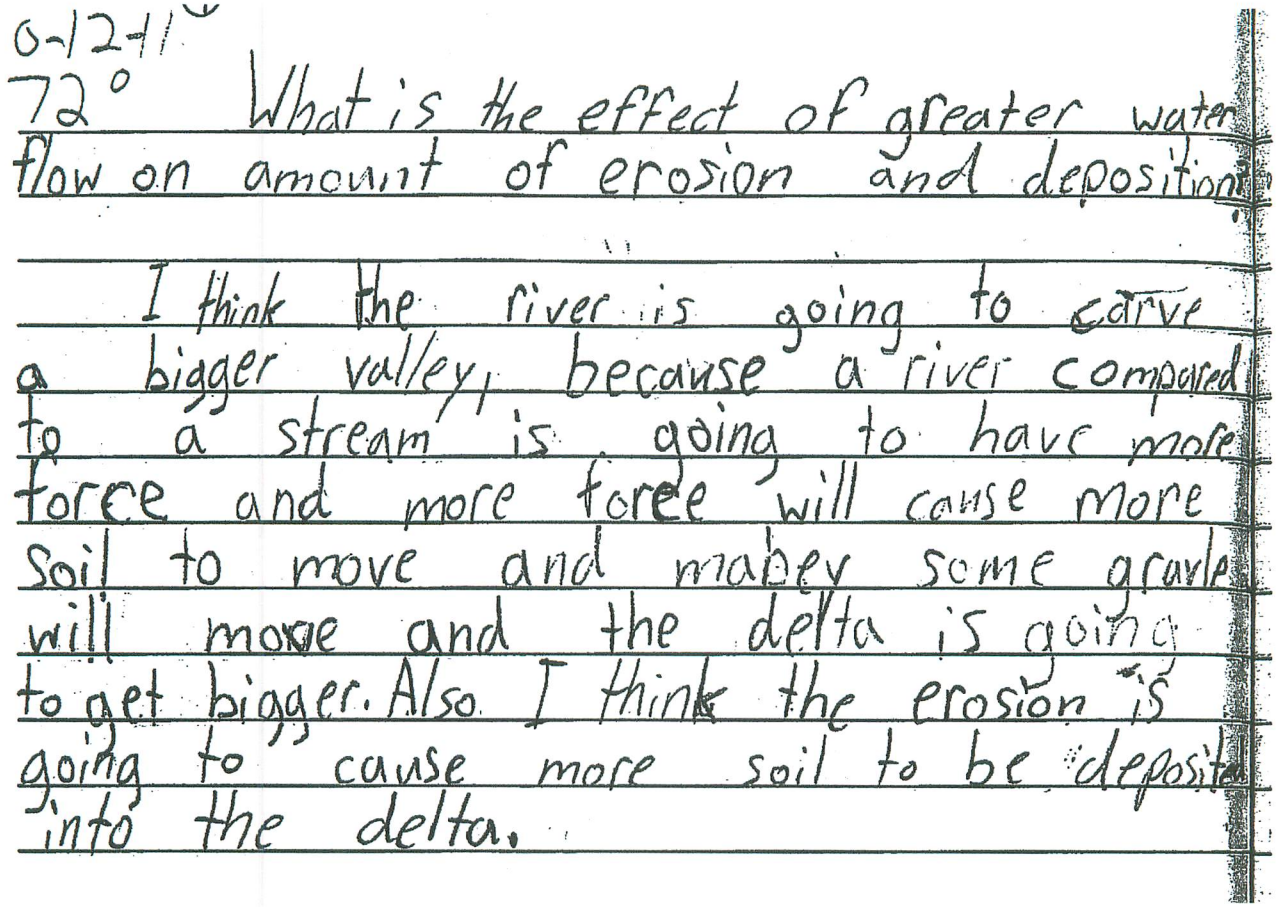
When we stirred the cup, and the water began to move I noticed the sand spreads out like a cloud. When the water slowed down the sand started to sink. I think this happened because the sand is one of the heavest of it's components.

When we stirred the cup, and the water began to move I noticed the clay turned the water ~~turned~~ thick red. When the water slowed down the water seemed to stay thick red. I think this happened because the red clay's dye disolved into the water and stayed there.

When we stirred the cup, and the water began to move I noticed that the humus floated on the top and turned the water a deeper red. When the water slowed down I noticed some of the humus slowly sank into the water but most stayed on the top. I think this happened because the humus was the lightest soil component.

After completing the investigation, students were asked to write about their observations. Noelle stated her information clearly and developed her writing with relevant details to support her thinking. She made reasonable inferences and supported her inferences with appropriate reasoning.

Noelle S.



In this investigation, students used a large-holed cup to create a rushing river in their stream tables. The large –holed cup caused a greater water flow. Students observed what happened and compared their results to an earlier investigation using a small-holed cup with less water flow. Hanna's prediction shows that she is applying previous learning to a new problem. She also used science vocabulary to effectively explain her thinking.

Hanna B.

Grade 4

I think the greater amount of water flow the more erosion. I have observed that in the basic stream the ... water flow was slower than the rushing river the rushing river had more force. The Rushing river had a wider stream for example the basic Stream was 6 cm. and the rushing river was 7 cm. wide. Greater water flow seemed to cause more soil to be eroded. In conclusion, I think the rushing river had more force than the basic stream. Therefore I think the basic stream had alot less force.

I think more soil was deposited at the delta the delta was much bigger than the basic stream in the rushing rive For example the width of the delta in the basic stream was 12 cm and in the rushing river was 13 cm. I have obsern that more soil was droped off in the lake in the rushing river than the basic stream.

greater water flow seemed to cause gravle in the delta but in the basic strea there was no gravle because there was more water force in the rushing river than the basic stream. I also noticed that in my runoff there was more soil in the delta in my rushing river and there was less soil in my basic stream In conclusion, I think the more force the more soil that is going to be in the lake therefore I think the less force the less soil is going to be in the runoff

After completing the investigation and recording their data, students were asked to write a conclusion about what effect a greater water flow had on the amount of erosion and deposition that occurs. Hanna's writing is logically sequenced and fully developed with relevant details. She supported her thinking with appropriate data and compared different data points to clarify her thinking.

Hanna B.

Grade 4

No rainy 5-11 11:45

I noticed the water flow made more of a canyon. Unlike the stream had a little canyon. Also the dip was bigger because the hole in the cup was bigger than the basic stream. Ther was more deposition because the stream was more powerful So it picked up more soil than the basic stream did, it also deposited more soil than the basic stream did I also noticed ther was more gravel it the delta because there was more erosion than the basic stream. I observed there was more tributaries in the curving river than in the basic stream. Last, I also noticed that There was more pices of clay in the stream bead. The with of the river changed by the water flowing fast down the stream bead caused the water to go to the rubber stoper. I wonder what would happen if I put a bigger hole in the cup. I also noticed that

Cooper used relevant, qualitative data to support his thinking. His ideas were logically sequenced, and he used accurate scientific vocabulary to clarify his ideas.

Cooper C.

Grade 4

Mason 7.0 1.4.5

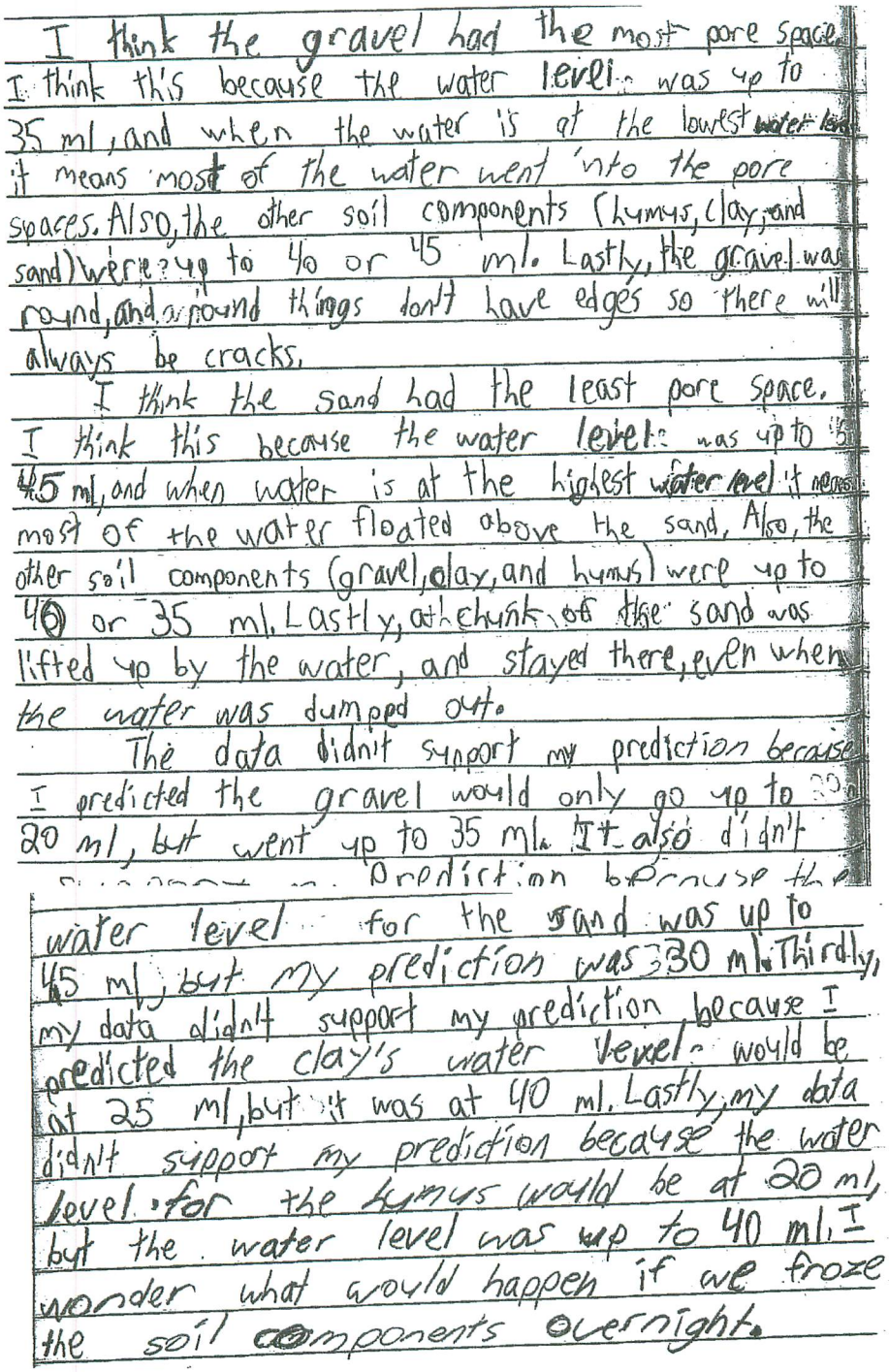
My data provided I evidence that a greater water flo does effect the amovnt of erosion and depositon. Becase sence the water flow was stronger it had more force to pickup the gravel and soil to move it farther. I now this becase I saw gravel in the delta and more soil in the run off. And I had 1 ml of soil in my run off; in my basike stream and 2ml in my rushing river and I also had a biger delta. I had 18 cm in my basice stream and 18cm in my rushing river. Also sence The hole in the cup was bigger there was more force to make a bigger dip. And I also noticed that there was more deposition decase there was more material in the lake. That is how I know

That greater water flow does effect the amovnt of erosion and deposition. And I wonder what would happen If we made a mouhtan and poured water on the top.

Mason's writing shows that he accurately used science vocabulary to explain his thinking. He also carefully examined his data and compared different data points to support his ideas.

Mason P.

Grade 4



I think the gravel had the most pore space. I think this because the water level was up to 35 ml, and when the water is at the lowest water level it means most of the water went into the pore spaces. Also, the other soil components (humus, clay, and sand) were up to 40 or 45 ml. Lastly, the gravel was round, and round things don't have edges so there will always be cracks.

I think the sand had the least pore space. I think this because the water level was up to 45 ml, and when water is at the highest water level it means most of the water floated above the sand. Also, the other soil components (gravel, clay, and humus) were up to 40 or 35 ml. Lastly, a chunk of the sand was lifted up by the water, and stayed there, even when the water was dumped out.

The data didn't support my prediction because I predicted the gravel would only go up to 20 ml, but went up to 35 ml. It also didn't support my prediction because the water level for the sand was up to 45 ml, but my prediction was 30 ml. Thirdly, my data didn't support my prediction because I predicted the clay's water level would be at 25 ml, but it was at 40 ml. Lastly, my data didn't support my prediction because the water level for the humus would be at 20 ml, but the water level was up to 40 ml. I wonder what would happen if we froze the soil components overnight.

In this investigation, students tested the pore space of the different soil components by pouring water into graduated cylinders that contained each of the 4 soil components, and then measured the level of the water. Students then had to write a conclusion based on the data they collected. Connor logically sequenced his writing and used appropriate transition words to explain his thinking. He provided appropriate data to support his idea and he used accurate scientific vocabulary.

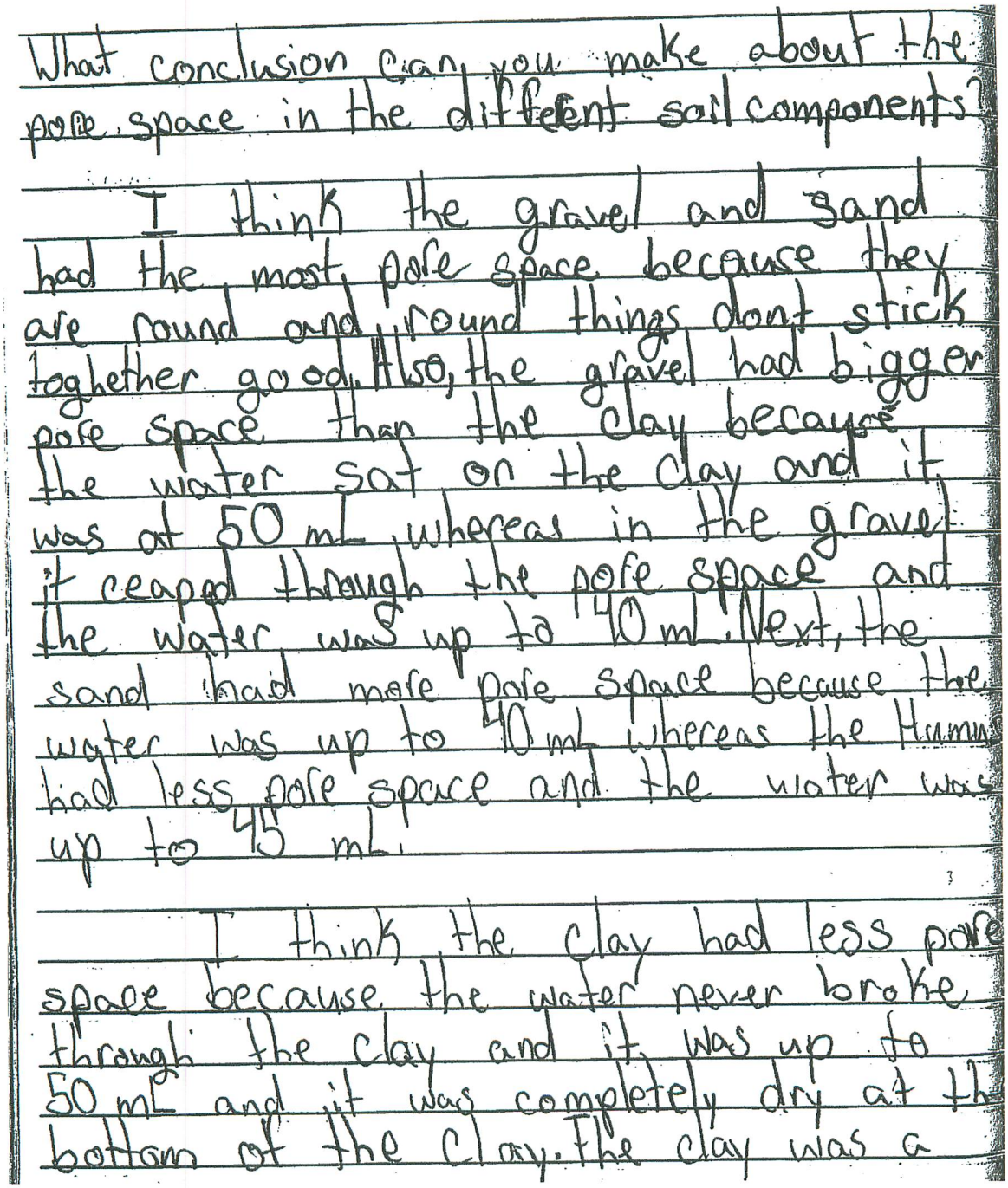
Connor M.

Grade 4

Anna demonstrated the understanding of the relationship between data and inference. She supported her thinking with relevant details, and used appropriate transition words to show logical connections. Her work continues on the next page.

Anna H.

Grade 4



What conclusion can you make about the pore space in the different soil components?

I think the gravel and sand had the most pore space because they are round and round things dont stick toghether good. Also, the gravel had bigger pore space than the clay because the water sat on the clay and it was at 50 mL whereas in the gravel it ceaped through the pore space and the water was up to 40 mL. Next, the sand had more pore space because the water was up to 40 mL whereas the Humus had less pore space and the water was up to 45 mL.

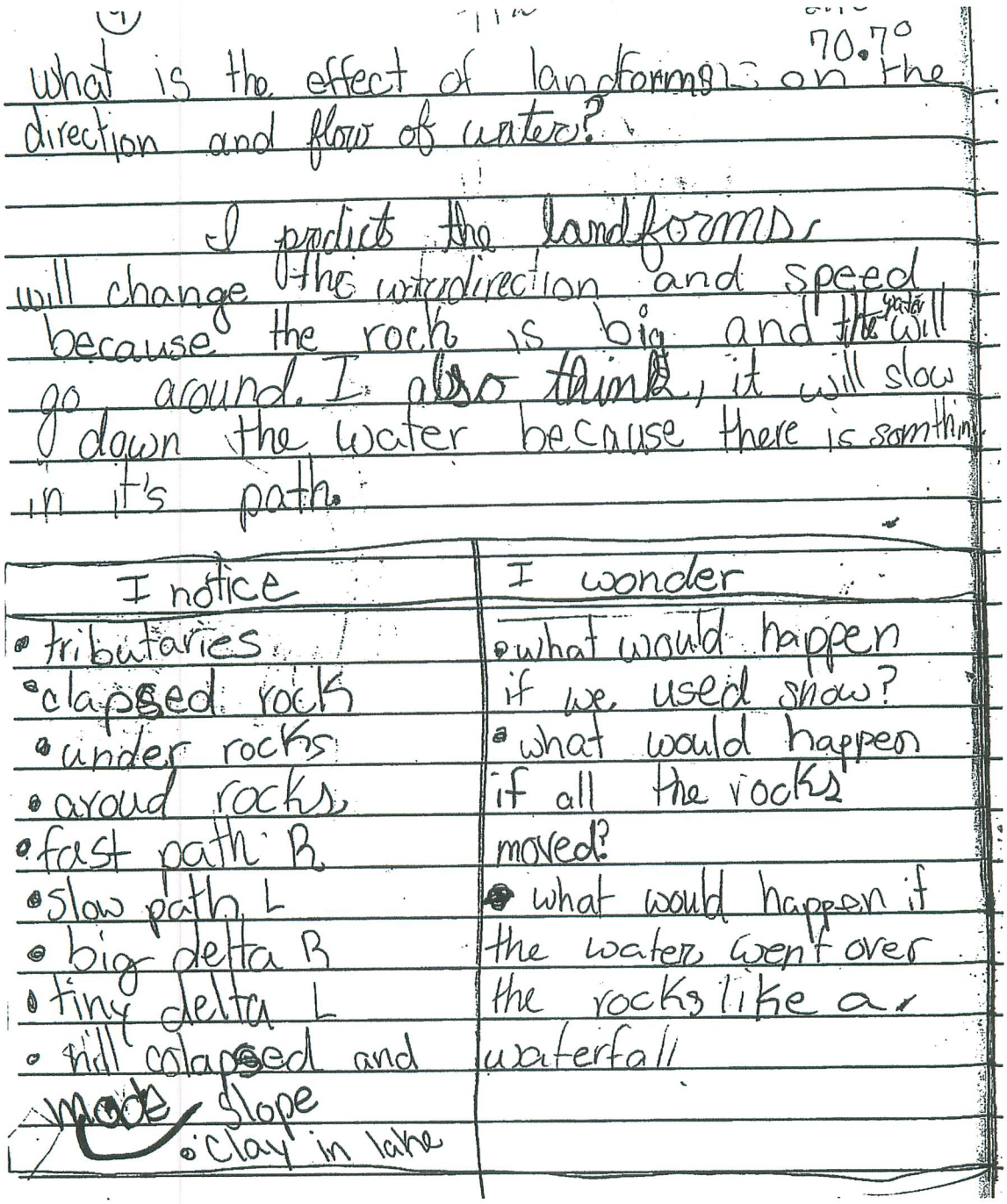
I think the clay had less pore space because the water never broke through the clay and it was up to 50 mL and it was completely dry at the bottom of the Clay. The clay was a

flat shape. Also, the humus had Less pore space because the water was up to 45 mL. The shape of the humus was flat and small. Also barely any water got through the humus to the bottom.

The data did support my prediction because I thought the gravel and sand would not have the water up to 50 mL because there is lots of pore space. Also, when I poured the water on the clay, it stayed on the top of the clay. Also, the water in the humus stayed on and ceaped under the humus. Also, the water on the humus was up to 45 mL. Lastly, I thought None of the water was going to break through the clay and it didn't.

In conclusion, this is the amount of pore space in each components that are gravel, sand, clay, and humus.

Therefore I think that pore space can Make the water seap through the spaces and hit the bottom of the graduated cylinder.



What is the effect of landforms on the direction and flow of water?

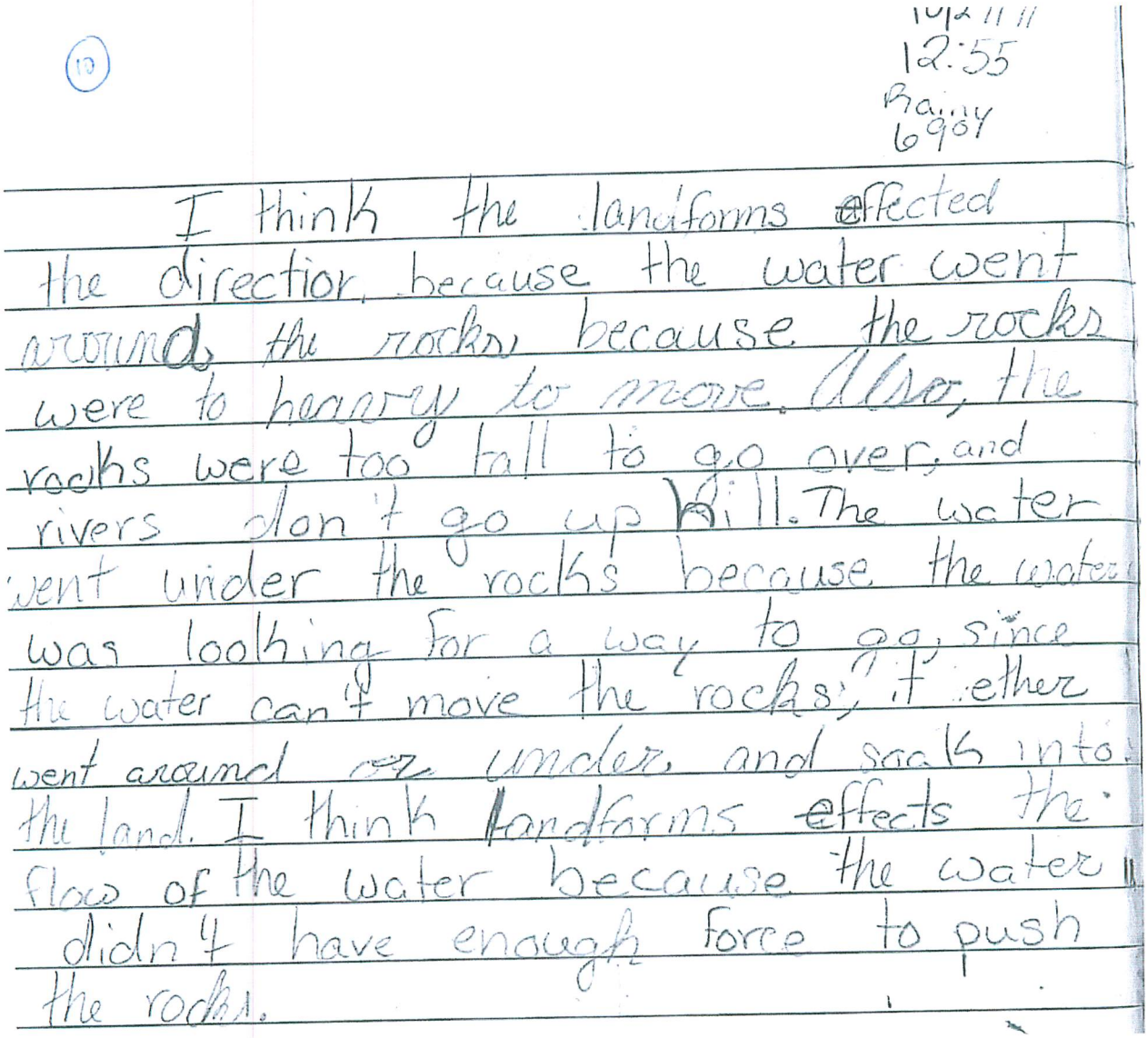
I predict the landforms will change the water direction and speed because the rock is big and the water will go around. I also think, it will slow down the water because there is somthing in it's path.

I notice	I wonder
• tributaries • elapsed rock • under rocks • around rocks • fast path R • slow path L • big delta R • tiny delta L • hill collapsed and made slope • clay in lake	• what would happen if we used snow? • what would happen if all the rocks moved? • what would happen if the water went over the rocks like a waterfall

In this investigation, students created obstacles in their stream tables using rocks and hills. They predicted what effect these landforms would have on the direction and flow of water. Tia's prediction and data collection show that she is using previous learning to apply to new situations and she carefully collected and recorded her observations.

Tia S.

Grade 4


10/2 11 11
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Rainy
6967

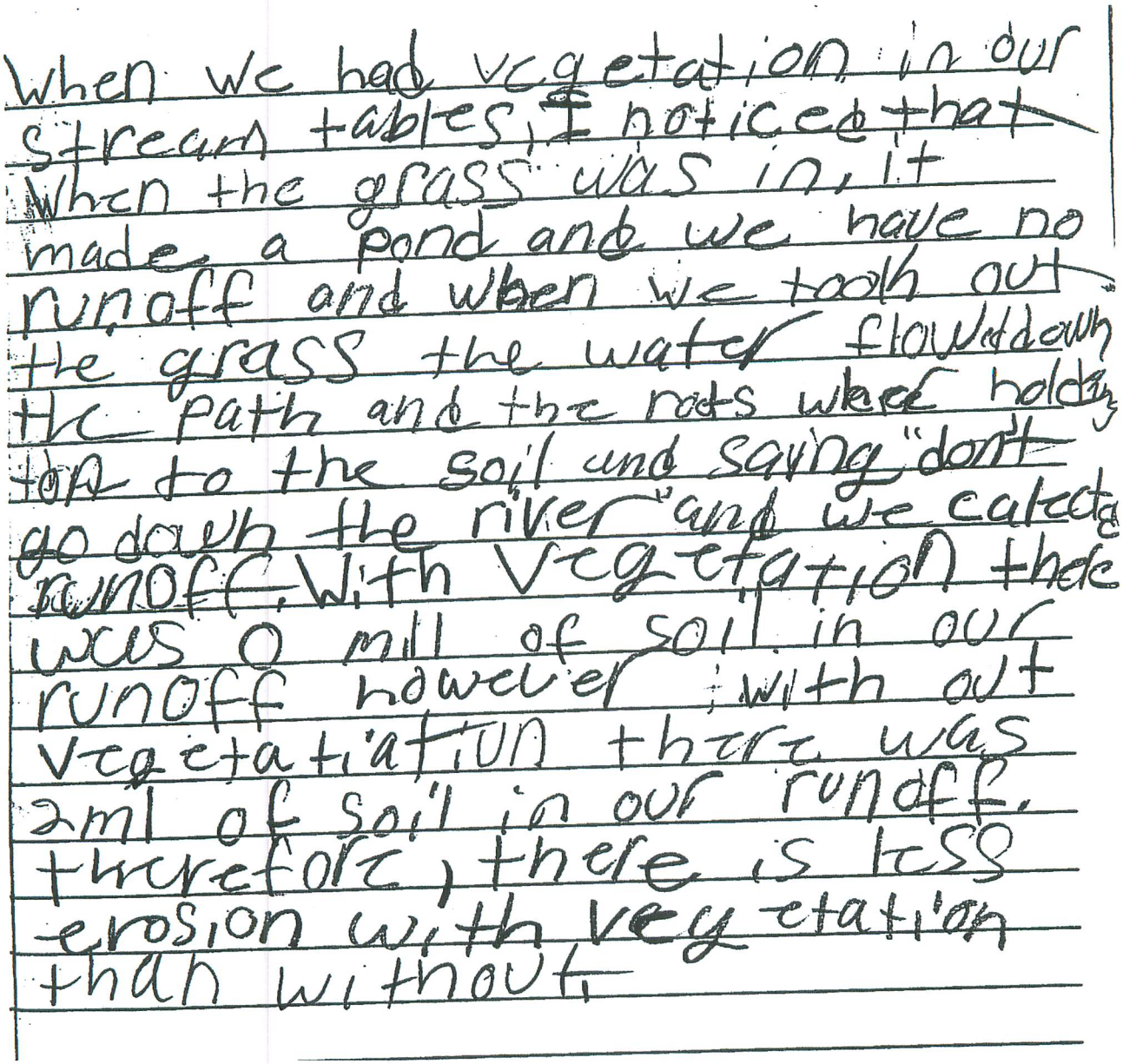
(10)

I think the landforms effected the direction, because the water went around the rocks, because the rocks were to heavy to move. Also, the rocks were too tall to go over, and rivers don't go up hill. The water went under the rocks because the water was looking for a way to go, since the water can't move the rocks, it either went around or under, and soaks into the land. I think landforms effects the flow of the water because the water didn't have enough force to push the rocks.

After completing the investigation, students were asked to write about their observations. Tia's ideas are written clearly with appropriate transition words. She supported her ideas with appropriate data and made reasonable inferences about her observations.

Tia S.

Grade 4



In this investigation, students planted vegetation in their stream tables. They compared the amount of soil in the runoff with vegetation and then without vegetation. Topaz's writing demonstrates that she was able to examine her data and develop a reasonable inference.

Topaz B.

Grade 4

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