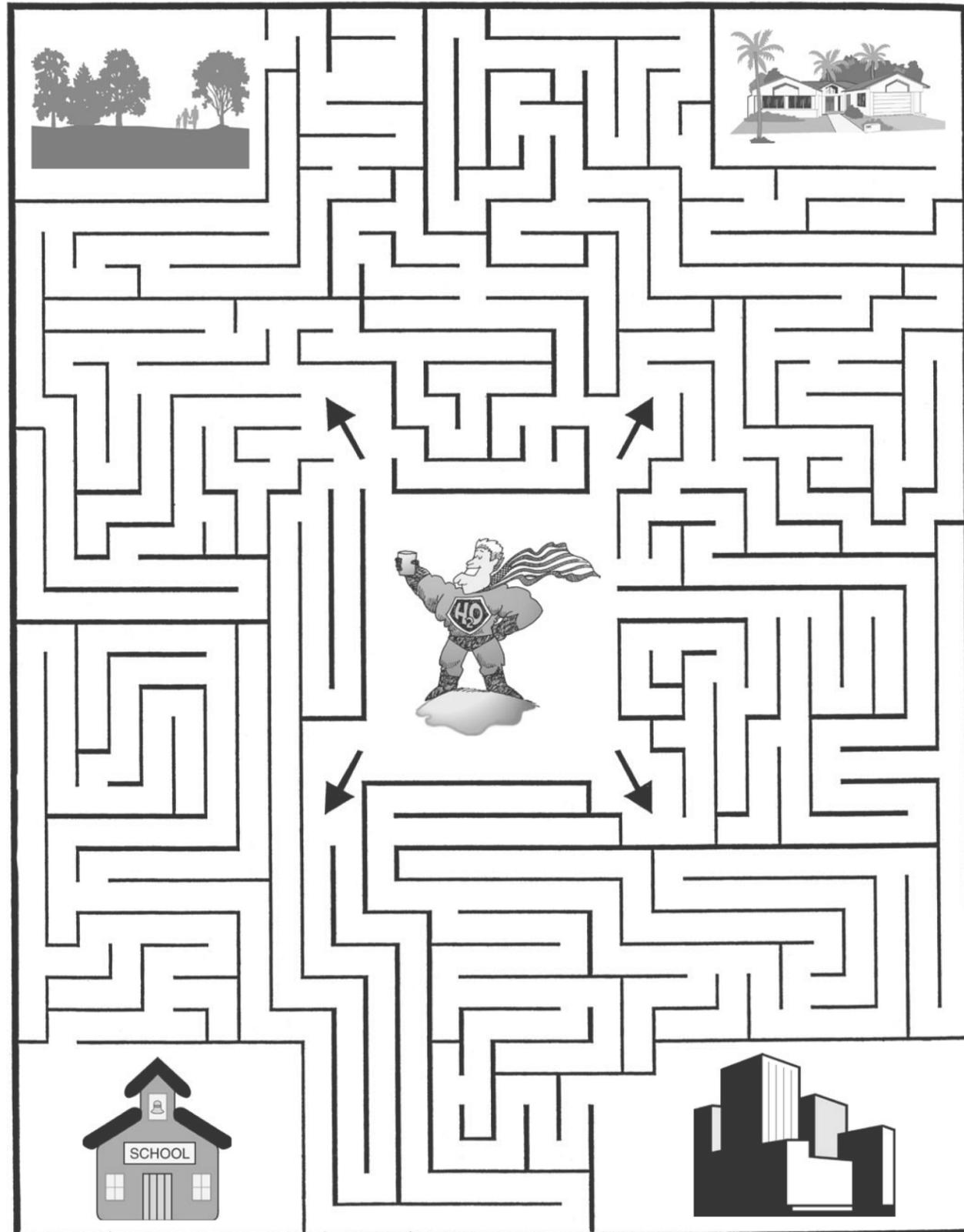


# Maze

Help our water superhero find his way to the park, home, school and business.



# Pure Water San Diego Activity Page



**Test your Pure Water knowledge!**

**W**ater is essential for life. We need it for cooking, cleaning, bathing, watering lawns, and drinking! In San Diego, most of our water is imported, or brought in, from Northern California and the Colorado River. Importing water costs a lot of money. Also, many other people use the water before it gets to San Diego.

The City of San Diego is looking at ways to create a local water supply. With Pure Water San Diego, the City is making the water San Diegans flush down their drains clean enough to be used for drinking again. This activity page will help you learn more about the Pure Water Program.

## Match the Technology

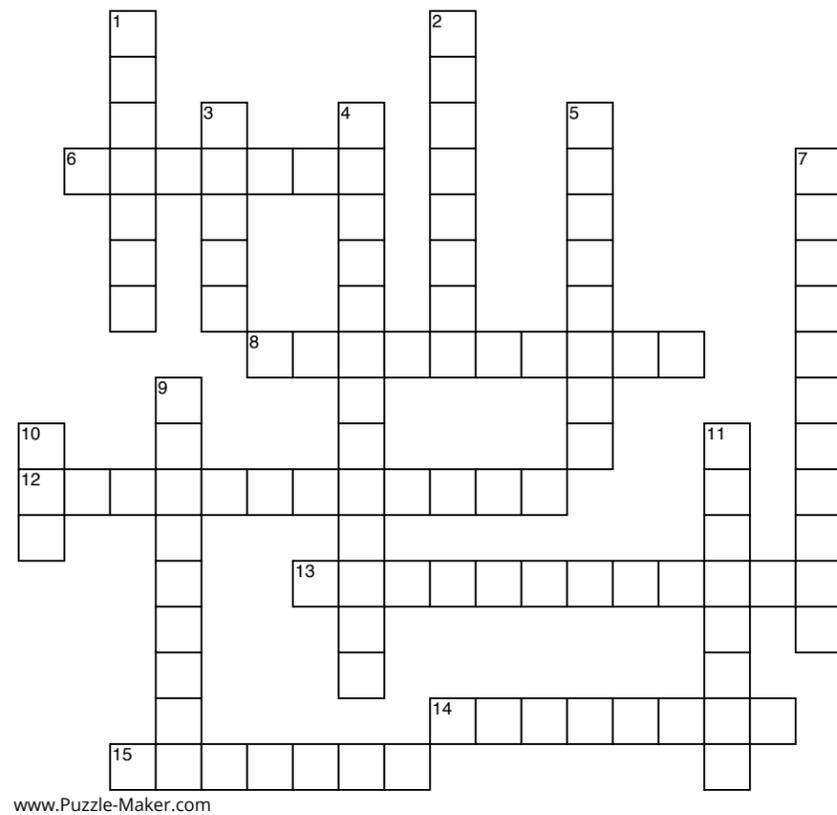
Five technologies used in the Pure Water Program are described below. Write the name of the technology underneath the matching picture.

- Ozonation:** Ozone gas destroys germs and breaks down contaminants while the water is sent through a long series of pipes.
- Biological activated carbon (BAC) filters:** filters covered in "helpful" bacteria eat anything that is or was living. The "helpful" bacteria are removed in the next step.
- Membrane filtration:** Consists of "straws" with holes in the side that suck in the water and keep out the contaminants. The Pure Water Program uses microfiltration and ultrafiltration.
- Reverse osmosis:** Forces water through several sheets of thin plastic membranes to filter out anything bigger than a water molecule, such as minerals and contaminants. The RO membranes are like microscopic strainers.
- Ultraviolet disinfection/advanced oxidation:** Intense light, like sunlight, that works with sodium hypochlorite to zap any remaining contaminants in the water.



\_\_\_\_\_

# Crossword Puzzle



www.Puzzle-Maker.com

Determine the word that best fits the clues and definitions provided. Fill the word in the crossword puzzle.

### ACROSS

- 6 \_\_\_\_\_ water. Another name for "drinking water."
- 8 Untreated water collected in the sewer system from homes and businesses (e.g., from bathtubs, showers, bathroom sinks, clothes washers, toilets, kitchen sinks, and dishwashers).
- 12 A reduction in water waste. Saving water.
- 13 Removing or destroying microorganisms in water that may be harmful to humans.
- 14 \_\_\_\_\_ water. Wastewater that has undergone a high level of treatment at a reclamation facility so that it can be reused to water plants. This water is transported in purple pipes. This is the water that comes into the Pure Water Facility.
- 15 A period of time when rainfall is far below average.

### DOWN

- 1 Reverse \_\_\_\_\_ (RO). A high-pressure membrane filtration process that forces water through several sheets of thin plastic membranes to filter out minerals and contaminants. The RO membranes are like microscopic strainers.
- 2 \_\_\_\_\_ filtration. A filtration process used to separate particles from the water. Pure Water San Diego uses microfiltration and ultrafiltration.
- 3 \_\_\_\_\_ cycle. The movement of water as it evaporates from rivers, lakes or oceans, returns to the earth as precipitation, flows into rivers and evaporates again. This cycle is aided in urban areas by modern technology, which includes wastewater and drinking water treatment facilities.
- 4 \_\_\_\_\_ Pure Water Facility. This test plant is examining the use of water purification technology to provide safe and reliable water for San Diego's future.
- 5 \_\_\_\_\_ water. A water source that begins in one region and is transferred to another region. For example, San Diego's water comes from Northern California or the Colorado River.
- 7 A type of germ that the water purification process removes.
- 9 A man-made lake or tank used to collect and store water.
- 10 Abbreviation for personal care products. Products that can be found in wastewater such as shampoos, fragrances, soap, and deodorant.
- 11 \_\_\_\_\_ water. The water that the demonstration Pure Water Facility produces. It starts as recycled water and is treated with ozonation, biological activated carbon filters, membrane filtration, reverse osmosis and ultraviolet disinfection/advanced oxidation.

# Word Search

Words related to the Pure Water Program are hidden in the puzzle to the right. Find the Word Bank words in the puzzle. Words may go right, left, up, down, and diagonal.

### WORD BANK:

- ADVANCED
- DEMONSTRATION
- DISINFECTION
- MEMBRANE
- MICROFILTRATION
- PURE
- RECYCLED REVERSE
- OSMOSIS
- ULTRAVIOLET
- WATER



# Water Quiz

Below are statements about water. Some are true. Some are false. Circle T if a statement is true and F if a statement is false.

- |  | True/False |
|--|------------|
| 1. The water coming out of your faucet contains molecules that the dinosaurs drank.  | T F        |
| 2. Most of San Diego's water supply comes from local rainfall.   | T F        |
| 3. San Diego is at the end of the pipeline when importing water from the Colorado River and Northern California.           | T F        |
| 4. The City of San Diego's "purple pipes" carry recycled water to use on lawns and for industries.                         | T F        |
| 5. Recycled water from the purple pipes is safe to drink.  | T F        |
| 6. Pure Water San Diego has proven that San Diego can safely purify recycled water to make it drinkable.                   | T F        |
| 7. A reservoir is a man-made lake or tank used for storing water.  | T F        |
| 8. The Pure Water Program uses membrane filtration, reverse osmosis and ultraviolet disinfection to purify recycled water. | T F        |
| 9. San Diego is the first in the nation to use water purification technology.  | T F        |
| 10. If you drink tap water at Disneyland, you are most likely drinking purified water.                                     | T F        |