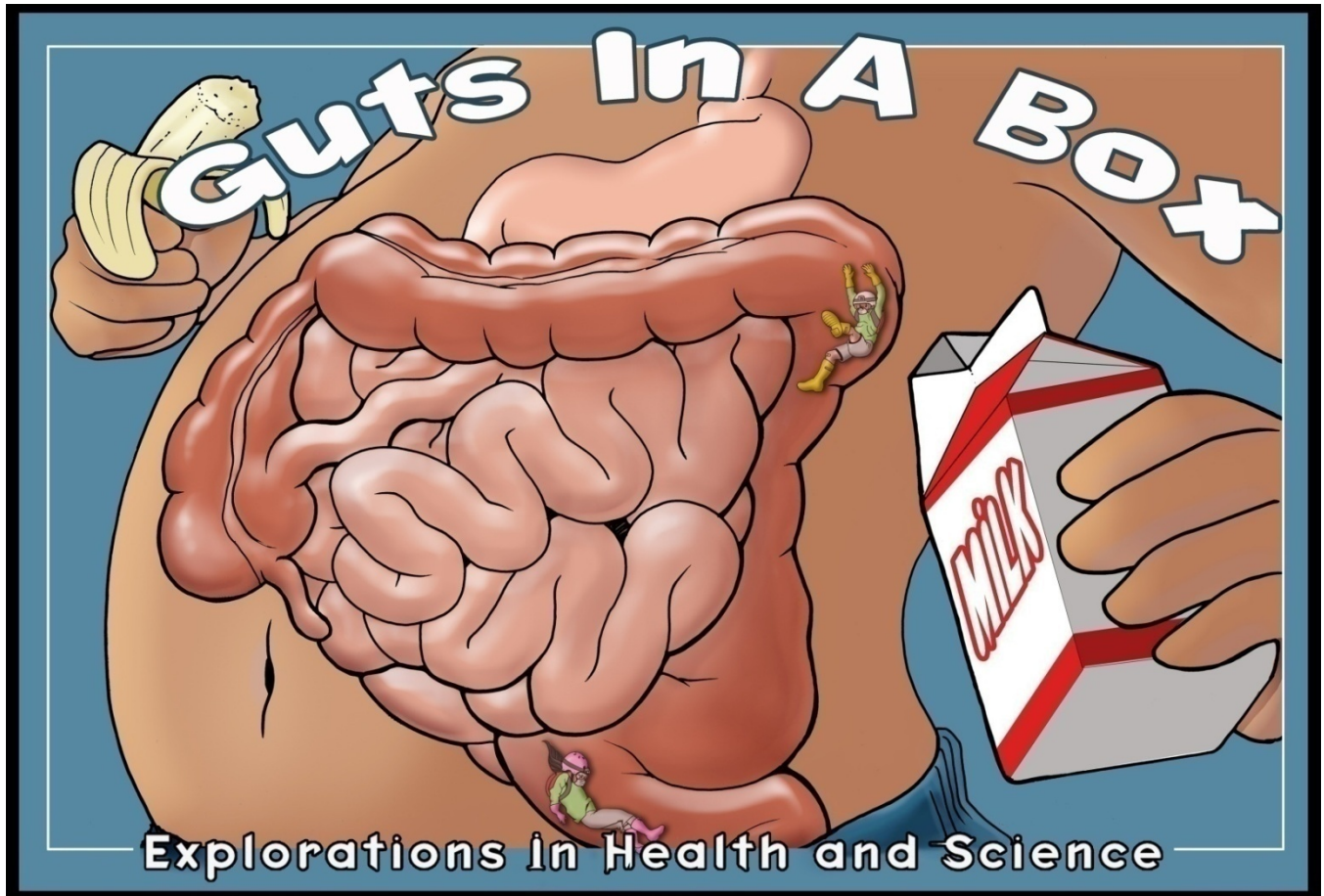


Ambassador Handbook



“School-age children constitute what may be the most important audience you’ll ever address. They are eager to learn more about you and your work as a representative of the scientific community. Moreover, teachers welcome the opportunity to have health professionals come into their classrooms to talk about medicine and the excitement of science and research.”

Communicating Science and Medicine to Children

American Medical Association

Thank you for agreeing to share your career choice with local students!

The goal of **In-A-Box** curricula is to encourage *Explorations in Science and Health* with rural students of Oregon. Oregon Health and Science University, Area Health Education Centers (AHEC), and the Howard Hughes Medical Institute have teamed up to create this program. You are a vital part of the inspiration.

This guide outlines:

1. Your role as ambassador
2. The stations students will use for their activities
3. The contents of the box which students will be able to look through

I. The format for you (the ambassador) is as follows:

- A. Connect with the teacher whose class you will be visiting to confirm schedules (which can vary with this lesson depending on the teacher’s day).
- B. If you do not arrive to the class with the box, you may want to review its contents by viewing the box contents below.
- C. Be sure to stop at the school office on your way into the building to get a visitor’s name badge.

When you arrive to the classroom:

Introduce yourself and what your career is called. Describe how you came to choose this career and what you really like about it. Mention who the team you work with, or depend on, is and how science is part of your job. Spend 10 minutes and ask if students have questions.

Emphasize wherever possible that "Science is about asking questions and solving problems"

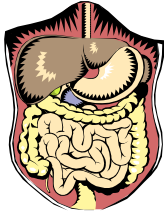

- A. The teacher will group students for five stations of activities about “gut” health and the professionals who work with digestive disorders.
- B. If you can stay and participate, walk around and see what kinds of problem solving the students are doing on behalf of their activity goals.
- C. If you are returning the box to the AHEC coordinator, wait for the student post survey and teacher feedback form so that those can be collected and stored in the box.




This format is very flexible and should work with your unique job as well as the teacher's time frame and unique students.

Enjoy and thank you again!

The following is a preview to the station activities:

Station Content and Objectives

Stations 1-5	Activity	Resources	Lesson Objective
<p>1. Gut Anatomy</p> 	<p>Identify what is in the guts</p>	<p>Bag O' Guts</p> <p>Templates</p> <p>Blueprint of Digestion Poster</p> <p>Envelope of answers</p>	<p>To learn about the organs in our digestive system</p>
<p>2. Informed Eaters</p> 	<p>Play the pyramid game</p>	<p>Muscle model</p> <p>Fat model</p> <p>Restaurant quizzes</p> <p>Pyramid game</p> <p>Envelope of quiz answers</p>	<p>To understand how nutritional labeling can help with daily food choices</p>

<p>3. You are the Professional</p> 	<p>Assume the role of a health professional and make decisions for the patient</p>	<p>Scenario, Role, and Treatment cards</p>	<p>To learn the many roles involved in health science, to make team decisions, and to problem solve.</p>
<p>4. Gut Disorders</p> 	<p>Match disorders to their descriptions and to the medical tools that are used for diagnosis or treatment</p>	<p>Disorder Cards Colon model Stethoscope Digestion diagram Envelope of disorder answers</p>	<p>To learn some common digestive disorders and the equipment used for diagnosis or treatment.</p>
<p>5. Malnutrition</p> <p>Nutrition Matters</p> 	<p>Take the quiz make three personal choices for better nutrition</p>	<p>Nutrition fact cards Nutrition quiz Envelope of answers Hunger/Obesity map Nutrition counter</p>	<p>To learn about global health concerns related to poor nutrition.</p>

Station 1 – Gut anatomy

Students will first answer the question or draw a picture on their station notes in response to, “What body parts can you identify in your gut?” Then, as they remove the simulated guts from the bag, students will refer to the poster of digestion and fill in their own gut template with the proper names.

Teacher Notes:

The bag is filled with simulated parts for: small intestine & large intestine, pancreas, appendix, stomach, liver, and gall bladder. The sizes are actual, but the weights are not. The human liver weighs 3 lbs!

Station 2 – Informed Eaters

1. Students start by taking the restaurant quiz. When all students finish, they can look in the envelope for the right answers.
2. Play the MyPyramid game!
3. Station notes ask them to think about the fat and muscle replicas.

Station 3 – You are the Professional!

Students read about the hypothetical patient on the card. At the bottom right are roles of professionals who likely would work with this patient. On the back is the team who would likely work together to help this patient. Each student assumes a role and reads how that professional typically helps any new patient. Each student will record on their station notes: 1. What role they assumed, and 2. How they would help this patient if they were that professional role.

Teacher Notes:

Keep the Treatment plan cards separate until students are done with their recommendations. The treatment plans are what professionals at OHSU said they would do with those patient scenarios. This can be shared after students share their recommendations. For younger students, have the whole group choose one role to agree on a recommendation plan. One student can be the scribe, one can share with the class, and one can read the professional treatment plan at the end.

Station 4 – Gut Diseases

Students will learn about several common pathologies in the large intestine (otherwise known as colon), stomach, appendix, and gall bladder. Using the cards and colon model, they match pathology names to pathology descriptions and then to the technology used for that pathology diagnosis or treatment. Students will then take turns listening with the stethoscope to each other's abdomens to hear what they can in each other's digestion. This may be more active if your lesson is after lunch!

Teacher Notes:

The correct matches are in an envelope to be viewed AFTER students in each rotation agree on the matches, and then they should be repacked for the next group. The enclosed wipe is to keep the stethoscope ear pieces clean between uses. The liver transplant card and booklet are for further interest not for the station activity.

Station 5 – Malnutrition

Malnutrition isn't just for other countries! Students will learn where under-nutrition causes malnutrition in the world and where over-nutrition causes malnutrition (obesity) in the world, as well as the overall health effects of these conditions. They take a short quiz, view the map of malnutrition and obesity, and then design some

individual changes for their own nutrition needs on the station notes. Students can check their answers against those in the envelope when everyone is done taking it.

Teacher Notes:

This station takes a global view of nutrition. What happens in the body for people who are under-nourished? What happens to people who are over-nourished? Where do these two problems occur most in the world? How can students change their own eating habits to address some of these concerns?

Box Contents

Five station envelopes:

Station 1: templates for guts identification, envelope of answers

Station 2: restaurant quizzes, envelope of answers, MyPyramid game with baggie and four weights

Station 3: 3 Patient scenario cards, 3 role cards, 3 professional treatment cards

Station 4: 18 disease, technology, and description cards; stethoscope, digestion diagram, and matching answers in the envelope

Station 5: nutrition quizzes, malnutrition fact cards, hunger /obesity map, envelope with quiz answers, and the nutrition counter.

Student surveys- pre and post- these help us to evaluate the effects of In-A-Box curriculum and are to be placed in the box at completion.

Station note pages- Student use these as they progress through station activities.

Artifacts:

Guts In-A-Box poster

Bill Nye *Digestion* DVD and curriculum

Blueprint for Health chart of digestion

Portion Distortion cards

“Do the Math” poster

Country Doctors video- This one hour long PBS video was made in rural Oregon about the need for local health care providers.

The Science of Fat video- a good extension for older students, research projects, or sharing with families. This two disc set has animations, experiments using mice, interviews of individuals, and much more.

The Science of Energy Balance- NIH Curriculum with five lessons and Oregon Content Standards.

Bag O' Guts- simulated organs for station 1 activities includes: two intestine strands, one pancreas, liver, gall bladder, stomach, and appendix.

Fat and Muscle replicas- for station 2 activities

Colon Model-for station 4 activities

Books:

- **Guts**
- **Burp**
- **101 Questions about Food and Digestion**

Glossary

Basal metabolic rate (BMR): A measure of the energy necessary for maintaining basic functions, such as breathing, heart rate, and digestion.

Body mass index (BMI): A measure relating body weight to height. It is derived from a person's weight (in kilograms) divided by their height (in meters) squared.

Calorie: A unit of energy. In nutrition, calorie is used instead of the more precise scientific term kilocalorie. A kilocalorie is the amount of energy required to raise the temperature of a liter of water 1 °C at sea level. The common usage of the word *calorie* is understood to refer to a kilocalorie when referring to food energy.

Diabetes: A chronic disease associated with abnormally high concentrations of the sugar glucose in the blood. It may be due to inadequate production of insulin (a hormone made by the pancreas that lowers blood glucose) or inadequate sensitivity of body cells to the action of insulin. The major complications of diabetes include dangerously elevated blood sugar, abnormally low blood sugar due to diabetes medications, and disease of the blood vessels, which can damage the eyes, kidneys, nerves, and heart.

Energy: As used in this curriculum supplement, it is the potential work value found in foods, measured in calories, and the work value found in animals after they eat foods.

Energy balance: A condition determined by both energy intake and energy output. Energy

balance is achieved when energy intake equals energy output. This is the desired condition for healthy adults.

Metabolism: The sum of all chemical reactions occurring in the body. Negative energy balance: A condition in which energy output exceeds energy intake. This condition results in weight loss.

Nutrition: The process by which food is assimilated and used for growth and maintenance.

Obesity: A chronic metabolic disease characterized by having a high amount of body fat. Individuals traditionally have been considered obese if they are more than 20 percent over their ideal weight. That ideal weight must take into account a person's height, age, sex, and build. Obesity in adults (not children and adolescents) has been defined more precisely by the National Institutes of Health as having a BMI of 30 or higher (a BMI of 30 is about 30 pounds overweight for a woman who is 5'4" tall). overweight: A condition in which one is too heavy for one's height. The National Institutes of Health defines overweight in adults (not children and adolescents) as having a body mass index (BMI) of 25 to 29. Body weight comes from fat, muscle, bone, and body water. Overweight does not always mean "over fat." positive energy balance: A condition in which energy intake exceeds energy output for basal metabolic rate (BMR) and physical activities. Children, adolescents, and teenagers should be in positive energy balance. For these age groups, energy intake in excess of energy used for BMR and physical activities is used for growth or may be stored for use at a later time.