

INSPIRE GK12 Lesson Plan



Lesson Title	Digestion: Everyone does it.
Length of Lesson	One (50 minute) class periods
Created By	Calista Guthrie
Subject	Earth Science
Grade Level	8 th grade
State Standards	8 th : 1d (Inquiry); 3c (Life Science)
DOK Level	DOK1, DOK 3
DOK Application	Recall, Define, Illustrate, Recognize, Name, Hypothesize, Draw Conclusions, Construct
National Standards	5-8: A (Inquiry); C (Life Science); D (Earth/Space); F (Science in Personal and Social Perspectives)
Graduate Research Element	The liver is responsible for filtering toxins from the blood. Toxins enter the body through: Air- Emissions Water- non-point and point source pollution Food- additives, artificial flavoring Chemicals- pesticides, heavy metals

Student Learning Goal:

MS 8th Grade:

1(d) Analyze evidence used to form explanations and draw conclusions; 3(c) Describe how bacteria interact with body function

National Science Education Standards of Content 5-8:

A: Inquiry: Develop descriptions, explanations, predictions and models using evidence; Think critically and logically to make the relationships between evidence and explanations- Students will observe or participate in several demonstrations in which they will see a result and have to think of the mechanism that caused that result; Understandings about scientific inquiry- Students will build a model of their digestive tract.

C: Life Science: Structure and function in living systems- Students will learn the function of organs in the digestive tract; Populations and ecosystems- Bacteria are decomposers that feed on wastes.

D: Earth and Space Science: Structure of the Earth's System; Water is a solvent and carries minerals and gases to the ocean.

F: Science in Personal and Social Perspectives: Personal health- Tobacco and alcohol can affect body functions, Natural environments can contain harmful substances; Natural Hazards- Human activities can induce natural hazards,

Materials Needed (supplies, hand-outs, resources):

PowerPoint presentation (Inspire_Guthrie_04.15.12_Digestion), A ball inside tights to demonstrate peristalsis; crackers, small cups, water and straws;



Materials to make a digestive tract model for example:

- Apron- Students will model their Digestive System
- Paint stick/Ruler- Esophagus
- Protractor inside a sock- Stomach
- Brown paper bag- Liver
- Half of a small whoopie cushion- Gallbladder
- Poster board cut out- Pancreas
- Gallon zip lock, 25' tubing, and yarn- Small Intestine
- Slinky- Large intestine
- Adhesive Velcro- To attach everything

Lesson Performance Task/Assessment:

Begin class by asking the students what digestion is. As the PowerPoint is presented, ask the students questions to reiterate the point that is trying to be made (see the notes with slides for suggestions). At the end of the presentation, explain what all the items represent in their model. When all the models are put together play runway music and have students “work the runway.” Discuss one more time what everything means by pointing at the model they just made. Emphasize the main job of each organ like small intestines absorb nutrients, large intestines absorb water, etc. Also, throw in some of the vocabulary like enzymes, peristalsis, bile, etc.

Lesson Relevance to Performance Task and Students:

The capture activity for this lesson is modeling the digestive tract. Students will put together a homemade model of their digestive tract and then model their finished product. They will learn where everything is and what role it plays in digesting their food.

Anticipatory Set/Capture Interest:

Class will begin with a funny digestion cartoon.

Guided Practice:

This is designed to be a very interactive class. When the PowerPoint is being presented there are several chances to allow the students to be interactive (see notes in the PowerPoint for each slide). When discussing saliva students will eat crackers and taste their enzymes at work. To decide if gravity is what sends our food to our stomach, a student will stand on their head and drink water. To demonstrate peristalsis a few volunteers will demonstrate with a ball inside a stocking by moving the ball to the other end of the stocking.

Independent Practice:

Each student should participate in building the model. If students are not getting it give them a quick remedial assignment (see Remediation and/or Enhancement)

Remediation and/or Enrichment:



Remediation – Have students fill in a diagram of their digestive tract or make a quick matching game where they can match a part of the tract to the role it plays in digestion.

Enrichment- Add to the model assembly package labels and descriptions that students have to match to the parts of the digestive system.

Check(s) for Understanding:

As the PowerPoint is presented, ask the students questions and build on the beginning of the lecture. For example, for each part of the tract that breaks down food ask is it is a mechanical or chemical process. (see notes in PowerPoint for more suggestions)

Closure:

When all the models are put together play runway music and have students “work the runway.” Discuss one more time what everything means by pointing at the model they just made. Emphasize the main job of each organ like small intestines absorb nutrients, large intestines absorb water, etc. Also, throw in some of the vocabulary like enzymes, peristalsis, bile, etc.

Possible Alternate Subject Integrations:

Teacher Notes

For enrichment see [BodyWorks_smallintestine.pdf](#)

Runway music see [Supermodel.mpg](#)