

City of Tampa Water Efficiency Education Grants

School Enrichment Classroom Grants
in Partnership With
Hillsborough Education Foundation

For More Information About City of Tampa
Water Efficiency Education Grants:

www.educationfoundation.com

or

www.tampagov.net/water-

2011 Project: Mobile Water Lab, \$500

Ms. Geurts - First Grade - Muller Elementary



**Exploring capacity with
our mobile water lab**







School Enrichment Grant Evaluation

Evaluation Report

TARGET POPULATION:

This project impacted 45 first grade students at a Title 1 Magnet School. These materials not only increased their understanding of water related topics, but the materials contained in the lab were able to be switched out to meet specific grade level and classroom needs. For instance, when the first grade was studying the Everglades, trays of water and sponges were added and provided students with hands on simulation of water absorption and filtration in swamplands. These materials will continue to support first grade students at this site in following years.

BACKGROUND/NEED:

The next Generation Sunshine State Science Standards are limited in number so that each topic can be deeply explored. However, finding teaching resources such as lesson plans, read aloud texts, and student lab materials to support this depth is more challenging.

Student background knowledge on the topic of water and water conservation, as charted during large group discussion before the project revealed limited background knowledge as well as some misconceptions. In addition mini assessments also demonstrated limited understanding of capacity.

OBJECTIVES/GOALS:

At the end of the study, students will demonstrate increased background knowledge of water and water conservation issues as a result of hands on experimentation and exposure to read-aloud text, materials printed from the internet, and class discussions.

At the end of the study, students will demonstrate increased understanding of capacity as a result of hands on experimentation and exposure to read-aloud text, materials printed from the internet, and class discussions.

PROJECT ACTIVITIES/RESULTS:

The resources obtained through the grant have greatly expanded the first grade team's available science resources. This will enable the teachers to create real depth of instruction to better meet the New Generation Sunshine State Standards in Science.

The project originally included four weeks' worth of water related lesson plans (see plans attached). Due to some delays in the processing of funding, this schedule was compressed. The lessons were all carried out over a two week period and resources were borrowed until the ordered materials arrived so that the Evaluation Report could be submitted in a timely fashion.

The water lab was a big hit with students. Photographs enclosed show the students in action. The hands-on nature of the experimentation with capacity led students to a deeper understanding and a 28% increase on post-test scores.

Exposure to read aloud texts and technological resources expanded student understanding of water related topics. There was a 500% increase in background facts that students were able to report on.

Materials List for Mobile Water Lab:

School Specialty:

090670 Liquid measuring set (4 at \$25.79)	\$103.16
067604 Plastic test tubes	\$9.99
Total	\$113.15

Fisher Science:

S79228 Science Teacher's books of lists	\$35.00
S79205 Liquid Exploration	\$23.40
S79033 Quantum Big Screen microscope (4 at \$12.95 each)	\$51.80
S79239 Hands on Science Activities	\$38.25
S79235 Hands on Earth Science	\$35.45
Total	\$183.90

Scholastic:

141156 Conservation: Our Earth: Saving Water	\$4.17
387443 Where do Puddles Go?	\$2.97
894509 Gulf Of Mexico	\$14.35
438377 Everglades	\$14.35
122399 Excel Workshop	\$35.00
Total	\$70.84

Heinemann:

9781403478832 What Living Things Need	\$16.50
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Combined total \$403.89

Date	Mon. 5/9	Tues. 5/10	Wed. 5/11	Thurs. 5/12	Fri. 5/13
Math	<p>Skill: Students will measure using units of capacity and order those objects according to capacity. They will record any observations that they make with their group in math journals.</p> <p>Materials: spill over tray, large container of water, cup, pint, quart, and gallon containers, labeled, student math journals</p> <p>Assessment: math journal performance</p> <p>Sunshine State Standards:</p> <p>SS. MA.1.G.5.2</p> <p>SS: MA1.G.5.1</p>	<p>Skill: Students will discuss their observations of measurement using units of capacity and ordering of those objects according to capacity.</p> <p>Materials: student journal entries from yesterday and chart paper to record group observations.</p> <p>Assessment: Student participation during group discussion</p> <p>Sunshine State Standards:</p> <p>SS. MA.1.G.5.2</p> <p>SS: MA1.G.5.1</p>	<p>Skill: Students will explore measurement using units of capacity and ordering of those objects according to capacity.</p> <p>Materials: The Gallon Song for overhead, "gallon man" image for overhead, gallon "head" copies and 3 different colored sheets of paper per student. Index cards for exit notes</p> <p>Assessment: student exit card on what they have learned.</p> <p>Sunshine State Standards:</p> <p>SS. MA.1.G.5.2</p> <p>SS: MA1.G.5.1</p>	<p>Skill: Students will explore measurement using units of capacity and ordering of those objects according to capacity. Students will measure and compare standard and non standard units of capacity and record what they have learned in their journals.</p> <p>Materials: standard capacity units, jars, cups, plastic containers, etc., large containers of water and spill trays</p> <p>Assessment: math journal performance</p> <p>Sunshine State Standards:</p> <p>SS: MA.1.G.5.2</p> <p>SS: MA1.G.5.1</p>	<p>Skill: Students will demonstrate their understanding of units of capacity and ordering of those objects according to capacity.</p> <p>Materials: Capacity assessment handout</p> <p>Sunshine State Standards:</p> <p>SS. MA.1.G.5.2</p> <p>SS: MA1.G.5.1</p>

Date	Mon. 5/9	Tues. 5/10	Wed. 5/11	Thurs. 5/12	Fri. 5/13
Science	<p>Skill: Students will recognize that water is found on the Earth's surface and the need for water.</p> <p>Materials: Read Aloud Text Water by Frank Asch, chart paper for recording new knowledge by group and drawing paper for students to make a poster about what they think is most important about water.</p> <p>Assessment: Student participation on group discussion and poster.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and the need for water.</p> <p>Materials: Read Aloud Text I am Water by Jean Marzollo, chart paper for recording new knowledge by group and science journals</p> <p>Assessment: Student chart in their journals about how people/, animals and plants need water.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and the stages of the water cycle</p> <p>Materials: Read Aloud Text Follow a Raindrop by Elsie Ward, chart paper for recording new knowledge and watercycle handout.</p> <p>Assessment: Participation on group discussion and student water cycle handout performance</p> <p>SSS: SC.1.E.6.1</p>	<p>Skill: Students will recognize that water is found on the Earth's surface, review the watercycle and identify how sewage and water treatment are a part of this cycle.</p> <p>Materials: 2 page illustration of watercycle (per partners) with water treatment and sewage components, index cards and chart paper to document new learning.</p> <p>Assessment: Student participation on group discussion and exit card.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface, review the watercycle and identify problems with pollutants in any stage of the water cycle.</p> <p>Materials: yesterday's watercycle illustrations and factory images.</p> <p>Assessment: partners choose a place on the illustration to add the pollutant-producing factory and report to the group the problems that would be caused.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>

Date	Mon. 5/16	Tues. 5/17	Wed. 5/18	Thurs. 5/19	Fri. 5/20
Science	<p>Skill: Students will recognize that water is found on the Earth's surface and how the weather is related to the water cycle.</p> <p>Materials: Read Aloud Text The Water Cycle, chart paper for recording new knowledge by group and "a river recycled" mini book handout.</p> <p>Assessment: Student participation on group discussion and mini book.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found in many different habitats on the Earth's surface and the need for water.</p> <p>Materials: Wetland change mini books.</p> <p>Assessment: Student performance on mini books</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and the stages of the water cycle</p> <p>Materials: Read Aloud Text Follow a Raindrop by Elsie Ward, chart paper for recording new knowledge and watercycle handout.</p> <p>Assessment: Participation on group discussion and student water cycle handout performance</p> <p>SSS: SC.1.E.6.1</p>	<p>Skill: Students will recognize that water is found in many habitats on the Earth's surface; They will compare and contrast two different types of swamps (cypress and mangrove).</p> <p>Materials: read aloud text One Small Square: Swamp and chart paper for group venn diagram</p> <p>Assessment: Student participation on venn diagram</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and understand how some plants interact with it.</p> <p>Materials: Assessment: partners choose a place on the illustration to add the pollutant-producing factory and report to the group the problems that would be caused.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>
Lab	From p. 24 of A Drop of Water: condensation exercise. (need glass and ice cubes)	Group observation of wetlands in front of the school facility (need clipboards and paper)	From p. 25 of A Drop of Water: evaporation vs. condensation (need two glasses)	From page 13 of One Small Square: Swamp , water absorption and filtration experiment (need sponges)	Filtration experiment (need soil and coffee filters)

Date	Mon. 5/23	Tues. 5/24	Wed. 5/25	Thurs. 5/26	Fri. 5/27
Science	<p>Skill: Students will recognize that water is found in many habitats on the Earth's surface; They will identify plants and animals that live in a mangrove swamp</p> <p>Materials: read aloud text One Small Square: Swamp and science journals</p> <p>Assessment: Student performance on diagrams of mangrove habitats in their journals.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and humans' need for water.</p> <p>Materials: Aqua bodies lesson plan from Project Wet, chart paper and markers</p> <p>Assessment: Student performance on exit card recording what they learned</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and the plant's need for water,</p> <p>Materials: Dried out lima bean seedling and thriving seedling to compare and contrast from window.</p> <p>Assessment: student performance on journal entry.</p> <p>SSS: SC.1.E.6.1</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and that it is a scarce natural resource.</p> <p>Materials: Water Conservation booklet from the Southwest Florida Water Management District, and paper for student rebus stories.</p> <p>Assessment: Student performance on rebus writing about water conservation</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>	<p>Skill: Students will recognize that water is found on the Earth's surface and that it is a scarce natural resource.</p> <p>Materials: 12 x 18 drawing paper for student posters</p> <p>Assessment: Student performance on posters advocating for responsible use of water.</p> <p>SSS: SC.1.E.6.1 SC.1.E.6.2</p>
Lab	<p>From p. 23 One Small Square: Swamp Mangrove prop root exploration (need pencils and pipe cleaners)</p>	<p>Aqua Maze from Project Wet booklet demonstrating how pollutants get into human water supplies. (use maze created earlier in year)</p>	<p>Water absorption experiment with colored water and white carnations</p>	<p>Water absorption experiment with colored water and celery</p>	<p>From p. 18 in A Drop of Water: Molecules in motion experiment. Need clear container and food coloring</p>



Dear City of Tampa Water Department, 2/22/11

Thank you so much for funding our portable water learning center and lab. Not only will my first graders benefit from the wonderful resources, but we will be able to share them with the other first grade classes as well. We would not have been able to provide this amazing experience for our students without your generous support!

Sincerely,

Kelly Lewis



City of Tampa Water Dept.)

I just wanted to take this opportunity to thank you for your generous support this year. Your gift enabled me to create a fully stocked water lab for my classroom. I was able to buy teacher resources, read aloud books, and hands on lab materials for my students. Since the lab is portable, I am also able to share resources easily with my first grade colleagues. My students have learned so much about water and water conservation. I look forward to sharing these materials with my future first graders as well. Thank you so much!

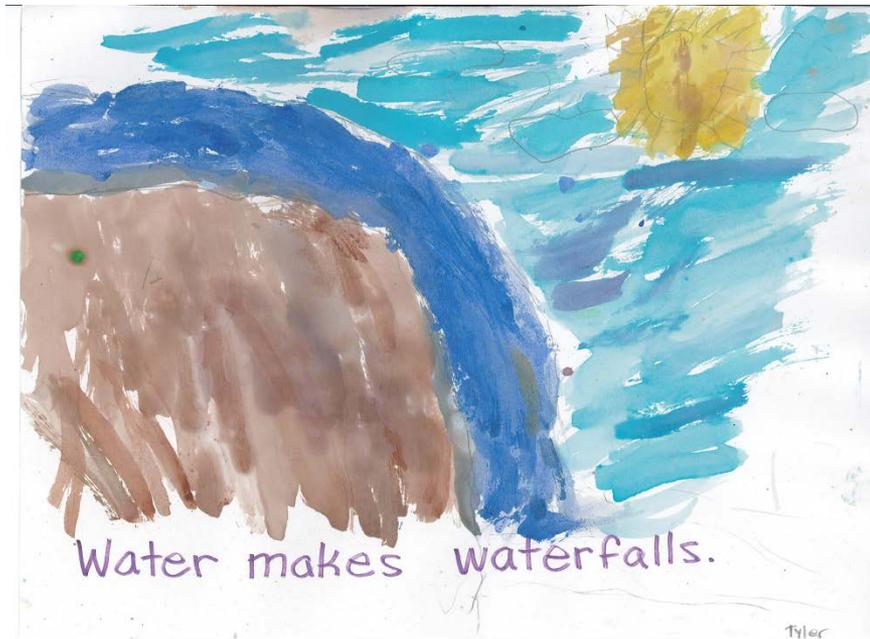
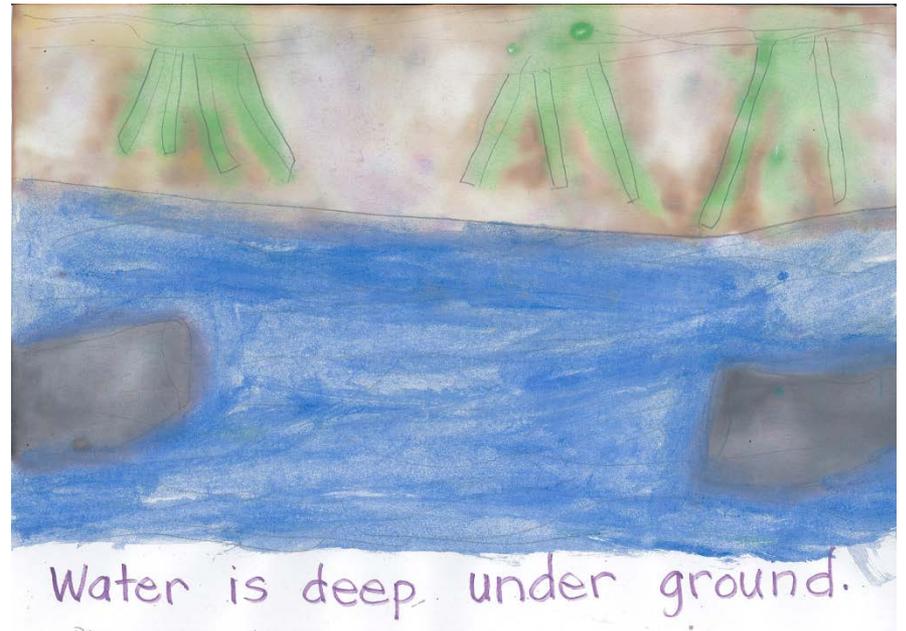
Sincerely,

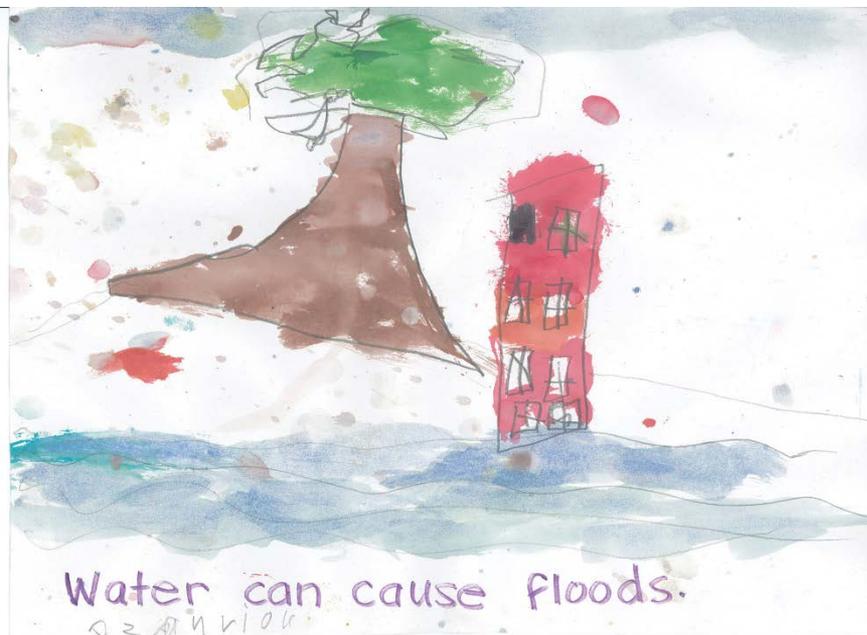
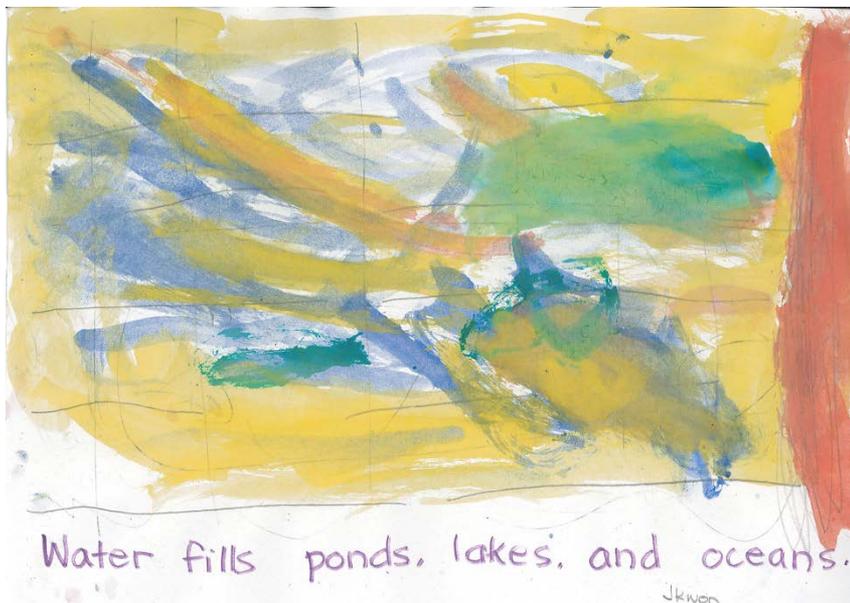
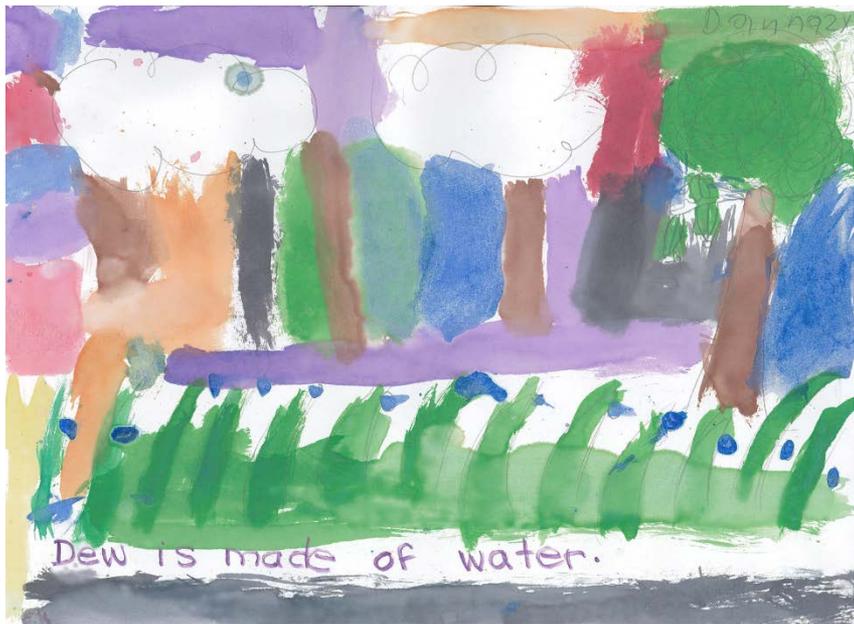
Jill Smith

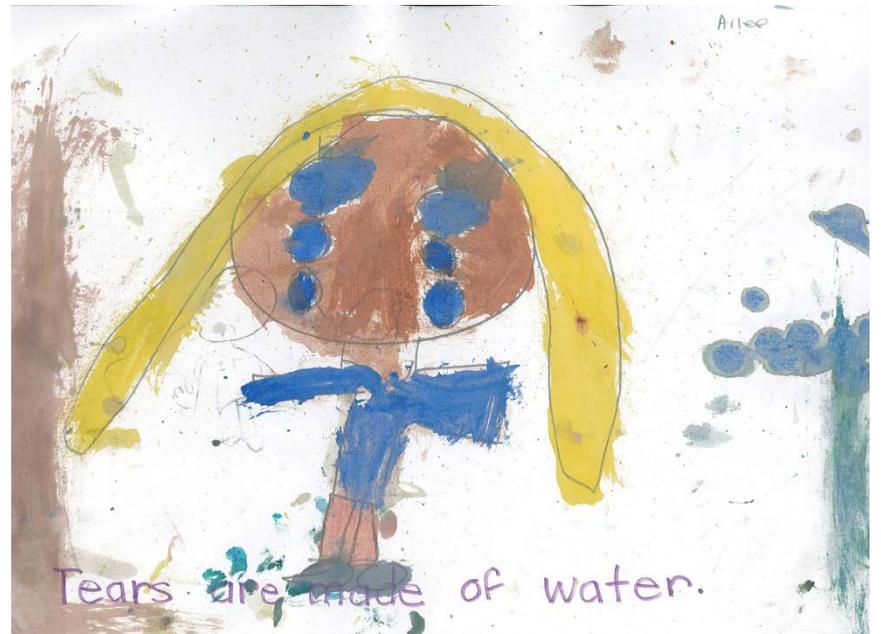
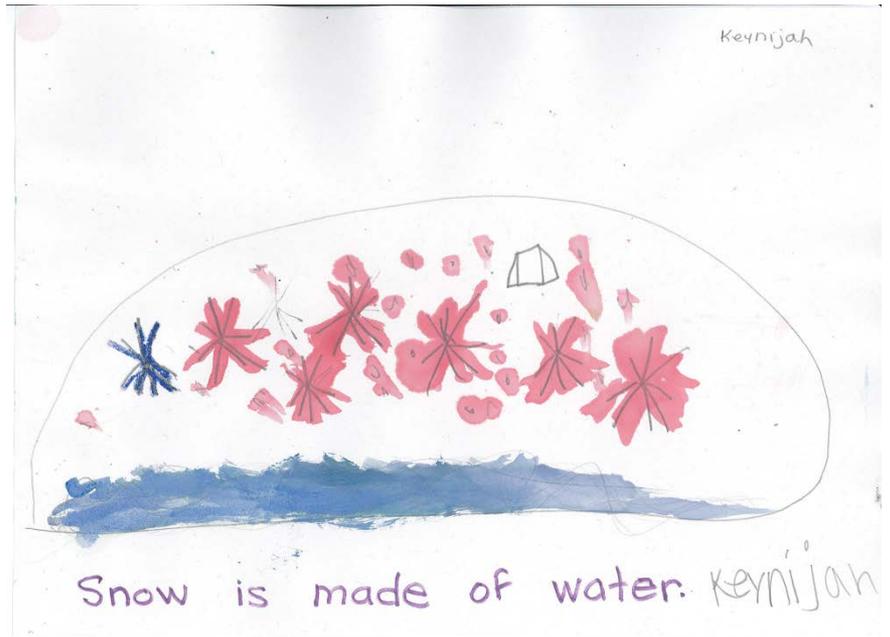
**Water is Amazing
and so are you!**

**Your kind donation has helped us learn
so much about water!**

From: Mrs. Geurts' First Graders









Dear City of Tampa Water
Department, Thank you for
your generous gift. We are
going to love our experimen
ts! Sincerely, Dannazx.



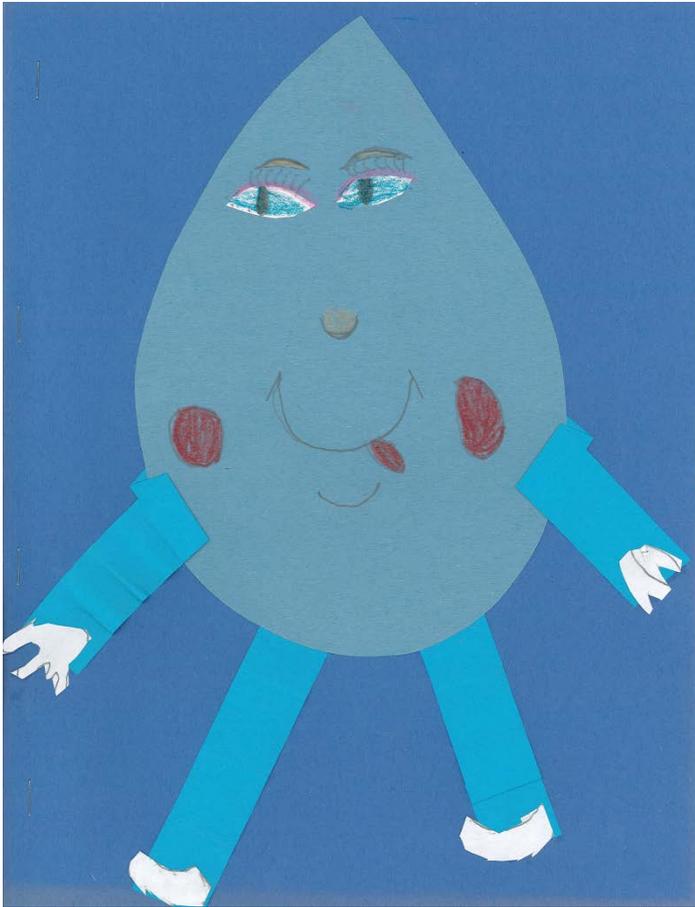
Dear Water Department,
We will learn by
experimenting and
reading about
water in our lab. Thank
you for our lab.
Sincerely: AZANION.



Dear City of Tampa Water Department,
Thank you for our water tap.
I like books about water.
Now my class will have some.
Sincerely, Julius @



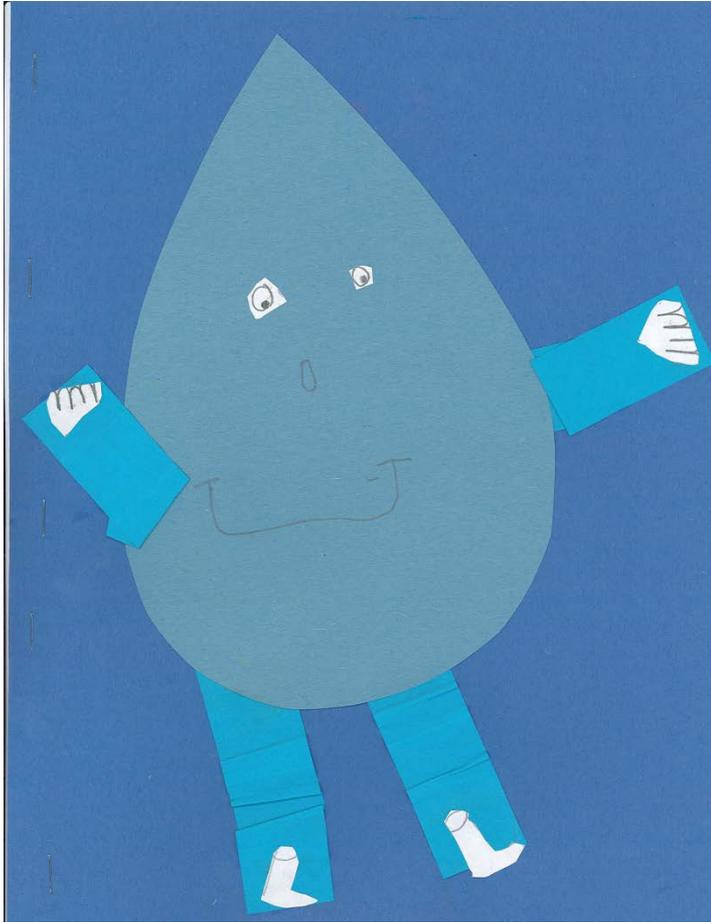
Dear City of Tampa Water
Department,
Thank you for giving us money
and helping our class room.
We really appreciate you.
We are going to learn about
science.
Sincerely, Jkwon



Dear City of Tampa Water Department,
Thank you for giving us money so
our teacher can buy books and
we can have fun!
Thank you for our lab and books
Sincerely, Ania



Dear City of Tampa water
Department, Thank you for
the money. I am going to
learn about lots of cool
science things. Sincerely, Emmy



Dear City of Tampa Water Department

Thank you for giving us money.
We will use it for a water lab.
Thank you, Thank you, Thank you
I will appreciate the money
Thank you very much!

Sincerely
Kernihan



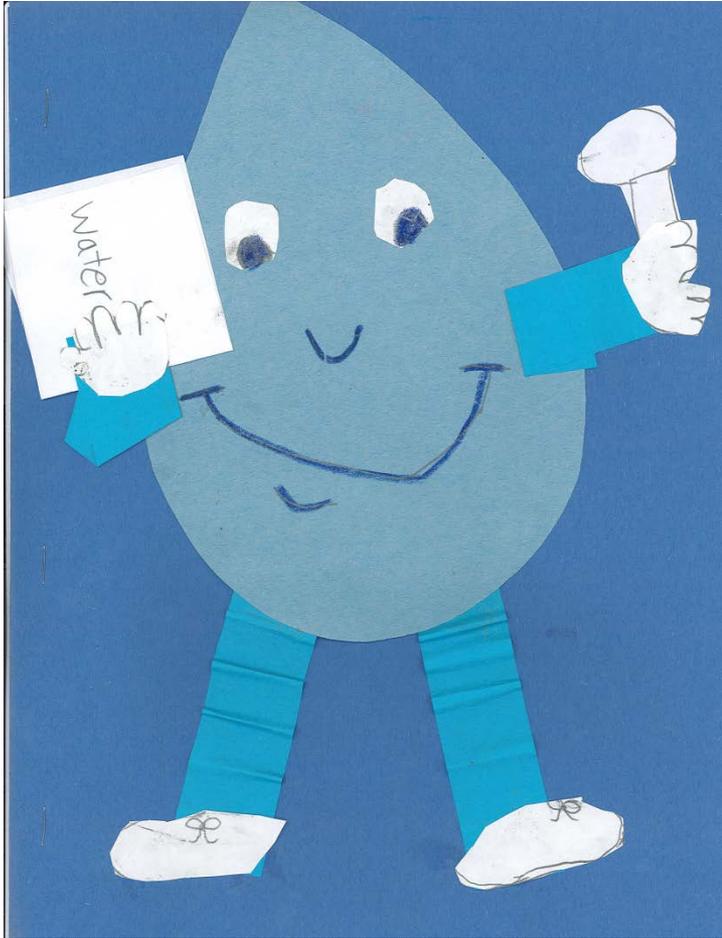
Dear City of ^{Tampa} Water Department
Thank you for giving us money to buy books and a
~~water~~ water tank and other objects to have a science lab.
Thank you very much! I will learn lots about water now.

Sincerely, Tyler



Dear City of Tampa Water
Departments Thank you
for areo lab. We will learn
more about Science.
Thank you very, very, very,
very, very, very much!

You are cool!
Sincerely, Anika



Dear city of Tampa Water Department,
Thank you for giving
Mrs. Geurts money. Now
we can learn more.
Thank you so much!
Sincerely, Gian

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or

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