TEACHER GUIDE
Elementary Activities

Newspaper in Education

The Tampa Bay Times Newspaper in Education program (NIE) is a cooperative effort between schools and the Times Publishing Co. to encourage the use of newspapers in print and electronic form as educational resources — a living textbook.

NIE serves educators, students and families by providing schools with class sets of the Pulitzer Prize–winning Tampa Bay Times plus award-winning original educational publications, teacher guides, lesson plans, educator workshops and many more resources — all at no cost to schools, teachers or families.

Times NIE educational resources fall into the category of informational text, a type of nonfiction text. The primary purpose of informational text is to convey information about the natural or social world.

For more information about NIE, visit tampabay.com/nie or email ordernie@tampabay.com. Find us on Facebook at facebook.com/TBTNIE.

Newspaper in Education Staff
Jodi Pushkin, manager, jpushkin@tampabay.com
Sue Bedry, development officer, sbedry@tampabay.com

This teacher guide was funded by a Source Water Protection Mini-Grant from Tampa Bay Water. Tampa Bay Water supplies wholesale drinking water to Hillsborough County, Pasco County, Pinellas County, New Port Richey, St. Petersburg and Tampa. Tampa Bay Water's mission is to provide clean, safe water to the Tampa Bay region now and for future generations.

Source water

Source water refers to the water sources from which we get the water we drink and use. The drinking water in Tampa Bay comes from three sources: Groundwater, river water and desalinated seawater.

- Groundwater comes from the Floridan Aquifer, sourced from wellfields in Hillsborough, Pasco and Pinellas counties.
- River water comes from the Hillsborough and Alafia Rivers and the Tampa Bypass Canal.
- Desalinated (a process in which salt is removed from the water) seawater comes from Tampa Bay.

Because our region depends on surface and groundwater for most of our water supply, it is important to safeguard those sources from pollution and contamination. Source water protection includes a wide variety of actions and activities aimed at safeguarding, maintaining, or improving drinking water sources and their contributing areas.

This purpose of this teacher guide is to expand on the lessons and activities in the Newspaper in Education publication Be a Pinellas County Water Protector. Activities in this teacher guide are geared toward students in kindergarten through fifth grade.

Contents

Section I: Starting at the source

Water: The ultimate shapeshifter

Water is a tiny molecule. It consists of three atoms: two of hydrogen and one of oxygen. Water molecules stick to each other because of a force called hydrogen bonding. It's the reason water can do amazing things. Water exists in three states on Earth: liquid, gas (vapor) and solid. Have students look in the Tampa Bay Times for images – photographs, cartoons, pictures – of water in its three different shapes. Students should cut out the images and paste them to a piece of construction paper. Have students explain to the class the three forms shown in their collage.

Florida Standards: SC.K5.N.1.1; SC.4.P.8.2; SC.2.P.8.4; SC.3.P.9.1; VA.15.C.1.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Fun with water

Students should look in the Tampa Bay Times for photos of people using water. Have the student share the photos they find with their classmates. Label the photos with a word or two showing the specific way the water is used in the photo. Students should explain to their classmates what is happening in the photo and how the water is used. Is it used for a specific purpose such as cleaning, drinking, living or having fun?

Florida Standards: SC.1.E.6.2; SC.12.L.17.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1; ELA.K5.C.1.1

Water and life

All living things need water to live. Students should cut out words and photos of living things (animals, trees, humans, flowers) and non-living things (benches, buildings, roads, cars). On a piece of construction paper, paste the living things on one side of the paper and the non-living things on the other side. Students should label each side properly. Students should share what they have learned with their classmates.

Florida Standards: SC.1.E.6.2; SC.1.L.14.3; SC.12.L.17.1; VA.15.C.1.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Life in water

All animals depend on water to live, but some animals depend on water to breathe as well. Have students look in the Tampa Bay Times for a photograph of an animal or plant that lives in the water. Next, have students create a story about that animal. The story should include two or more sequenced events. Have the students share their stories with their classmates.

Florida Standards: SC.1.E.6.2; SC.12.L.17.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5. C. 3.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Learning facts

The best way to understand the facts in a story is to identify the following points: who, what, where, when, why and how. Read one of the articles in the Tampa Bay Times Newspaper in Education publication Be a Pinellas County Water Protector. On a piece of paper, break down the story by noting the who, what, where, when, why and how specifics of the article. Have students discuss the article in small groups.

Florida Standards: ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5. C. 3.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Water and food

In addition to water, all living things need food to survive. Have students find photos, cartoons or advertisements that show water and/or food. Have students put the images they find into two categories; food and water. With your students make a list of the items found.

Florida Standards: SC.1.E.6.2; SC.12.L.17.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5. C. 3.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Know. Wonder. Learn

A good way to build reading and learning skills is to Know, Wonder and Learn (KWL). While students are reading or learning new things, they should ask themselves questions. First ask what you already **know** about the subject. Then you ask what you **wonder** or want to know. Then you read and ask what you have **learned**. Have your students practice this KWL technique with the Tampa Bay Times Newspaper in Education publication Be a Pinellas County Water Protector. Before exploring the publication, have students tell what they know, what they wonder about and then after reading an article what they have learned.

Florida Standards: SC.K5.N.1.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5. C. 3.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Watersheds

A watershed is a region of land that drains rainwater into a specific body of water. Watch the What are Watersheds? video on PBS Media: https://www.pbs.org/video/curious-kids-curious-kids-what-watershed. Students should discuss and write down the key points about watersheds after watching the video. Next, have students look for words and photos in the Tampa Bay Times that show items in a watershed. As a class, make a list of all images students find. Create a bulletin board or poster with words and images the class finds.

Florida Standards: SC.K5.N.1.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5. C. 3.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Section II: Water conservation

Cause and effect

Waste can result in a shortage of natural resources, including water. Wasting resources is increasing at an alarming rate in the world and in our neighborhoods. Waste can be the result of carelessness or convenience. Have students look for an article, photograph or cartoon in the Tampa Bay Times that depicts a natural resource being used. Have the students discuss the article and then write down the main points presented in the article. Is the resource renewable or nonrenewable? Is this resource being wasted? How is it being wasted? Have students discuss things they can do to offset the problem being shown. As a class, write down the steps you can take to offset wasting resources. Then break students into small groups and create a poster outlining those steps to share with others.

Florida Standards: ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4

Working together

We all need to work together to protect our environment. Conserving water, recycling and protecting our wildlife are important for the future of Earth. Look for articles in the Tampa Bay Times that show or focus on examples of people, groups or organizations that are working to protect the environment. Make a list of those involved and the actions they are taking. Select one of the environmental groups or issues you have read about and do some research about it. Then think about what actions you can take to protect the environment. Share your ideas and what you have learned by writing a blog post or short essay that incorporates the information you have learned.

Florida Standards: SC.5.E.7.2; SC.45.E.7.1; SC.4.P.8.2; ELA.45.C.1.3; ELA.45.C.1.4; ELA.45.C.2.1; ELA.45.C.3.1; ELA.45.C.4.1; ELA.45.R.2.2; ELA.45.R.2.3; ELA.45.R.2.4; ELA.45.V.1.1; ELA.45.V.1.3; ELA.45.F.2.1; ELA.45.F.2.2; ELA.45.F.2.3; ELA.45.F.2.4

Helping your community

Tell students to look in the Tampa Bay Times for articles about water conservation and how you can help make your community environmentally sound. Using ads in the newspaper as models, students should create an ad to promote a water conservation initiative. Students should examine the ads in the newspaper and think about the dynamics of the ads (images, words, placement of items, colors). Have students think about ways to draw people's attention to an ad and message. Then, have students design an ad for the print edition of the newspaper and for the website. How is the ad on the print edition going to be different than the web version of the ad? Next, students should write a fully developed paragraph showing the differences in the ads and what the main point of the ads is. Finally, have students share their ad and the information in your paragraph with your class.

Florida Standards: ELA.35.C.1.3; ELA.35.C.1.4; ELA.35.C.2.1; ELA.35.C.3.1; ELA.35.C.4.1; ELA.35.R.2.2; ELA.35.R.2.3; ELA.35.R.2.4; ELA.35.V.1.1; ELA.35.V.1.3; ELA.35.F.2.1; ELA.35.F.2.2; ELA.35.F.2.3; ELA.35.F.2.4

Water conservation

Water plays an important role in our lives. Because we live in a state surrounded by so much water, we often forget about the importance of conservation.

- Students should take the Classroom Challenge | WaterMatters.org (state.fl.us)
- Students should calculate how much water they are using at home and share the data with the rest of the class.
- Students should then make a list of the ways they and their families can conserve water. Some ideas include the following suggestions:
    - using water-saving appliances
    - using a broom instead of the hose outside on our porches and driveways
    - shutting off the water while we brush our teeth
    - running a full load of laundry
    - using rain barrels in our gardens
    - taking shorter showers,
- Have students do some research on water conservation throughout this month. Students should report back to the class about how they conserved water inside their homes as well as outside their homes. (This may consist of our surrounding community.)

Florida Standards: SC.35.N.1.2; SC.35.N.1.3; SC.35.N.1.4; SC.35.N.1.5; SC.35.N.1.6; SC.35.N.1.7; SC.35.N.1.8;; SC.35.E.6.6; ELA.35.C.1.3; ELA.35.C.1.4; ELA.35.C.2.1; ELA.35.C.3.1; ELA.35.C.4.1; ELA.35.R.2.2; ELA.35.R.2.3; ELA.35.R.2.4; ELA.35.V.1.1; ELA.35.V.1.3; ELA.35.F.2.1; ELA.35.F.2.2; ELA.35.F.2.3; ELA.35.F.2.4

Creating an alternate world

Now that students have learned about the importance of conserving water and keeping our water supply clean and monitored, have them imagine a future where people did not conserve resources and the Clean Water Act was repealed. Students can learn more about the Clean Water Act by going to the U.S. Environmental Protection Agency website.

Have students think about what would the fictional world look like. Working in small groups, create a future world that has been shaped by people disregarding the messages in the Times NIE publication Be a Pinellas County Water Protector. Students should write a fully developed paragraph describing your world.

Using the front page of the Tampa Bay Times as a model, have students create a newspaper for this world they have created. Each student in the group should be responsible for different stories giving the reader a good view of this new world. Share the description of your world and your stories with your classmates.

Florida Standards: SC.4.E.6.3; SC.4.L.17.4; SC.45.L.17.18; SC.45.L.17.20; ELA.45.C.1.3; ELA.45.C.1.4; ELA.45.C.2.1; ELA.45.C.3.1; ELA.45.C.4.1; ELA.45.R.2.2; ELA.45.R.2.3; ELA.45.R.2.4; ELA.45.V.1.1; ELA.45.V.1.3; ELA.45.F.2.1; ELA.45.F.2.2; ELA.45.F.2.3; ELA.45.F.2.4

Section III: Examining the hydrologic cycle

The hydrologic cycle

The hydrologic or water cycle is the continuous movement of water through Earth's atmosphere. Using the headlines and advertisements in the Tampa Bay Times, have students find all the letters in the words "hydrologic cycle." Students should circle each letter. Students should share the words they have found. Which letters were the most difficult to find? Which letters were easiest to find?

Florida Standards: ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1

On the move

Water is always on the move. The word "water" is a noun. A noun is a person, place or thing. The word "move" is a verb, which means it is an action word. Have students look in the Tampa Bay Times for nouns and verbs. Students can cut out the nouns and verbs they find. Students should paste all the nouns on one side of a piece of paper. On the other side of the paper students can paste the verbs.

Florida Standards: VA.15.C.1.1; ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Sounds and letters

The word "hydrologic" has three vowels. As a class, have students identify the three vowels in the word. Explain that in the word hydrologic, the letter "o" has both a long and a short vowel sound. In small groups, have students look for words in the Tampa Bay Times that have short and long vowel sounds. On a piece of chart paper or the dry erase board, make a list of the words and put them in the proper category of long and short vowel sounds.

Florida Standards: ELA.K5.EE.4.1; ELA.K5.EE.5.1; ELA.K5.EE.6.1l; ELA.K5.C.1.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.4.1; ELA.K5.V.1.1

Moving water

The world's water moves between lakes, rivers, oceans, the atmosphere and the land in an ongoing cycle called the water cycle. The water cycle describes how water evaporates from the surface of the Earth, rises into the atmosphere, cools and condenses into clouds and falls again to the surface as precipitation. Visit https://gpm.nasa.gov/education/videos/water-cycle-animation to watch an animation of Earth's water cycle. Using the news articles in the Tampa Bay Times as models, students should write a news article about what is shown in the video. Students should share what they have learned with their classmates.

Florida Standards: SC.25.N.1.1; SC.25.N.1.2; SC.25.N.1.3; SC.25.N.1.4; SC.25.N.3.1; SC.25.P.9.1; SC.5.E.7.1; ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4

The water cycle

The water cycle, also called the hydrologic cycle, describes the continuous movement of water above, on, and below the surface of the Earth. To understand Florida's water resources and the importance of water conservation, we must first understand the water cycle and its impact on water availability. Learn more about the water cycle by visiting the Climate Kids website. Be sure to click on the NASA Missions links to see the satellites.

Have students work in small groups to create an infographic explaining the water cycle. Find images and words in the Tampa Bay Times that represent the different stages of the cycle. Students can cut out the images and words to create their information graphic to share with their classmates. After students have created the infographic, have them write a few sentences on the back of the paper explaining what they learned.

Florida Standards: ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4

Creating a water cycle

Students have learned that water takes several paths as it moves through the environment. In this activity, students will capture the water cycle in a bag.

MATERIALS

- colored markers
- tiny plants (optional)
- handful of soil
- scissors
- spray bottle of water
- plastic quart-size sealable bag
- handful of small pebbles and gravel

DIRECTIONS

1. With the markers, draw the water cycle on each bag include a lake, tree, sun, cloud and rain and label evaporation, transpiration, condensation, precipitation.
2. Place a handful of small pebbles and gravel in the bottom of the bag to represent the aquifer.
3. Place a handful of soil on top of the pebbles and gravel.
4. Place a few tiny plants in the soil, if desired.
5. Gently spray water over the soil and rock mixture until it is moist
6. Zip the bag shut and place it upright in an area that receives indirect sunlight.
7. After a few days, check to see if you have captured the water cycle!

Finally, students (individually, in groups or as a class) can write a news story about the experiment, using the articles in the Tampa Bay Times as models. Students should make sure their article focuses on the who, what, where, when, why and how points of the experiment.

Florida Standards: SC.K5.N.1.1; SC.K5.N.1.2; SC.K5.N.1.3; SC.K5.N.1.4; SC.K5.N.1.5; SC.K5.N.1.6; SC.K5.N.1.7; SC.K5.N.1.8; SC.5.P.8.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.3.1; ELA.K5.C.4.1; ELA.K5.R.2.2; ELA.K5.R.2.3; ELA.K5.R.2.4; ELA.K5.V.1.1; ELA.K5.V.1.3; ELA.K5.F.2.1; ELA.K5.F.2.2; ELA.K5.F.2.3; ELA.K5.F.2.4

Section IV: Source water protection

Where does my water come from?

The major source of our water supply in Florida is the Floridan Aquifer. The aquifer is a huge underground reservoir, made up of limestone rock. Limestone rock is porous, which means the rock has small holes that allow water to go inside the rock, just like a sponge. The water in the aquifer comes from rainfall that soaks into the ground. Rainfall that is not absorbed is called surface or stormwater runoff. We take water from the aquifer for human use through springs (natural openings in the ground where water flows directly from the aquifer to the surface) and wells (artificial holes drilled into the aquifer).

Doing the research

Have students research the following terms:

- Freshwater
- Groundwater
- Potable water
- Wastewater
- Reclaimed water
- Spring water
- Stormwater runoff

Next, students should create a poster depicting the types of water and what the water is used for. Have students label each photo with a caption. Students should share the information they have learned with the class.

Florida Standards: SC.25.N.1.1; SC.25.N.1.2; SC.25.N.1.3; SC.25.N.1.4; SC.25.N.3.1; SC.712.E.6.6; SC.25.P.9.1; ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4; VA.15.C.1.1

Everything is connected

Everything in the natural world is connected. Safe drinking water may start with a raindrop, but its journey to the tap is extensive. As inhabitants of Earth, it is our job to not only realize that, but also to try to protect the parts, which contribute to the whole. An ecosystem is a biological community of interacting organisms and their physical environment. In other words, an ecosystem is a community of living and non-living things that work together. Think about all the different parts of the water ecosystems and how they interact. Look for articles and photos in the Tampa Bay Times about your community. Make a list of all the parts of your ecosystem. Choose some of the most important parts and create a cartoon depicting your personal ecosystem.

Florida Standards: SC.5.E.7.2; SC.4.E.6.3; SC.45.N.1.1; ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4

Protecting drinking water starts with you

The pond behind your home…the river where you like to fish…the waters at your favorite beach…this water belongs to the state, and you as a user of this water must be considerate of what you do in and around it. It's everyone's job to protect Florida's waterways and to ensure there will be plenty of water for future generations.

. We all live in a watershed. According to the U.S. Geological Survey, a watershed is "An area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel." Everything we do on land can affect the health and well-being of surrounding water bodies. What you do in and around your home and in your community impacts our watershed. We all share the responsibility so we can all make simple changes to help prevent pollution and promote a healthy watershed for all of us.

It is time for students to use their critical thinking skills. Students should review the articles and advertisements in the Tampa Bay Times for a two-week time period. Students should save all articles that focus on water, conservation and the environment.

Students should write down the main points for each article. Have the students comment on whether the article is focusing on positive or negative choices and behaviors. Have the students select one of the points represented in one of the articles to write a research paper. Students can focus the research and paper on any aspect of the article. After the paper is written, students should create an oral presentation for your class.

Have the students explain whether the information you found is positive, negative, helpful or harmful. Be sure to use specific examples from the article and your research in your paper and presentation.

Florida Standards: ELA.35.C.1.3; ELA.35.C.1.4; ELA.35.C.2.1; ELA.35.C.3.1; ELA.35.C.4.1; ELA.35.R.2.2; ELA.35.R.2.3; ELA.35.R.2.4; ELA.35.V.1.1; ELA.35.V.1.3; ELA.35.F.2.1; ELA.35.F.2.2; ELA.35.F.2.3; ELA.35.F.2.4

Section V: Learning through experiments

To flush or not to flush

In this activity, students will measure the speed at which common products break down in the presence of water. From these observations, students will be able to make suggestions about materials that should or should not be flushed down the toilet.

Materials needed:

- Ten one-quart jars, such as mason jars or empty mayonnaise jars.

Materials to test:

- Single-ply toilet paper
- Double-ply or super-soft toilet paper
- Wipes labeled as flushable
- Nonflushable baby wipes
- Facial tissue
- Newspaper
- Kitchen paper towels
- Cotton balls, swabs or Q-tips
- Copy paper
- Wax paper

Procedure

1. First, predict what you think will happen to each sample material.
2. Write down your predictions.
3. Fill each jar with tap water and put one type of sample material in each.
4. Label each jar with the name of the material it contains.
5. Shake each jar to mix the contents. Shake each jar with the same force and for the same number of times.
6. Over a period of two to six weeks, observe, draw and describe the changes in the materials. Create graphs of the changes in the materials over time.
7. At the end of the observation period, draw conclusions based on your results. Are there any materials that completely dissolved? Are there any that did not appear to change in any way? Based on your observations and knowledge, which materials should be flushed? Why? Which should not be flushed? Why?
8. Using the articles in the Tampa Bay Times as your models, write a special news report about what you have discovered. Enhance your article with a graph, chart or infographic.

Florida Standards: SC.K5.N.1.1; SC.K5.N.1.2; SC.K5.N.1.3; SC.K5.N.1.4; SC.K5.N.1.5; SC.K5.N.1.6; SC.K5.N.1.7; SC.K5.N.1.8; SC.5.P.8.2; ELA.K5.C.1.3; ELA.K5.C.1.4; ELA.K5.C.2.1; ELA.K5.C.3.1; ELA.K5.C.4.1; ELA.K5.R.2.2; ELA.K5.R.2.3; ELA.K5.R.2.4; ELA.K5.V.1.1; ELA.K5.V.1.3; ELA.K5.F.2.1; ELA.K5.F.2.2; ELA.K5.F.2.3; ELA.K5.F.2.4

Water pollution experiment

Materials needed

- A glass
- Water
- Red or blue food coloring.
- A knife
- A stalk of fresh celery with leaves

Procedure

1. Fill the glass with water.
2. Add two or three drops of food coloring to the water.
3. Describe or draw what happens.
4. Wash the celery, leaving the leaves on.
5. Cut about one inch off the bottom of the celery stalk. Describe or draw what the stalk looks like at this point.
6. Place the celery stalk in the glass filled with colored water.
7. Describe or draw what you think will happen.
8. Leave the celery in the glass overnight.
9. In the morning, describe what the water looks like.
10. Remove the celery stalk from the water.
11. Describe or draw what the celery stalk looks like at this point.
12. Use the knife to cut the stalk into slices. What do you find in the stalk? In the leaves? Describe or draw what you observe.

If the food coloring represents pollution in our water, what does this experiment suggest about the way it spreads through the environment and enters the food chain? Create a poster illustrating the experiment, its results and your conclusions. Using the news articles in the Tampa Bay Times as models, write a brief science article focusing on what you have learned. Share your poster and main points from the article with your class.

Florida Standards: SC.5.P.8.2; SC.25.N.1.1; SC.25.N.1.2; SC.25.N.1.3; SC.25.N.1.4; SC.25.N.1.5; SC.25.N.1.6; SC.25.N.1.7; SC.25.N.1.8; ELA.25.C.1.3; ELA.25.C.1.4; ELA.25.C.2.1; ELA.25.C.3.1; ELA.25.C.4.1; ELA.25.R.2.2; ELA.25.R.2.3; ELA.25.R.2.4; ELA.25.V.1.1; ELA.25.V.1.3; ELA.25.F.2.1; ELA.25.F.2.2; ELA.25.F.2.3; ELA.25.F.2.4

Adapted from: Kids Ecology Corps, “When You Use Water, You Use Everything in It”

Section VI: Puzzles and coloring pages

Being a water protector puzzle

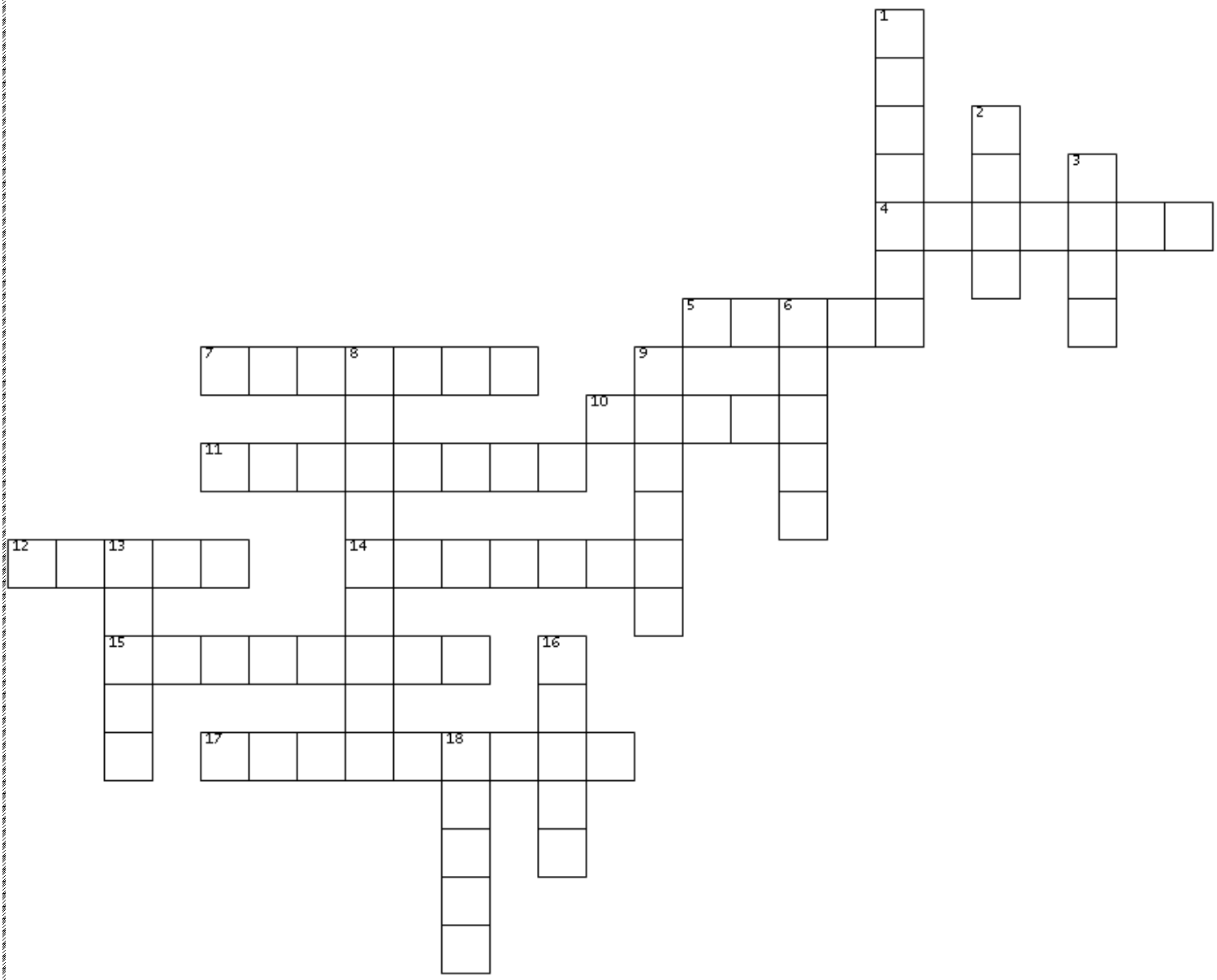
The answers to the questions for the crossword puzzle are in the Be a Pinellas County Water Protector Tampa Bay Times Newspaper in Education publication.

ACROSS

4. This type of friendly plant is best to plant to conserve water.
5. All living things need this.
7. Water molecules cling to each other because of a force called hydrogen _____
10. Water is _____ and has no taste or smell.
11. The first step in the water cycle is a _____.
12. Water does this inside the planet, across its surface, and in the atmosphere.
14. Water is called the universal ____.
15. Water _____ is the force with which water is pushed through pipes and fixtures in a home.
17. A community of living things or species is called an _____.

DOWN

1. An _____ is an underground area that holds water in the gaps between rock
2. You can help keep source water clean by not polluting and scooping this.
3. A habitat is where animals do this.
6. Water exists in this number of forms.
8. The water from your faucet could contain molecules that these creatures drank.
9. When water freezes, it _____.
13. The invisible gas that water changes into is called _____.
16. There are two types of water: salty and _____.
18. More than 97 percent of the water on Earth is _____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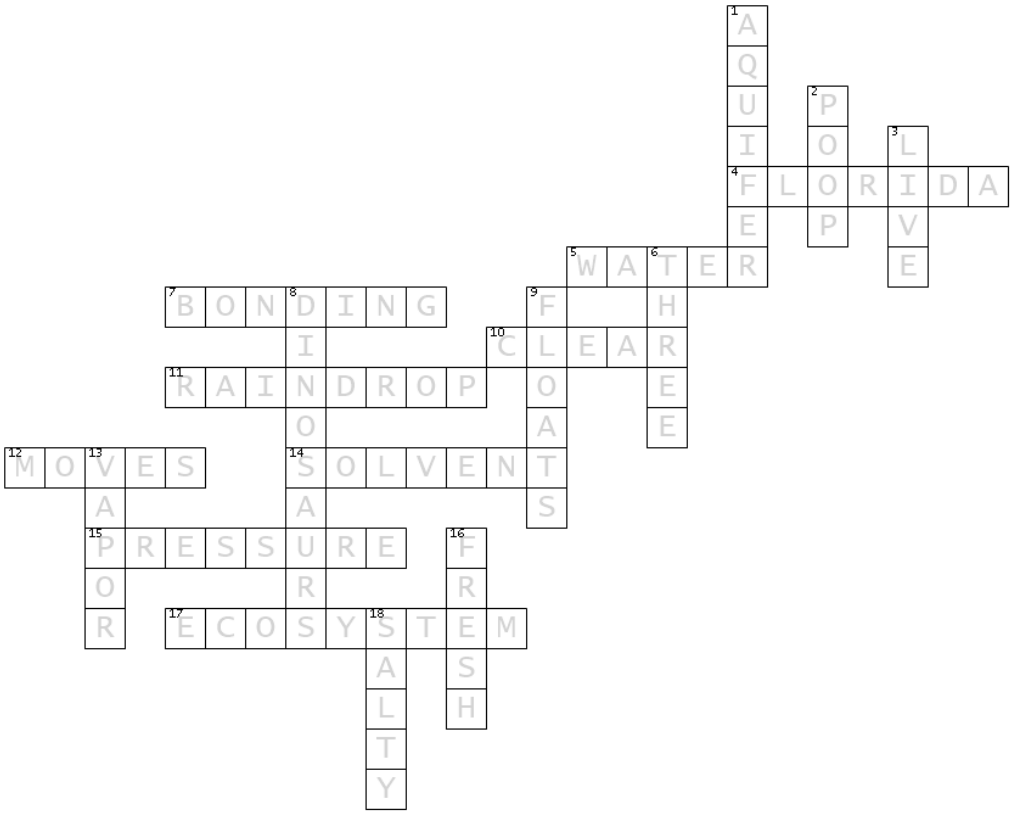


ACROSS
4. Florida
5. Water
7. Bonding
10. Clear
11. Raindrop
12. Moves
14. Solvent
15.Pressure
17. Ecosystem

DOWN
1. Aquifer
2. Poop
3. Live
6. Three
8. Dinosaurs
9. Floats
13. Vapor
16. Fresh
18. Salty

Learning new words

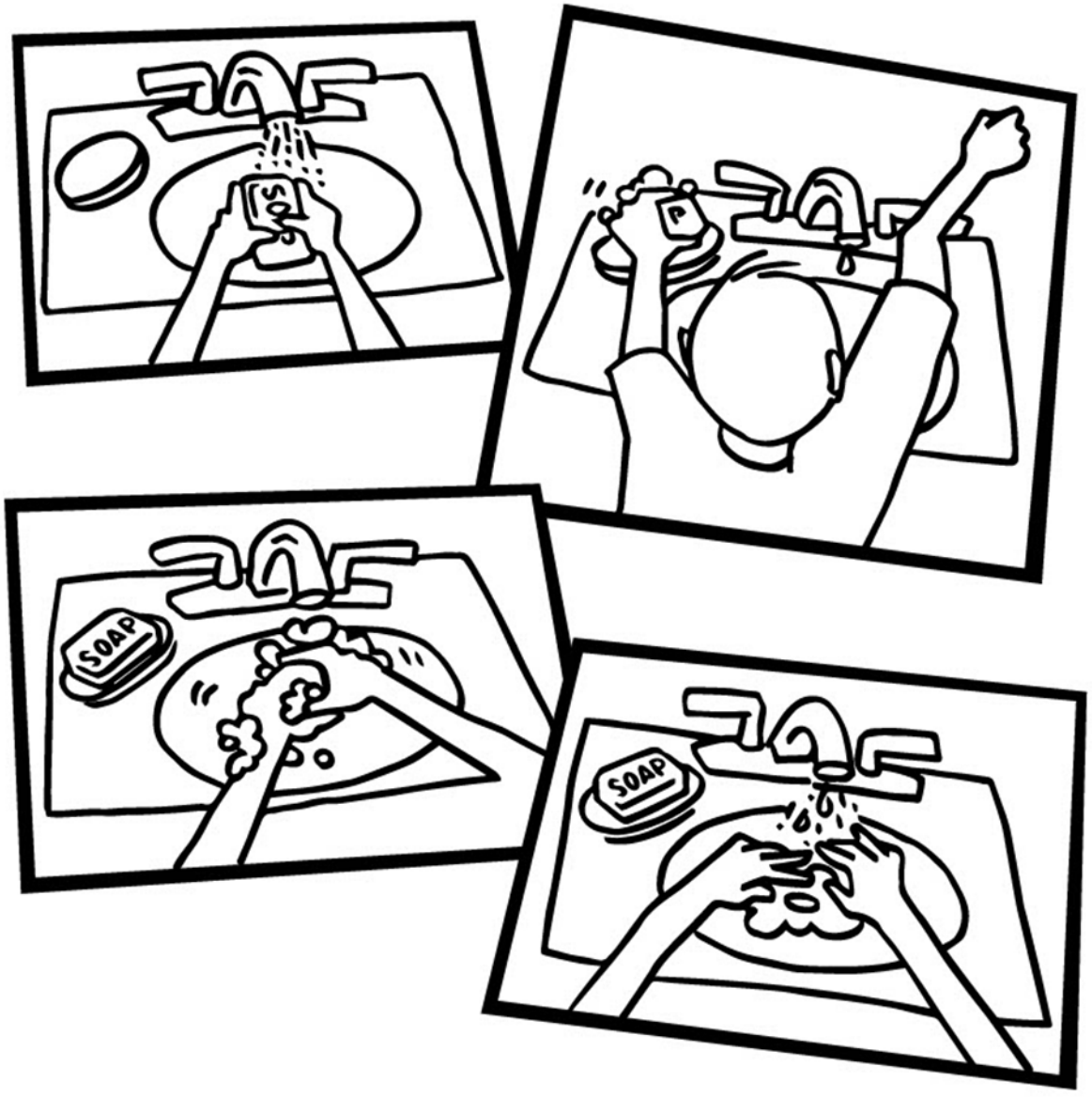
Find the words below in the word search puzzle. Words can go in any direction. Words can share letters as they cross over each other. After you find each word, look up the meaning in a dictionary. Next, see if you can find each word or a synonym for each word in the Tampa Bay Times. Synonyms are words that have the same or nearly the same meaning.

1. Aquifer
2. Condensation
3. Conservation
4. Cycle
5. Earth
6. Evaporation
7. Freshwater
8. Gas
9. Groundwater
10. Hydrologic
11. Liquid
12. Precipitation
13. Solid
14. Transpiration
15. Water

P R E C I P I T A T I O N U N
G X F N H D U R M A D E G A S
Q P D I V I G E V E A E X G N
V C B P V U H P U R N C R D O
N S O M P Q R E T A W O W F I
O O A N R I D H W A U N M R T
K I I V S L R M L N J D A E A
I D I T P E P E D T D E J S R
E M K R A Y R W T I Q N M H I
P L Q N Y R A V L S X S V W P
J W C C M T O O A N T A R A S
C O O Y E T S P B T W T B T N
M H D R C S J T A N I I V E A
R E F I U Q A T U V F O E R R
C I G O L O R D Y H E N N Q T

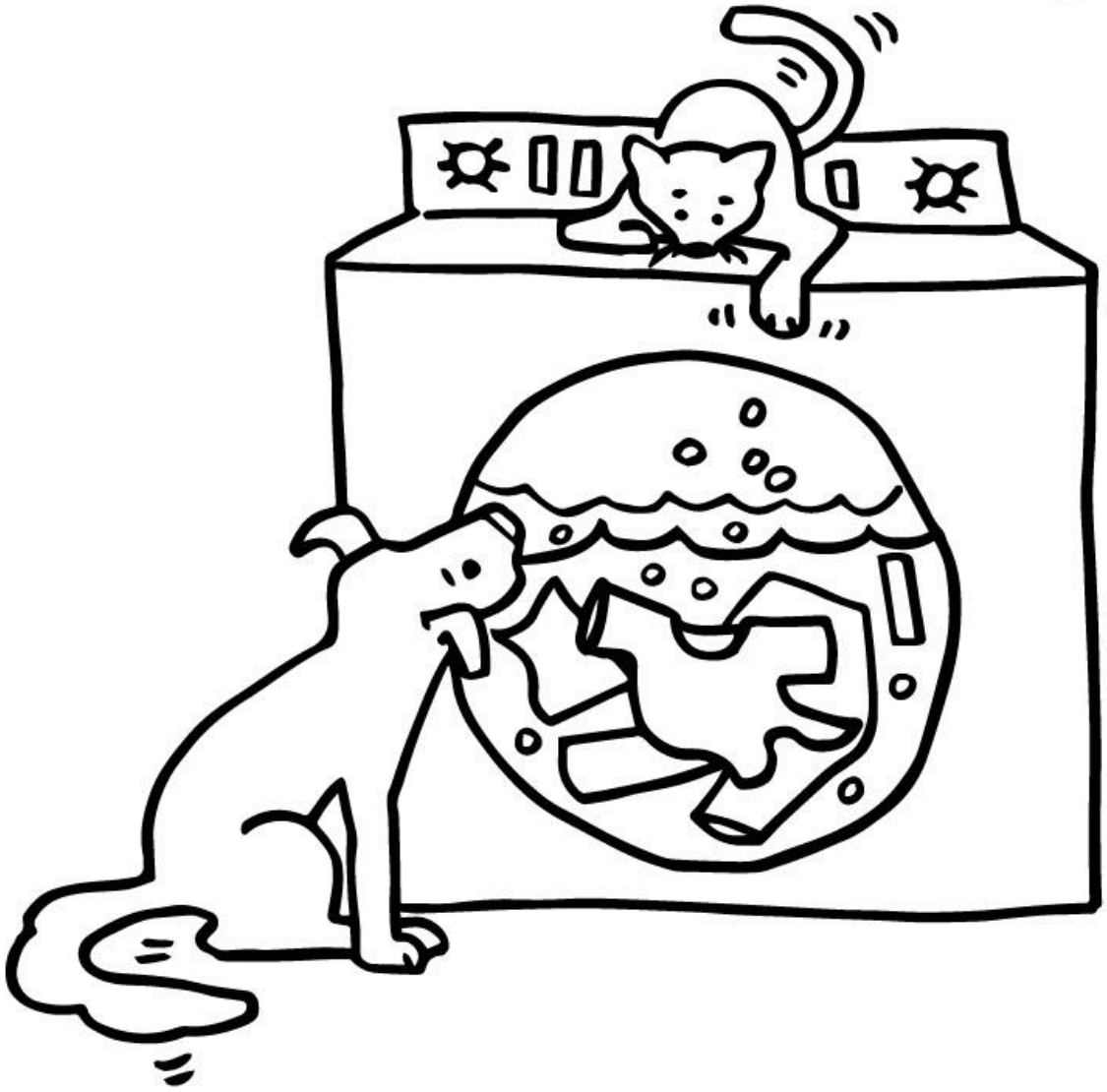
The following coloring book pages are created by the U.S. Environmental Protection Agency

Turn off the TAP



Whether washing your hands for 20 seconds or brushing your teeth for two minutes, you don't have to keep the faucet running. Save 200 gallons of water in a month by turning off the tap while you scrub.

Load Up on Laundry

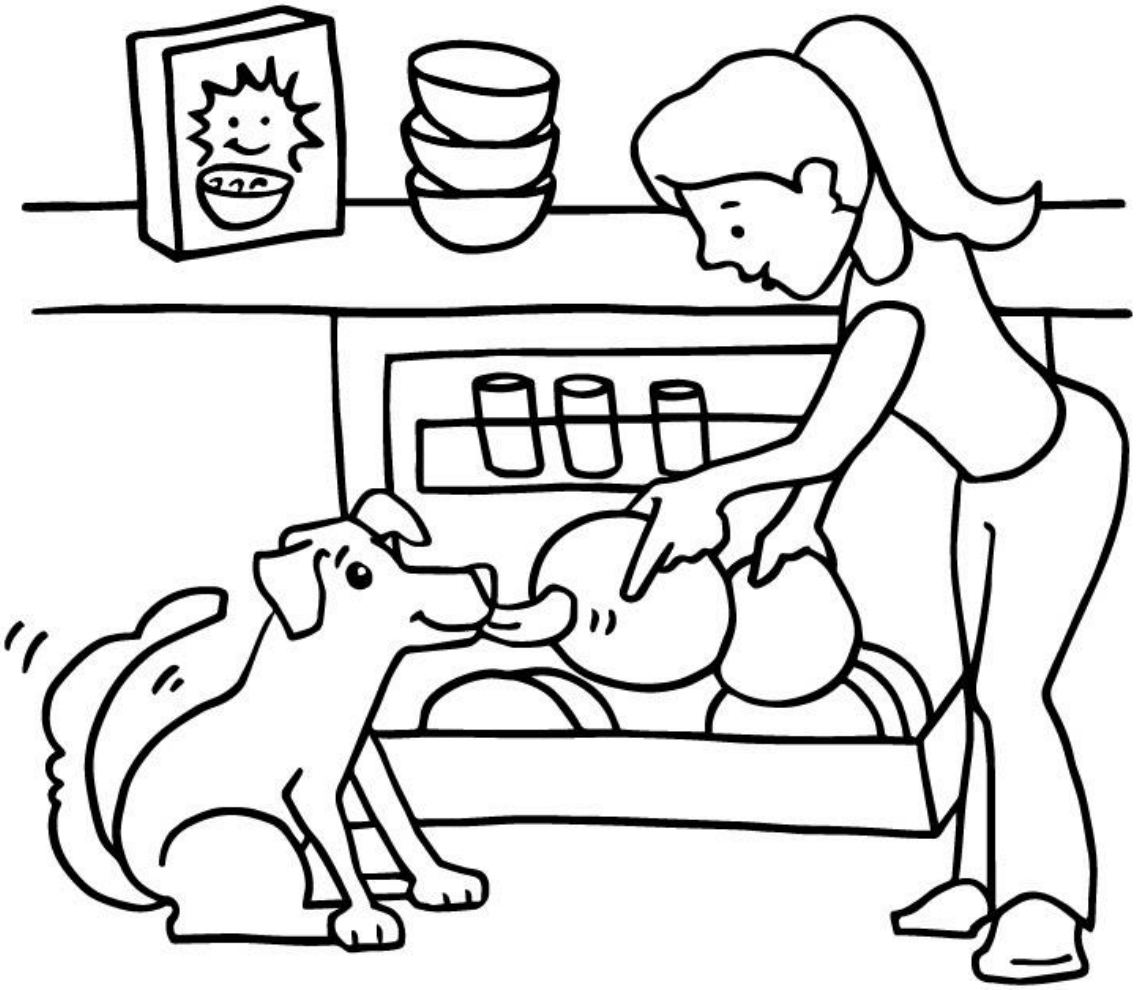


More kids at home means more laundry. Save energy by washing clothes in cold water, and conserve water by only running the washer with full loads.

WATCH What You Flush

Only three Ps should go in your toilet—pee, poo, and (toilet) paper. Toilet paper is designed to dissolve, but disposable wipes and paper towels don't break down and can clog toilets and drains. Safely dispose of them in the trash.

Let Your Dishwasher Do the Work



Did you know it takes less water to run a full dishwasher than to wash dishes by hand in the sink? Save more water by scraping plates into the trash rather than rinsing them before loading the dishwasher.

SAVE while Showering

Showers use less water than baths. Order a WaterSense labeled showerhead to replace your current model, and you'll save water and energy without noticing a difference in flow!

Be a **Leak** Detective

Have a parent help you take the top off the tank at the back of the toilet. Place a few drops of food coloring in the tank. If the color shows up in the bowl, you might need a new flapper. Don't forget to flush after!

Curb outdoor Water Waste

Watering the yard is a great way to get outside in the fresh air. Just don't water in the middle of the day when temperatures are highest, or the sun will evaporate water before it reaches your plants.