

**Outline of Lesson
Growing with Water
Unit 2, Lesson 5
Grade 1-3**

Lesson Time: 60 Minutes

Lesson Outline:

- 1. Introduction**
 - Water and your digestive system
- 2. The Importance of Water**
 - Function of water in the body
 - Sources of water
- 3. Experiential Learning: Gardening Indoors or Outdoors**
 - Planting peas indoors or peas and radishes outdoors
 - Make connection between plant needs for water and people needs for water
- 4. Physical Activity**
 - Food Group Twister game

Student Learning Objectives:

By the end of this lesson students will:

- Be able to identify signs of dehydration.
- Discuss the function and importance of water in the body, and sources of water.
- Discuss how much physical activity they need each day.
- Demonstrate watering and planting methods that produce healthy plants.


References:

- Kite, L. Patricia. Gardening Wizardry for Kids. Reprinted by arrangement with Barron's Educational Series, Inc., 1999.
- Duyff, Roberta L. Complete Food and Nutrition Guide. John Wiley & Sons, Inc., 2002.
- Kitsap County Food \$ense Program. Nutrition in Me (Level 2 / Lesson 3). Washington State University Extension, 2004.
- Evers, Connie Liakos. How to Teach Nutrition to Kids. 24 Carrot Press, 1995.

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Growing with Water

Overview (for Teacher)

Pre-Class Preparation	None
Teacher Involvement During Class 	<ul style="list-style-type: none">• Gardening Activity• Twister Game• Assist in behavior management of students.
Post-Class Teacher Responsibilities	<ul style="list-style-type: none">• Serve Snack: Apple sections• Maintain plants in the classroom (lights and watering)
Vocabulary	<p>Cycle – events that are repeated over and over again.</p> <p>Physical Activity – body movements such as riding a bike, walking up stairs and playing at recess that keep you fit and healthy.</p> <p>Water – a fluid that people and animals need to drink every day to stay healthy.</p> <p><u>Grades 2,3:</u></p> <p>Dehydration – when your body does not have enough water in it.</p>
Critical Thinking Activity	None
Supplementary Activities	Student Assessment
Web Resources	Water and Dehydration in Kids: http://kidshealth.org/kid/watch/er/dehydration.html
Suggested Books for Reading in the Classroom	Frost, Helen. <u>Digestive System</u> . Pebble Books, 2000.

Growing with Water

EALR & GLE Alignment

EALR	GLE	Lesson Applications
<p>Science 1.1 Understand how properties are used to identify, describe, and categorize substances, materials, and objects and how characteristics are used to categorize living things 1.2 Understand how components, structures, organizations and interconnections describe systems</p>	<p>1.1.1 Understand simple properties of common natural and manufactured materials and objects 1.2.1 Understand that things are made of parts that go together</p>	<ul style="list-style-type: none"> • The Importance of Water • Physical Activity: Food Group Twister
<p>Health and Fitness 1.4 Understand the relationship of nutrition and food nutrients to physical performance 2.1 Recognize patterns of growth and development</p>	<p>1.4.1 Identify the nutrients provided by a variety of foods and describe how bodily functions and physical performance are affected by food consumption 2.1.1 Describe the structure and function of human body systems</p>	<p>The following apply to all Health and Fitness GLEs:</p> <ul style="list-style-type: none"> • Introduction • The Importance of Water • Physical Activity: Food Group Twister
<p>Communication 1.2 Listen and observe to gain and interpret information 3.2 Work cooperatively as a member of a group</p>	<p>*GLE not available at this time</p>	<ul style="list-style-type: none"> • Experiential Learning: Gardening • Physical Activity: Food Group Twister
<p>Writing 1.3 Apply writing conventions 2.3 Write in a variety of forms</p>	<p>*GLE not available at this time</p>	<p>The following apply to all Writing EALRs:</p> <ul style="list-style-type: none"> • Supplemental Activity: Student Assessment
<p>Reading 1.3 Build vocabulary through wide reading</p>	<p>1.3.2 Understand and apply content/academic vocabulary</p>	<ul style="list-style-type: none"> • Read overheads with teacher

Growing with Water

Preparation Outline

Activity Supplies

⊗ *Items marked with this symbol may not be purchased using FSNE funding, nor included as part of cost share.*

Introduction

- 1 bottle of water

Importance of water

- 2 clear jars
- 2 cups of apple juice (1 cup per jar)
- 1 clear plastic container (big enough to hold 8 cups of water)
- 1 cup measure

Water in foods

- 5-6 food models of fruits and vegetables

Gardening

- ⊗ Pea seeds, radish seeds and/or transplants
- ⊗ Popsicle sticks
- ⊗ Marker
- ⊗ Watering can

Food Group Twister

- Food Group Twister game

Healthy Snack

- 4 apples
- 1 apple corer per class

Review

- Water bottle
- Classroom Tasting Challenge checklist

Overheads	Digestive tract diagram
Student Handouts	None
Teacher Handouts	Student Assessment and Answer Key
Changes for K and ELL Classes	None
Rainy Day Activity Supplies	<ul style="list-style-type: none">⊗ Plastic seed trays⊗ Potting soil⊗ Small trowel (or use hands)

Growing with Water

Outline

Content

Introduction and Lesson Overview (5 Min)

- **Digestive system**



- Today we will talk about water and how it helps our bodies to be healthy. We also will practice what we know about food groups by playing a game that will get our bodies moving.
- When we put water into our bodies and food into our bodies, it doesn't just fall to the bottom of our feet. The food and water go through our digestive system. Water helps this system run smoothly. **Show digestive tract diagram if time.** Water helps food move through our digestive system. (Trace the path of water from the mouth through the system and out the bottom on the overhead.)

The Importance of Water (15 Min)

- **Role and function of water in the body**

- Let's talk about water. (Hold up a water bottle.)
- Did you know that your body is more than half water?
 - Every part of the body needs water. In fact, water is the nutrient your body needs most.
 - Water washes out your mouth, throat and other digestive organs, keeping the whole system clean and running smoothly.
 - Water helps carry nutrients and oxygen to all your body parts and carries waste products away.
 - Water also helps our bodies to cool off if we are too hot. Have you ever felt too hot when playing outside? Do you notice that you feel wet? That is sweat, or water from inside your body that comes through your skin to cool you off.
 - All living things need water. The fact is that without water there would be no people, plants or animals on earth.

- **Discuss dehydration**

- What do you think happens if we don't get enough water? (we dry out – get dehydrated)
- If our bodies don't get enough water, we become "**dehydrated.**" Dehydration is really dangerous; we can become tired, our muscles can cramp, or we can get a bad headache.
- Did you know that by the time you feel thirsty, your body is already dehydrated? This is a good reason to drink water before you might feel thirsty, especially if you know you are going to be active, such as before going out to recess.
- When water is finished doing its job in our bodies, we let go of it into the toilet. You can look at the color of

- **Show apple juice and add water**
- **How much water do we need?**
- **Sources of water**

your pee, also called urine, and see if you are getting enough water. If it looks like lemonade, or lighter, then you have enough water in your body for your body to do its job. If your urine looks dark like apple juice, then you need more water. (**show students the two jars of apple juice**) Gradually add water to one jar in order to lighten the liquid – demonstrating the effect of adequate water in our system).

- **Hold up a clear plastic container of water containing 8 cups of water.** We need 6 to 8 cups of fluids each day, and more if it is hot out or if you are very active - that means running around and playing a lot.

Sources of water in our diet

- Water can come from drinks, and from foods that we eat.
- Some healthy examples of drinks that have water are
 - Water
 - Milk
 - 100% fruit juice
- Healthy examples of foods that have water include “juicy” fruits and vegetables such as:
 - Lettuce
 - Oranges
 - Tomatoes
 - Berries
 - Chard
 - And many more!
- There are other drinks that have water in them, that are ok to drink sometimes, but should be chosen less often because they have added sugars and food coloring that can be unhealthy for our bodies. Some examples are:
 - Soda pop
 - Fruit flavored drinks
 - Sports drinks
- Ask students to tell you which drink they think is healthiest for them to choose most often. (Water)
- Some suggestions for making water more palatable for those who say they don’t like the flavor: add lemon or lime, dilute juice with extra water.

Experiential Learning: Gardening (20-30 Min)

- **Split class into two**

- We are going to split into two groups and take turns planting and then playing a game that includes physical activity. When we move our bodies around, by exercising, playing or working, we are physically active.

groups

- **Introduce Physical Activity**

- **If weather is good, plant pea and radish seeds and transplants outside. If weather is bad plant peas inside.**



- Ask the students what they think the words "physical activity" mean. Explain that physical activity is body movement such as riding a bike, walking up stairs and playing at recess that keeps you fit and healthy. Ask the students how much physical activity they think they need each day. Explain that they need at least 1 hour of physical activity each day to stay fit and healthy.
- Being physically active is an important part of being healthy. When we use our bodies, we help them to grow well. When we garden we are physically active.
- Divide students into two groups: one will garden with the CHANGE educator and the other will play food group twister with the teacher.

Planting Peas - Indoor Gardening

Work with students planting:

- Students make a hole that is $\frac{1}{2}$ inch deep.
- Plant a seed, cover with soil.
- Label seeds.
- Gently water then cover flat with the plastic cover, and place under the grow lights.
- Planting into the flats with plastic covers will allow your class to see the water cycle in action as water condenses and collects on the plastic cover, and then returns to the soil.

Outdoor Gardening: Planting Peas and Radishes

- **Review with students the garden rules and proper planting techniques.**
- **Peas** – poke pea seeds into the soil about $\frac{1}{2}$ inch deep and carefully cover with soil, water thoroughly. **Label your row of peas.**
- **Radishes** – plant radishes in rows about an inch or two apart then cover them with about $\frac{1}{4}$ to $\frac{1}{2}$ inch of loose soil, water well. **Label your row of radishes.**

LESSON LINK

While students are planting walk around and discuss the importance of water to their plants.

- Remind them that all food comes from soil but the soil must have enough water in it for the plants to absorb through their roots. Because just like people, plants can get dehydrated and sick if they don't get enough clean water to drink. Plants, like people, need the right amount of water to stay healthy. If they don't get enough water, they can't take up nutrients from the soil and transport them to all their plant parts. If they get too much water, the nutrients can be washed away

<ul style="list-style-type: none"> • Wash Hands 	<p>(diluted) so plants may also get sick if they are over-watered.</p> <p><u>Hand Washing</u> Remind students that they need to wash their hands after gardening. Each student should wash his or her hands with warm water and soap for 20-25 seconds.</p>
<p>Physical Activity</p>	<p><u>Food Group Twister</u></p> <ul style="list-style-type: none"> • CHANGE educators will bring a Food Group Twister game. Other classrooms using CHANGE curriculum can adapt a regular Twister game by taping food group pictures on the colored dots or making laminated pictures to tape on the floor. • One student spins the dial and calls out the food that the dial lands on. Participating students put their feet or hands onto the appropriate spot that matches the food group of that food.
<p>Healthy Snack: Apple slices</p>	<p>Leave 3 to 4 apples & 1 apple corer per class. Tell students that they need to remind their teacher to give them the healthy snack of apples that is high in water. Students should wash hands before eating their snack.</p>
<p>Review and Reflection</p>	<ul style="list-style-type: none"> • Hold up a water bottle. In this lesson we talked about water. Why is water good for us? <ul style="list-style-type: none"> • Keeps us hydrated • Keeps the digestive system clean • Keeps our bodies at the right temperature • Water helps grow healthy plants, and healthy plants make healthy food for people • Classroom Tasting Challenge: After tasting the <u>Apple Slices</u>, ask students to raise their hands to show you how many students tasted, liked or did not like the snack. Record the number of students who raise their hands in the appropriate column on your Classroom Tasting Challenge checklist, out of the total number of students in class that day.

Lesson Materials

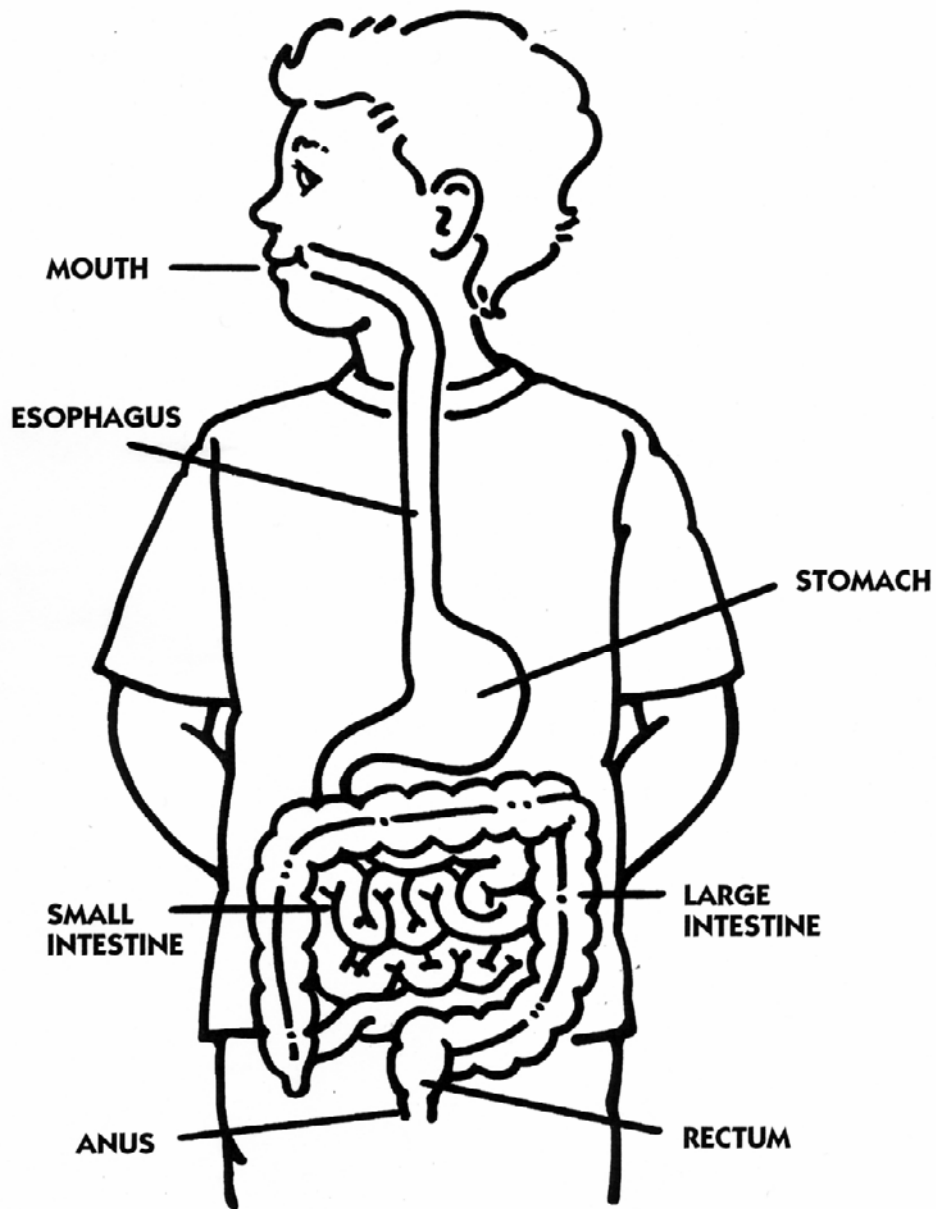
Growing with Water

- **Digestive Tract Diagram**

Supplementary Activities

- **Student Assessment Grades K-1**
- **Assessment Key**
- **Student Assessment Grades 2-3**
- **Assessment Key**

DIGESTIVE DIAGRAM



Enlarge and reproduce for educational use.

Growing with Water

Name: _____ Date: _____

1. Why do we need to drink a lot of water?

We need to drink a lot of water because _____

2. Draw and label two foods that give you more water in your body:

Growing with Water

1. Why do we need to drink a lot of water?

We need to drink a lot of water because: (any of the following) it helps keep our body cleaned out, because our bodies are mostly made of water, because it keeps us from getting dehydrated, keeps body from getting too hot

2. Draw and label two foods that give you more water in your body:

Any of the foods discussed in class: most fruits and vegetables

Growing with Water

Name: _____ Date: _____

1. How many cups of water does every kid need each day? _____

2. What are two ways for you to get water besides drinking plain water?

1. _____

2. _____

3. Why do our bodies need water?

4. What happens when you don't drink enough water?

5. If you drink 2 cups of water in the morning, 2 in the afternoon, 1 before dinner, and 1 with your dinner, how many cups of water did you drink all together? _____

*Mind Bender

6. How many cups are in a gallon? _____

Clues to Use

4 cups=1 quart

4 quarts=1 gallon

Growing with Water

1. How many cups of water does every kid need each day? 6-8
2. What are two ways for you to get water besides drinking plain water?
 1. Eat food with water in it (such as fruit or vegetables)
 2. Drink other beverages with water in them (such as juice with water, milk, water with lemon)
3. Why do our bodies need water? any of the following: to keep our digestive system clean, to get nutrients and oxygen to all body cells, to keep us from getting dehydrated, because our bodies are mostly made of water
4. What happens when you don't drink enough water? You get dehydrated (this could make you feel sick: headache, dizzy, etc.)
5. If you drink 2 cups of water in the morning, 2 in the afternoon, 1 before dinner, and 1 with your dinner, how many cups of water did you drink all together? 6

*Mind Bender

6. How many cups are in a gallon? 16

Clues to Use

**4 cups=1 quart
4 quarts=1 gallon**