

# *The How and Why of Digestive Disorders*

## Lesson Plan

**Grade Level:** 9-12

**Curriculum Focus:** Health Skills

**Lesson Duration:** One to two class periods

### ***Student Objectives***

- Research one common problem of the digestive system, such as constipation, gas, lactose intolerance, or ulcers.
- Create a brochure, similar to one found at a doctor's office, that describes the problem, its causes, symptoms, and possible treatments.

### ***Materials***

- Discovery School video on *unitedstreaming: Managing Your Health: The Digestive System*  
Search for this video by using the video title (or a portion of it) as the keyword.

Selected clips that support this lesson plan:

- The Basics
  - Extreme Heartburn
  - Ulcers
  - Lactose Intolerance
  - Colonoscopy
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- Paper (8 1/2 x 11 inches)
  - Pens, pencils
  - Computer with Internet access

### ***Procedures***

1. Begin the lesson by reviewing the major organs of the digestive system and the function of each. Make sure your discussion covers at least the following parts of the digestive tract: esophagus, stomach, small intestine, large intestine, and colon. You will find a good overview at the Web site below.

#### **Discovery Health: Healthy Digestion**

<http://health.discovery.com/centers/digestive/digestion.html>

2. Ask students to name some of the problems of the digestive system covered in the video. Challenge students to link each condition with the appropriate part of the digestive tract. Below are some common digestive problems.
  - Nausea
  - Diarrhea
  - Constipation
  - Acid indigestion (heartburn)
  - Gastroesophageal reflux disease (GERD)
  - Ulcer
  - Lactose intolerance
  - Colorectal polyps or colorectal cancer
3. Have students work individually to create a patient brochure about one digestive problem. The brochure, similar to one they might see in a doctor's office, should describe the problem, its causes, symptoms, and possible treatments. In addition, the brochure should be written and designed for a specific audience, such as kids, teens, young adults, middle-age adults, or older adults. When selecting an appropriate audience, ask students to consider what age a patient might be when he or she has questions about that problem. Each brochure should include age-appropriate illustrations or diagrams to help explain the digestive problem.
4. Finally, have students title their brochure in the form of a question a patient might have. Examples:
  - "Why do I burp?" (for kids)
  - "Why do I throw up?" (for kids)
  - "Why do dairy products make me sick?" (for teens)
  - "Are you taking antacids every day?" (for middle-aged adults)
  - "Is it time for a colonoscopy?" (for older adults)

The following Web sites will help students in their research:

- Discovery Health: Digestive Conditions  
<http://health.discovery.com/centers/digestive/conditions.html>
- GERD  
<http://www.gerd.com/>
- KidsHealth: Lactose Intolerance  
[http://www.kidshealth.org/teen/diseases\\_conditions/digestive/lactose\\_intolerance.html](http://www.kidshealth.org/teen/diseases_conditions/digestive/lactose_intolerance.html)
- KidsHealth: Ulcers  
[http://www.kidshealth.org/teen/diseases\\_conditions/digestive/ulcers.html](http://www.kidshealth.org/teen/diseases_conditions/digestive/ulcers.html)
- Discovery Kids: Your Gross and Cool Body

<http://yucky.kids.discovery.com/flash/body/index.html>

5. Have students create their brochures by folding a piece of paper into thirds. Remind students to include images with labels, whether they import them from a computer file or sketch them by hand.

## Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students were highly engaged in class discussions; they wrote comprehensive and thoughtful brochures that included several relevant facts and clear illustrations.
- **2 points:** Students participated in class discussions; they wrote somewhat compressive brochures that included some facts and at least one illustration.
- **1 point:** Students participated minimally in class discussions; they wrote simplistic brochures with few or no facts or illustrations.

## Vocabulary

### acid indigestion

*Definition:* A burning sensation that seems to occur in the area of the heart and is usually related to spasms of the lower esophagus or the upper stomach

*Context:* Also called heartburn, acid indigestion affects most people at one time.

### colorectal polyps

*Definition:* An abnormal growth of tissue on the inside lining of the colon or rectum

*Context:* Colorectal polyps are usually benign, or non-cancerous, but sometimes they can develop into colorectal cancer.

### gastroesophageal reflux disease (GERD)

*Definition:* A backflow of acid from the stomach into the esophagus; also called reflux or reflux esophagitis

*Context:* If someone has recurring, frequent, and severe heartburn, they may be suffering from GERD.

### lactose intolerance

*Definition:* A condition in which a person cannot digest enough lactose, the sugar found in milk and milk products; occurs when an individual has a deficiency of an enzyme known as lactase

*Context:* Common symptoms of lactose intolerance include abdominal bloating, cramps, diarrhea, gas, and nausea.

### ulcer

*Definition:* A painful sore or hole in the stomach

*Context:* Most ulcers are caused by a specific bacterium, and can be treated by antibiotics.

## Academic Standards



### **National Academy of Sciences**

The National Academy of Sciences provides guidelines for teaching science in grades K–12 to promote scientific literacy. To view the standards, visit this Web site:

<http://books.nap.edu/html/nses/html/overview.html#content>.

This lesson plan addresses the following science standards:

- Life Science: Interdependence of organisms
- Science in Personal and Social Perspectives: Personal and community health

### **Mid-continent Research for Education and Learning (McREL)**

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit link:

<http://www.mcrel.org/compendium/browse.asp>

This lesson plan addresses the following national standards:

- Science – Life Sciences: Understands the structure and function of cells and organisms
  - Language Arts – Writing: Uses the general skills and strategies of the writing process, Gathers and uses information for research purposes
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### **Support Materials**

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the [Discoveryschool.com](http://www.discoveryschool.com) Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>