

# The Digestive System

## Summary

Through a lesson on the digestive system, the students will incorporate a science lesson to help understand that a chemical reaction or a physical change can occur when two or more materials are combined.

## Time Frame

1 class periods of 30 minutes each

## Group Size

Small Groups

## Life Skills

Thinking & Reasoning, Communication, Social & Civic Responsibility, Employability

## Materials

For each group:

1 tablespoon milk

1 tablespoon vinegar

1 teaspoon baking soda

1 tablespoon liquid antacid

1 jar

science journals

picture of the human digestive system

rubber gloves and goggles

measuring spoons

## Background for Teachers

Study the provided Internet sites to understand the digestive system of the human being. Allow the students to observe the changes with each step of the experiment to see how matter changes when different substances are mixed.

## Student Prior Knowledge

Science journal keeping process, group dynamics, and collaboration rules.

## Intended Learning Outcomes

1a, 1c. 1d. 1i. 4a. 1h

## Instructional Procedures

### **STEP ONE: THE DIGESTIVE SYSTEM**

Use a picture of the human digestive system (see websites listed in Background for Teachers) to explain that the digestive system consists of the parts of the body that change the food we eat. It is in this changed state that food can be used by the different body cells in our bodies.

### **STEP TWO: THE EXPERIMENT**

Explain to the students that many foods we eat interact with one another in our digestive system; namely, our stomachs. Ask if anyone has ever experienced a stomach ache from eating certain

foods.

Divide the class into groups of four. Assign each group member one of the following roles:

leader

reporter

recorder

materials person

The leader will take charge of the group. The reporter will share the findings of the group with the rest of the class near the end of the lesson. The recorder will take notes about the experiment for the group for their science journals. The materials person will gather the necessary materials for the experiment.

Ask those students in charge of materials to collect the supplies for their group. Although none of the materials are toxic, goggles and rubber gloves are recommended, not only to emphasize the serious nature of an experiment, but to protect against harm from any accidental splashing.

Do the experiment with the class so that they can follow the steps accurately. Explain that the jar represents the human stomach.

Ask what the students had to eat for breakfast. When someone mentions milk, ask the groups to add 1 tablespoon of milk to the jar.

Further the story by telling the students that some people would eat a salad for lunch. Ask for a raise of hands of those who would eat a salad at lunch time. Commend the students for eating vegetables. Continue by stating that some people eat their salad with a vinegar and oil dressing. Ask the students to predict what they think will happen to the milk if they added vinegar to it. Have the students add 1 tablespoon of vinegar. The students will observe the changes to the milk. There is no need to stir the mixture.

The food story continues later that afternoon as you begin to get hungry again. After school your grandfather greets you at the door. He tells you that he has just made his best baking soda biscuits and offers you one. You gladly take one. Ask the students to predict what will happen to the solution in the jar if they add baking soda. Have the students add 1 teaspoon of baking soda to the solution and observe the changes.

Ask the students to quickly think of a way to solve the problem of this gaseous feeling their stomachs may be experiencing at this time. Someone will probably think of a liquid antacid. Ask the group why they think liquid antacid would help. Have the materials people add a tablespoon of liquid antacid to the mixture and observe the changes.

### **STEP THREE: CONCLUSION**

Have the small groups discuss the experiment. Then have the reporters take turns sharing with the class the findings of their experiment. Have the class make a science journal entry describing the findings of their experiment.

### Strategies for Diverse Learners

The small group setting with the different responsibilities is ideal for diverse learners. Students can draw rather than write in their science journals. Those of higher ability can interpret the results with greater preciseness in vocabulary.

### Extensions

1. The groups can add different liquids to the jar to observe the effects the mixtures have. (Science)
2. The students can describe the relationships between the objects using graphs, charts, and diagrams. (Science; Mathematics)
3. Using the 6+1 Traits of Writing, the students can write a story entitled The Day In The Life Of My Stomach. (Science; Health; Language Arts)
4. A life sized outline of the children can be done. Within the outline, students can illustrate the

digestive system as well as other systems of the body. (Arts; Science; Health)

### Assessment Plan

The science journal can be a great tool to assess the understanding of the concepts taught within this lesson.

### Rubrics

[The Digestive System](#)

### Bibliography

[www.ccfa.org/weekly/wkly911.htm](http://www.ccfa.org/weekly/wkly911.htm)

[www.leeds.as.uk/ch6/lectures/anatomy8/html](http://www.leeds.as.uk/ch6/lectures/anatomy8/html)

[www.niddk.nih.gov/health.digest.pubs/digesys.htm](http://www.niddk.nih.gov/health.digest.pubs/digesys.htm)

[www.cyber-north.com/anatomy/](http://www.cyber-north.com/anatomy/)

<http://arbl.cvmbs.colostate.edu/hbooks/pathphys.digestion>

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