

CELEBRATE
WATER

DRINKING
WATER WEEK

DIGITAL STUDENT
LEARNING GUIDE





Our Mission

The primary objective of Celebrate Water, initiated by the San Antonio Water System, is to cultivate an interest in water among young individuals, encouraging them to become active environmental stewards who carry these values into adulthood. By participating in various water-related celebrations, students can enhance their understanding and appreciation of water resources.

The educational materials provided through Celebrate Water include engaging lessons that are supplemented with hands-on activities, interactive experiments, and opportunities for outdoor exploration.

Completion of the Celebrate Water program equips students for further exploration at our Academy of Water Influencers, where they can apply their knowledge through exciting high school-level projects.



Introducing the founders of the Academy of Water Influencers, an initiative dedicated to empowering high school students.

Stephanie, River, Walter and Teodora are passionate educators committed to leading students through each Celebrate Water adventure, ensuring that every lesson is both engaging and enjoyable.



Student Learning Guide Assistance Manual

How To Log In

The student learning guides are accessible exclusively through a direct link. If the link included in the SAWS email is unresponsive, please copy the entire web address and paste it into your web browser. Should this method also prove ineffective, do not hesitate to contact me at gabriela.diaz@saws.org.

To access the student learning guides on the SAWS Celebrate Water webpage, scroll down until you find the section containing our digital guides. Click on the button labeled "Access Here" or "Student Guide." The student learning guide will then open automatically in your web browser.

How To Print

All Student Activity Sheets and other printable materials will be available for download in PDF format. You can locate the PDF link beneath the student learning guides. These files can be printed using your personal printer.

Additionally, you may print the Student Activity Sheets directly from the digital learning guide by clicking the printer icon in the bottom right corner of the screen. This action will generate a PDF of the student guide. Please note that downloading the student learning guide may take several minutes, depending on the file size. Once the download is complete, you will be prompted to specify the pages you wish to print.

Print





Student Learning Guide Assistance Manual

How To View in Full Screen

To view the student learning guide in full screen, click the square icon located at the bottom of the screen (as illustrated below). To exit full screen mode, you can either press the ESC key on your keyboard or click the same icon again. An exit full screen message will appear above the icon to confirm the action.

Full screen

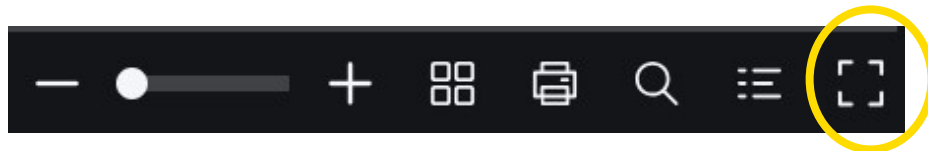


Table of Contents

A table of contents feature has been introduced to facilitate easy navigation to specific lessons or the glossary. This enhancement serves as a valuable resource for students.

Table of contents





Learning Module Guide

Open the Learning Module

- To access the learning module, simply use the direct link or click on the interactive guide button provided on the SAWS Celebrate Water webpage.
- The interactive learning module will open in a new browser tab. Click on start.
- Recommended browsers: Google Chrome, Firefox, or Edge for the best experience.

Navigating the Slides

- Click arrows on the sides of the screen to move forward or backward.
- Use your keyboard right arrow moves to next slide and left arrow moves to previous slide.

Interacting with Elements

- Hover over images, icons, or buttons to see if they are clickable.
- Click on interactive indicator to see what elements are clickable on the slide.





**interactive element
button**

- Some slides may contain pop-ups, links, or videos. Make sure to click or tap to explore.

Zoom and Full Screen

- Click the full screen icon, in the bottom right corner, for an immersive view.

Audio and Video

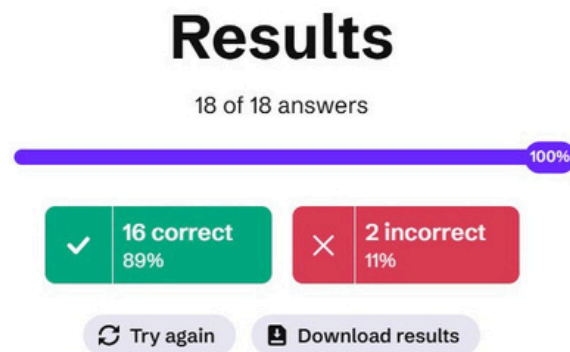
- The learning modules include sound and video, please make sure your device volume is on.
- To mute all sound in the module click on the gray audio button. 
- To listen to an audio narration click on the speaker button. 
- Videos can be paused or played by clicking on the play/pause icon.



Learning Module Guide

Results

- As students move through the learning module, their answers and progress will be saved automatically.
- If a student stops the learning module before completing it, they can resume from where they left off without losing any of the work they have completed.



Resetting Results

- After all questions in the learning module are answered, the student's score or results will appear on the screen.
- Students can download results as a PDF file or click on try again.
- If students click on try again, it will restart the module and they can go through it again to improve their score.
- Each time it resets, a new set of results is recorded.

Contact

If you encounter any difficulties accessing the learning guides or modules, please do not hesitate to contact me at gabriela.diaz@saws.org, (210) 233-2078.

I am here to help you troubleshoot any issues.

Thank you!



TEKS

The educational material included in Celebrate Water student learning guides align to the state curriculum standards, the Texas Essential Knowledge and Skills designed for students from second to fifth grade.

Grade Level	SCIENCE (2020)	ELAR (2022)	SS (2020)	MATH (2022)
2nd	2.2D, 2.5, 2.7C, 2.9	2.3, 2.3A, 2.3B, 2.6, 2.6G, 2.6H, 2.7, 2.7B, 2.7E, 2.9D, 2.9E	2.5C, 2.13, 2.13B, 2.15, 2.15A, 2.15B, 2.16, 2.16F	2.1, 2.1A, 2.6
3rd	3.2F, 3.5, 3.7	3.3, 3.3A, 3.3B, 3.6, 3.6G, 3.6H, 3.7, 3.7B, 3.7E, 3.13E	3.3A, 3.7C, 3.13, 3.14, 3.14C, 3.15, 3.15A	3.1, 3.1A, 3.4, 3.4E
4th	4.2F, 4.5, 4.7, 4.7C,	4.3, 4.3A, 4.3B, 4.6, 4.6G, 4.6H, 4.7, 4.7B, 4.7E	4.8B, 4.18, 4.19, 4.19B, 4.21, 4.21D,	4.1, 4.1A, 4.1F
5th	5.2F, 5.5, 5.7	5.3, 5.6, 5.6F, 5.6G, 5.6H, 5.7, 5.7E,	5.8A, 5.23, 5.23B, 5.25, 5.25D,	5.1, 5.1A, 5.1F



Glossary



- aeration basin:** The wastewater treatment stage that adds helpful bacteria and oxygen to the water and is mixed to remove organic material and allow pollutants to clump together.
- coagulate:** The first step in surface water treatment that brings together, or clumps, the solid, muddy material that needs to be removed.
- dewatering:** This additional step in wastewater treatment manages the solids from the first stage of treatment by squeezing out as much water as possible to make the solids into fertilizer, or to be incinerated to be made into building materials, or sent to landfills.
- disinfection:** The final stage in wastewater and surface water treatment that removes any remaining pathogens such as bacteria, viruses, or parasites.
- elevated storage tank:** A large water tower used as reservoir or for maintaining equal pressure in a water system.
- FEMA:** The Federal Emergency Management Agency (FEMA) is the federal agency responsible for providing help before and after a disaster.
- flocculation:** The step in surface water treatment that stirs the water to get clumps to get larger. In wastewater treatment it is the tertiary stage in which water is polished.
- filtration:** The step in surface water treatment in which water passes through filtered media removing finer materials and microbes.
- grit chamber:** The primary treatment stage where water is slowed down to allow sand and gravel to sink down to the bottom.
- groundwater:** Water contained under the ground's surface; a common source of water for drinking and irrigation.
- microbes:** Tiny bugs found in water that can cause illness.



Glossary



- sanitary sewer collection system:** An underground system of pipes used to carry off sewage or wastewater to a centralized treatment plant.
- screening:** The first stage in wastewater treatment where the biggest pollutants are removed.
- sedimentation:** In this stage of wastewater and surface water treatment the heavier dirt sinks to the bottom.
- stormwater runoff:** Rainwater that picks up pollutants as it runs off of surfaces such as pavement, rooftops, and lawns that directly flows into nearby rivers, creeks and lakes.
- surface water:** Precipitation that does not soak into the ground or return to the atmosphere by evaporation or transpiration, and is stored in streams, lakes, wetlands, reservoirs, and oceans.
- treatment plant:** A place where fresh water is cleaned and treated for drinking, or cleaning; treating wastewater before releasing it into a body of water like a river, lake, or ocean.
- wastewater:** Water that has been used for household or industrial purposes.
- wastewater treatment:** Physical, chemical and biological processes used to remove pollutants from wastewater before releasing it into a body of water like a river, lake, or ocean.
- watershed:** An area of land that allows water to flow downhill on its way to rivers, lakes, and oceans.



Student Progress Chart

Utilize this chart to monitor student progress by marking a check or recording the date each lesson activity is submitted. Once all five lessons are finished, students may receive their prize!

STUDENT NAME		LESSON 1	LESSON 2	LESSON 3	LESSON 4	LESSON 5
1.						
2.						
3.						
4.						
5.						
6.						
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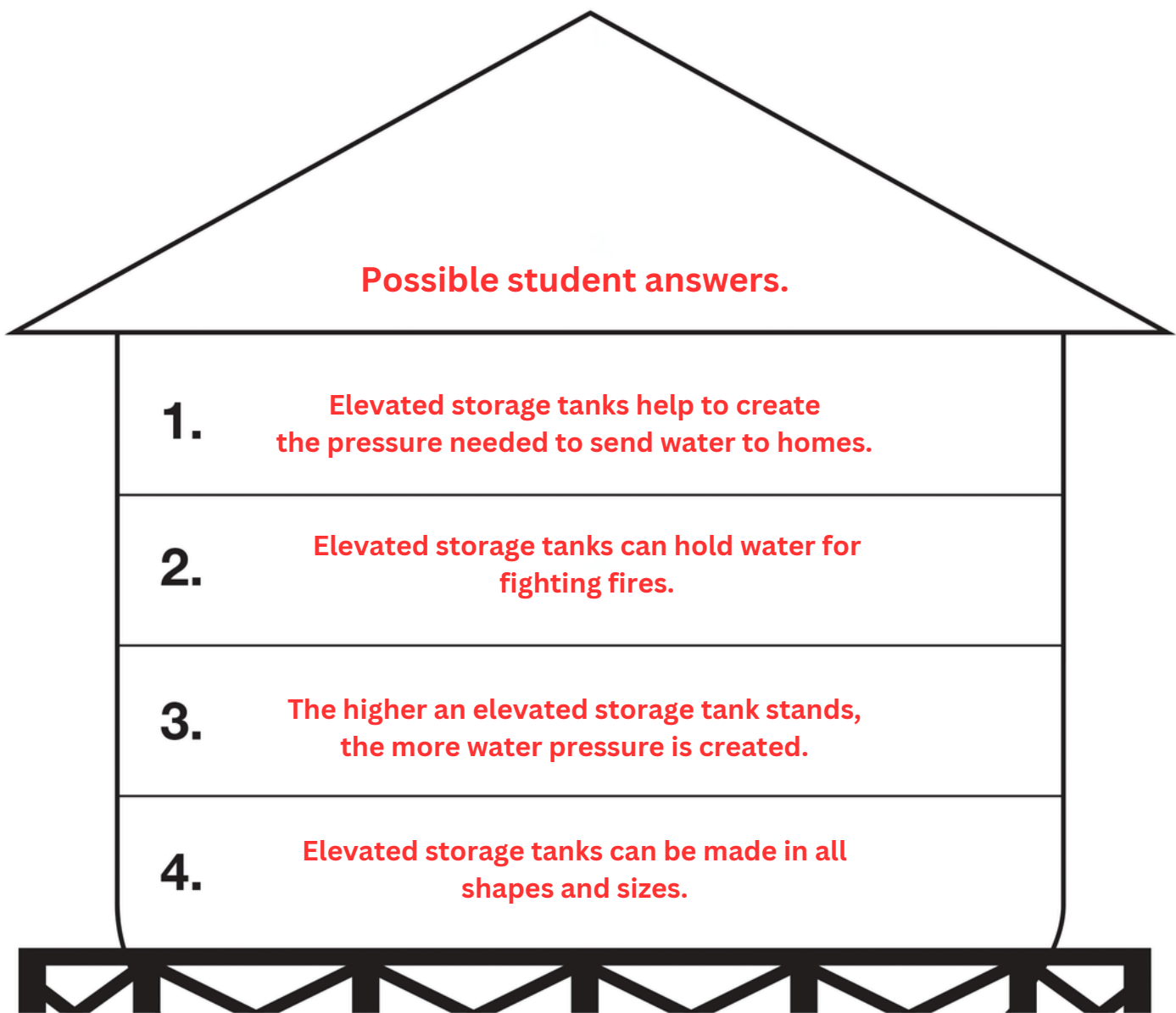
Lesson 1

Water Tower Fact Finder Activity

Elevated storage tanks, also known as water towers, are found in almost every town. They are very important for helping create water pressure to be able to send water to your house.

Instructions:

Fill the water tower with four important facts from the video you just viewed. Put the most important fact at the top in the number one section with the least important fact at the bottom in the fourth section. Then, explain why you chose the first fact as the most important.



Fact number one is most important because:

Student answers may vary. If water is not pressurized it will have a difficult time reaching your home and you may not have enough water for daily use.

Lesson 2



Answer Key

When Water Stops Flowing Math Activity

Unexpected storms or breaks in pipelines can cause water to stop flowing. FEMA recommends planning for at least three days without water in case of an emergency. One person drinks about one gallon of water a day.

Instructions:

Read each scenario below and find out how many gallons of drinking water need to be stored to properly prepare for a water interruption for three days. Shade in the correct number of containers that need to be added together to find the answer. Write the answer on the line.

Drinking Water for 1 Person for 3 Days

$$3 \times 1 = \begin{array}{c} \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \end{array} = \underline{3}$$

Drinking Water For A Family of 3 for 3 Days

$$3 \times 3 = \begin{array}{c} \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \end{array} = \underline{9}$$

Drinking Water For A Family of 3 and 1 pet for 3 Days

$$3 \times 4 = \begin{array}{c} \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \\ \text{3} \end{array} = \underline{12}$$

BONUS: The Martinez family wants to be prepared incase of a water interruption in their home. There are four people in the family and they have a cat and a dog. How many gallons of drinking water should they store for at least three days?

18 gallons of water

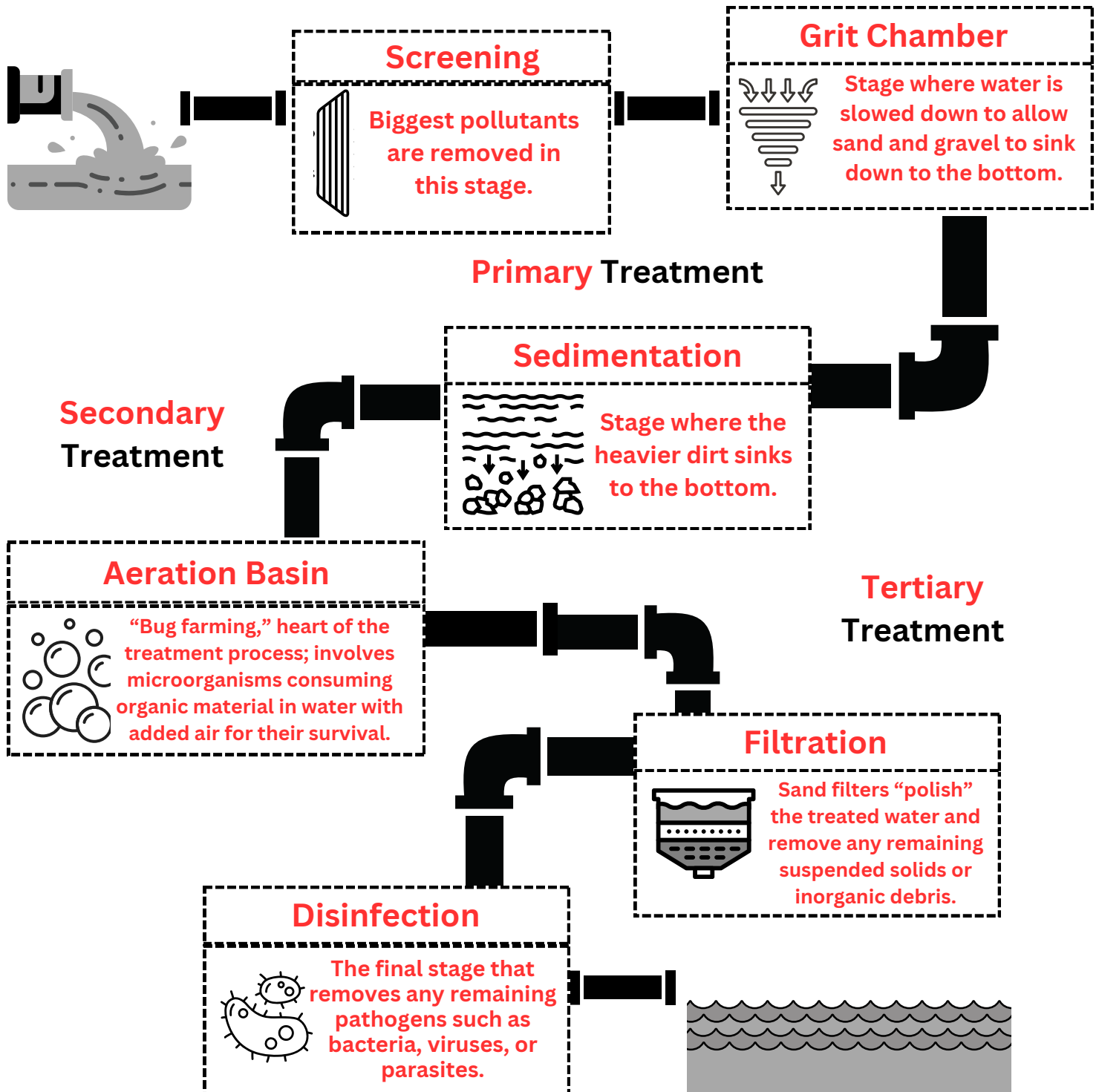
Answer Key

Lesson 3

Where Does Wastewater Go? Diagram Activity

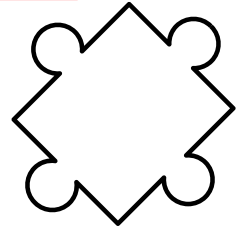
Instructions:

After viewing the "Wastewater Treatment" video, complete the diagram below showing the entire process. You may need to view the video more than once. When you are ready to begin the diagram, start by cutting the definitions, symbols and the terms found on the following page and gluing them in the correct order below. Remember to fill in the primary, secondary, and tertiary treatment stages of the water treatment process on the empty lines.



Lesson 4

Treating Drinking Water Vocabulary Match



groundwater

Underground drinking water that may require only disinfection, since it can be naturally filtered.

microbes

Tiny bugs found in water that can cause illness.

flocculation

The step that stirs the water to get clumps to get larger.

disinfection

The most important step that completely removes, or eliminates, all viruses and bacteria that may remain in the water.

sedimentation

The step where water is slowed down so clumps can settle to the bottom causing water to get clear.

surface water

Drinking water that comes from a river, reservoir or lake that requires a series of treatments.

filtration

The step in which water passes through filtered media removing finer materials and microbes.

coagulate

The first step in surface water treatment that brings together, or clumps, all the solid, muddy material that needs to be removed.



Answer Key

Lesson 5

Everyone Lives in a Watershed Two Truths and a Lie

Instructions:

After viewing the "Watersheds" video, follow the three steps below. Begin by writing three sentences about watersheds and how to protect them. Two sentences must be true and one must be false. You may need to view the video more than once.

1 Student statements will vary.

2 Student statements will vary.

3 Student statements will vary.

Step 2

Write a paragraph about watersheds. Make sure to include the correct answer to the lie.

Student statements will vary.

Step 3

You get to be the teacher in this step. Give this handout to another learner so they can determine which sentences are true and which is false, using your paragraph as a clue. Did they get the answer right?



WaterWorks Board Game Instructions

When you turn on a faucet in your house, water comes out. Have you ever wondered how it gets there? Water gets to your house through pipes. Pipes are tubes that the water company pumps water through to get it to you. The WaterWorks game lets you be the water company and get water to your neighborhood!

Game Preparation Instructions:

1. Print the game board pages. A black and white version is available for coloring. Place the pages together so that you create a SAWS logo in the middle that looks like this:



2. Print two copies of the game cards and cut them out.
3. Use buttons, Legos, stones, or uncooked pinto beans for player pieces. You could also borrow player pieces from another game.

Game Play Instructions:

1. Place all the player pieces on Start.
2. Before you start shuffle cards so that they are mixed. The first player selects a card and moves ahead that many spaces.
3. If the player lands on a "leaky pipe" they must stay on that space until the leak is fixed. To fix the leak the player must draw a "2".
4. The first player to get water (their player piece) to the neighborhood wins!
5. Game recommended for 2 to 4 players.



1



2



2



3



4



5



1



2



2



3

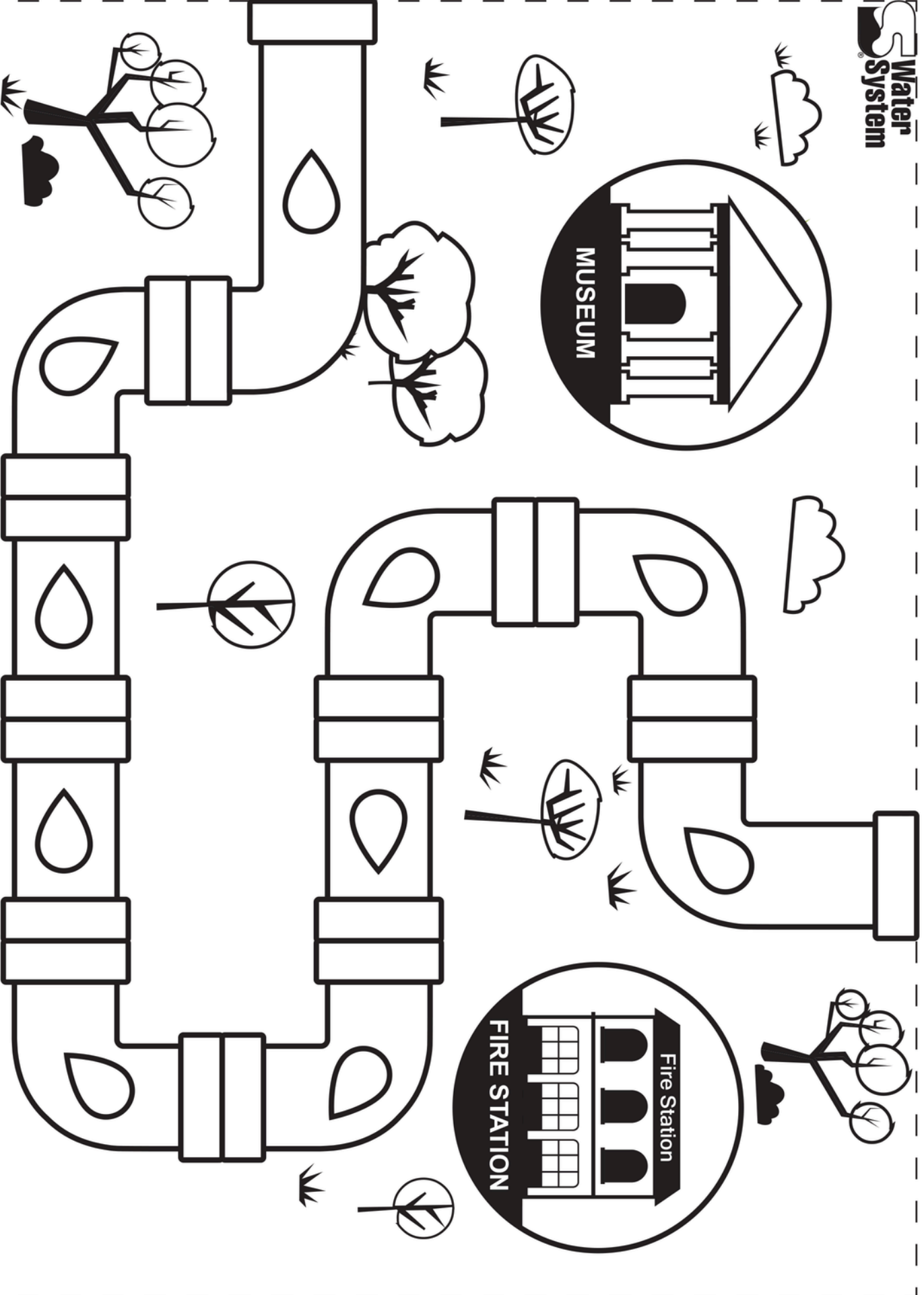


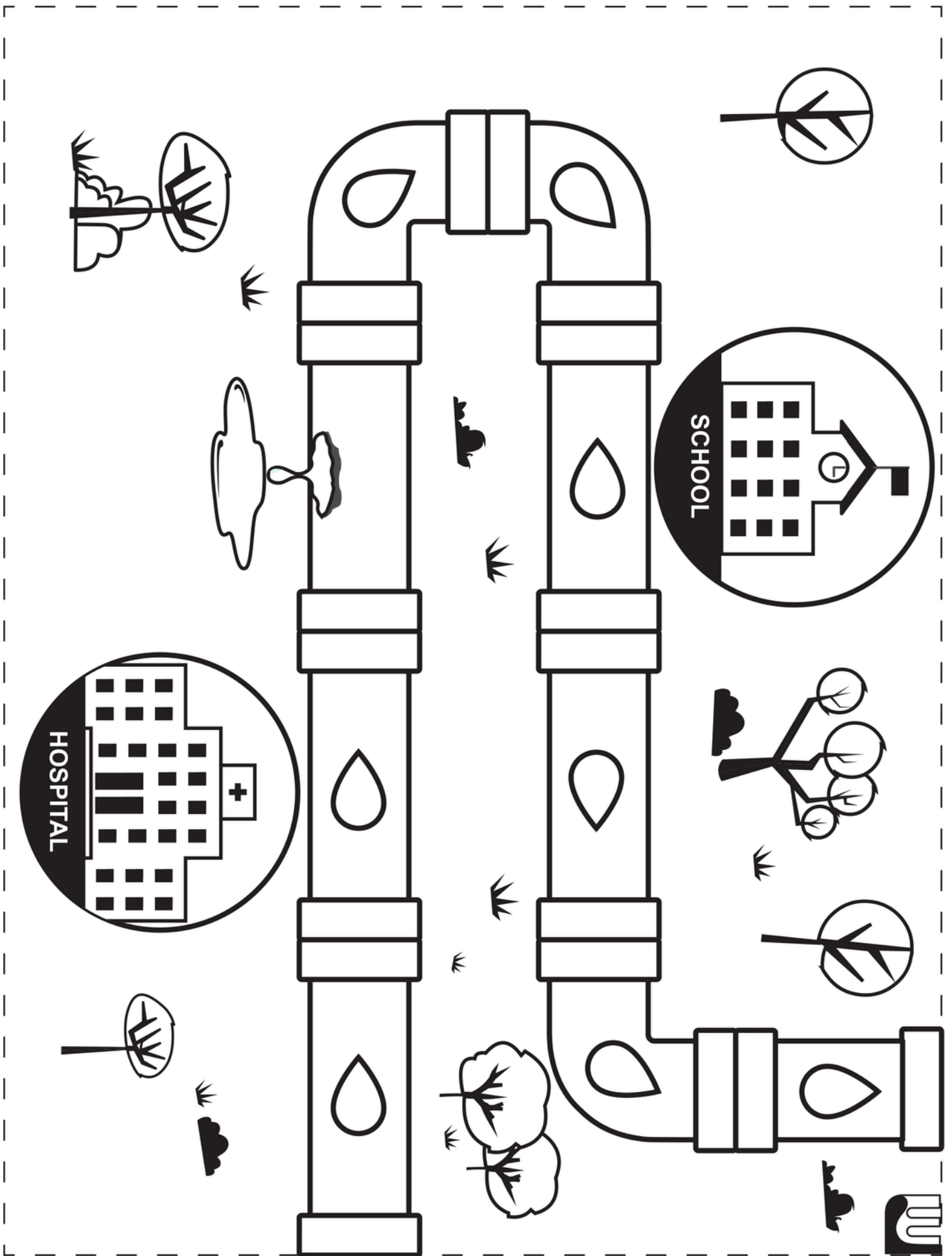
4

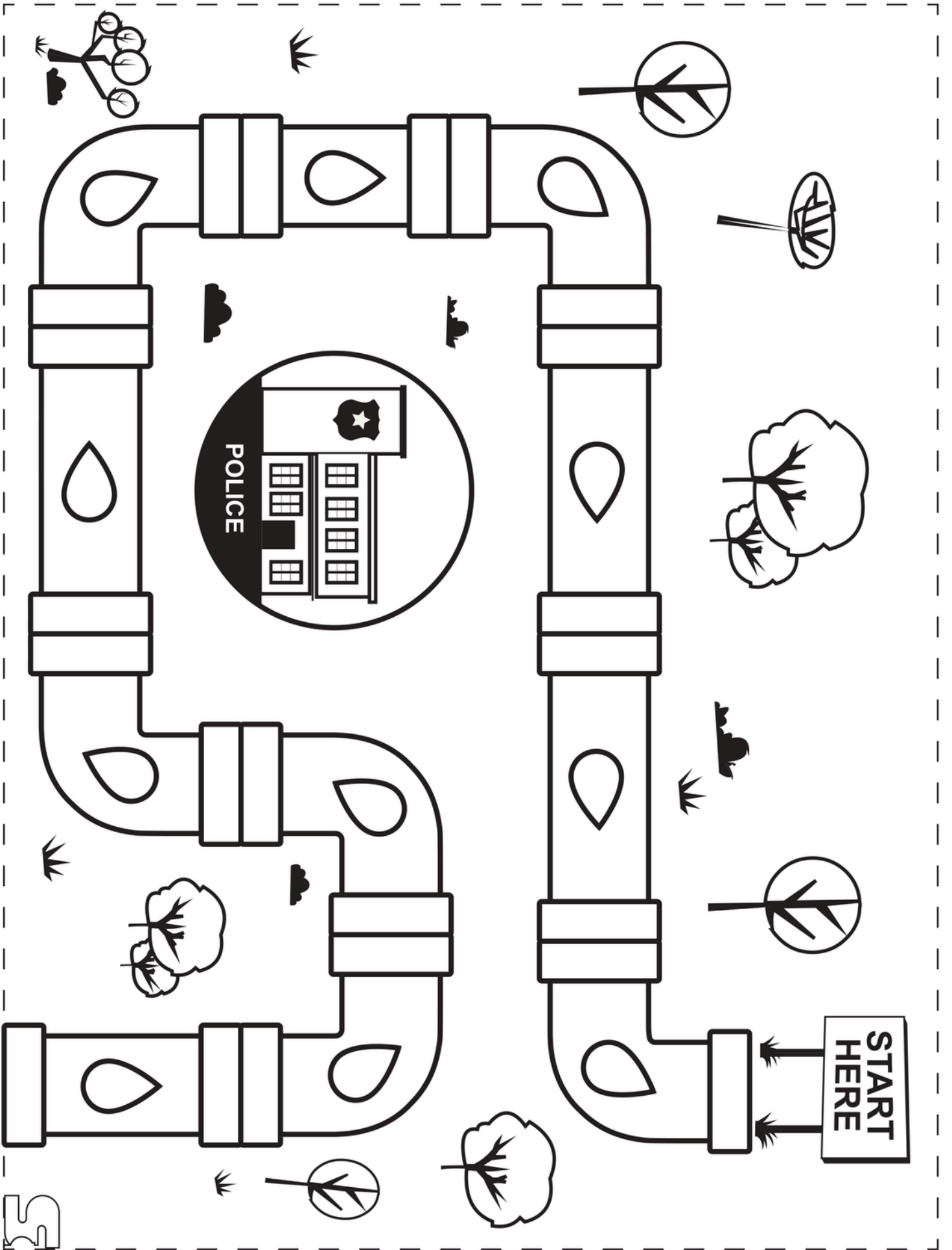


5









START
HERE



POLICE

