

### BEFORE YOU VISIT

These discussion questions and activities are designed to spark your students' interest in the exhibition and to prepare them for the concepts they'll encounter. You may wish to review the material prepared for other grade levels as well, and adapt them for your class.

#### Discussion

To start your students thinking about what they'll encounter in the exhibition, ask one or more of the following questions:

- What are some activities, such as sports and games, that are possible because of water?
- How long could you live without water?
- How does access to water affect your day-to-day existence? How would your life change if water became scarcer, or was not clean?
- Where does the water that we use at school and at home come from? Where does it go after we're done with it?
- How do humans change the quality of water?
- What do you know about water as a resource?
- How does water affect where people settle? How do these patterns of growth affect the environment?
- Is clean water a human right? Who owns water?
- Why is it important not to waste water?

#### Activities

##### Water Calculator

**Objective:** To visualize daily water use

**Procedure:**

1. Ask students to list all the ways they use water. Have the class share responses and compile them on the board.
2. Break students into teams and ask them to estimate how much water each activity requires.
3. Ask teams to visit the **US Geological Survey Water Calculator** website at [ga.water.usgs.gov/edu/sq3.html](http://ga.water.usgs.gov/edu/sq3.html) to calculate how many gallons of water each student uses per day.
4. Ask teams to compare their individual results. Have them share ways in which they can conserve water, and recalculate their water use.

##### Water Footprint

**Objective:** To understand how much water is required to produce what we consume

**Procedure:**

1. Visit [waterfootprint.org](http://waterfootprint.org) and select ten or more products from the Product Gallery. Print each product page, which includes an image and its water footprint data. Post them on the board. You may wish to cover up the data.
2. In a class discussion, point out one product image. Ask students to list all the ways in which water is involved in producing that product, and estimate how many gallons of water are used in its production. Reveal the actual total.
3. Have students pick three other products that interest them and make similar lists and estimates.
4. Have students compare their estimates with the actual data, and ask them to write a reflection about any findings that surprise them.

### NEW YORK STATE SCIENCE CORE CURRICULUM STANDARDS

Your visit to the *Water: H<sub>2</sub>O = Life* exhibition can be correlated to the following standards.

#### The Living Environment

**Standard 4:** Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

**Key Idea 1:** 1.1b, 1.1c, 1.1d, 1.1e, 1.1f

**Key Idea 5:** 5.1a, 5.1b, 5.1c, 5.1d

**Key Idea 6:** 6.1a, 6.1b, 6.1c, 6.1d, 6.2b, 6.3a, 6.3c

**Key Idea 7:** 7.1a, 7.1b, 7.1c, 7.2a, 7.2b, 7.2c, 7.3a, 7.3b

#### Physical Setting/Earth Science

**Standard 4:** Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

**Key Idea 1:** 1.1a, 1.1i, 1.2e, 1.2f, 1.2g

**Key Idea 2:** 2.1a, 2.1c, 2.1d, 2.1i, 2.1u, 2.2b, 2.2c

Visit [amnh.org/education/water](http://amnh.org/education/water) for a full listing of relevant:

- National Science Education Standards
- New York State Science Core Curriculum Standards
- New York City Scope & Sequence
- National Curriculum Standards for Social Studies
- New York City Mathematics Standards

# WATER: H<sub>2</sub>O = Life Student Worksheet

## 1. Explore Global Water Problems & Solutions

This exhibition tells stories of how people around the world use water. Read about local stories from the **Water Works, Not a Drop**, and **Water Everywhere** areas of the exhibit. Pick two cities or countries to investigate and mark their locations on the map.



What problems are unique to each?

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What role does local technology play in helping people use water efficiently?

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What are some examples of the negative effects of technology?

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## 2. Explore Water Quality

Go to the **Healthy Water** area of the exhibition to explore our drinking water.

Where does bottled water come from? What are its effects, both beneficial and harmful, on humans and on the environment?

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Compare the ways in which bottled and tap water are produced, how safe they are, and how they affect the environment.

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## 3. For Further Exploration

As you walk through the exhibition, think of things about water that make you curious. On the back of this sheet, write down five or more questions you have about water.