

JOANNA EDLE & BRUCE BEGEN

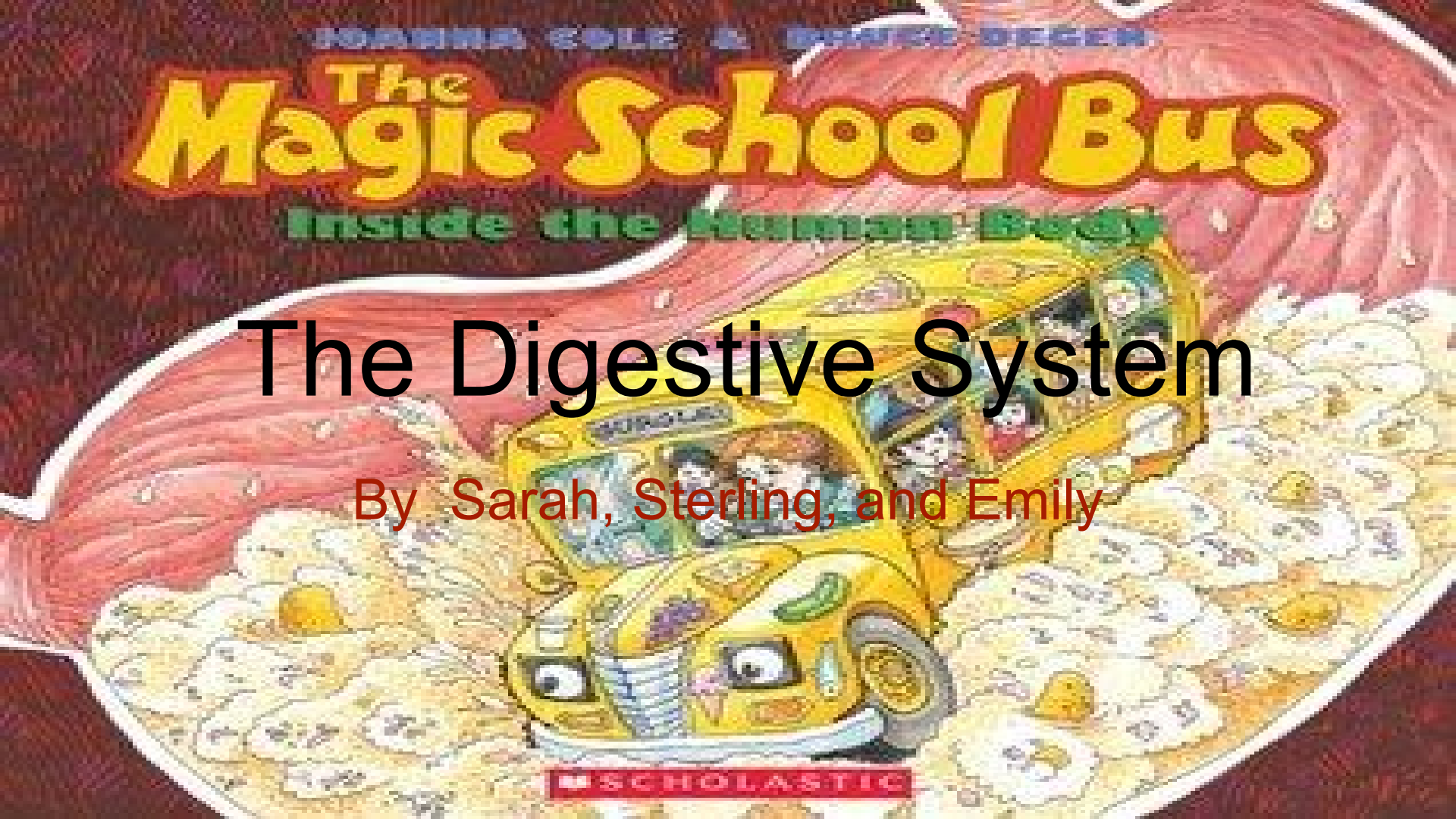
The Magic School Bus

Inside the Human Body

The Digestive System

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SCHOLASTIC



How is it Organized?

-Mouth(oral cavity)

-teeth cut up food, saliva moistens food before it is pushed by muscles down the pharynx

-Pharynx

-passes chewed food to the esophagus

-Esophagus

-carries food to the muscular ring at the end of the esophagus(lower esophagus)

-Stomach

-storage for food so there is time for digestion

- Small intestine

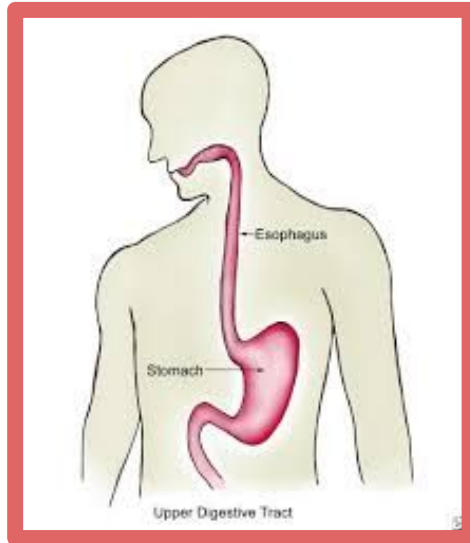
-lets food go down long folded tube that gives it more time to digest -

Large intestine(colon)

-contains many symbiotic bacteria that aid in the breaking down of wastes to extract some small amounts of nutrients

Function of the Mouth

When you eat food your teeth grind it up and softening it using saliva. Swallowing pushes your food using your tongue muscle to your esophagus. This muscular tube will bring food down to your stomach for further digestion. Swallowing is involuntary, it is controlled by your brain and esophagus.



WHAT HAPPENS IN THE STOMACH?

- Can expand temporally and store food
- Located on the left side of your body above your waist and behind your ribs
- Releases digestive juices (chyme) to help digestion
- The walls of the stomach are strong and muscular as well as involuntary

Small intestine vs. Large intestine

Small Intestine

measures 22-25 feet in length

approximately 1.5 inches in width

circular folds

Proteolytic enzymes, maltase enzymes, and peptidases enzymes for digestions

Large intestine

measures 5 feet in length

approximately 3 inches in width

no circular folds

produces no digestive enzymes

How does it function and how does it function with other organ systems?

The Digestive system starts at the mouth and breaks up food with chewing and saliva. Next it goes to the stomach and through the small intestine, then the food passes through the GI tract mixing in with digestive juices causing food to break down. As the broken down food is moved through the large intestine, nutrients are absorbed through the tissue and passed into the bloodstream. The pancreas gives off enzymes that break down these nutrients into an absorbable form. The small intestine uses 4 mechanisms of absorption, these are: active transport, passive diffusion, endocytosis, and facilitative diffusion.



What goes Wrong?

Stomach irritation that leads to:

stomach aches

vomiting (when your body rejects the things you eat and gets rid of it asap)

IBS (Irritable bowel syndrome)
an internal disorder that causes stomach pain, diarrhea, constipation, and gas

Acid Reflux (Acid reflux is when the muscle in your esophagus does not work properly)

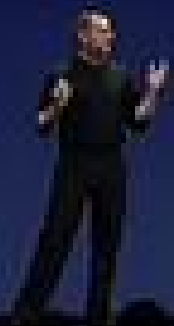
Infections (caused by bacteria)

Things that go wrong with other systems around the digestive system

- Cancer beginning in a different system that spreads to the digestive system
- Kidney infections can lead to back pain which can lead to vomiting

Types of Cells

<u>Name</u>	<u>Purpose</u>
Mucus Cells	Produce mucus
Parietal Cells	produce hydrochloric acid
Cheif Cells	produces pepsinogen (and inactive form of protein digestive enzyme)
Enteroendocrine Cells	Produces: gastrin, secretin, histamine, serotonin, cholecystokinin, somatostatin



What types of Tissues?

Name	Purpose
Mucous Membrane	lines the gastrointestinal tract
Submucosa	connective tissue with collagen fiber
Muscularis Externa	mostly consists of smooth muscle
Serosa or Adventiti (depending on the location)	Adventiti covers the Muscularis Externa and the Serosa includes the Adventiti as well as a connective tissue called mesothelium

Thanks for Listening!