The Integrated Nutrition Education Program™
El Programa de Educación sobre Alimentación Integrada™

Digestive System (5th Grade)

Materials and Ingredients

- ✓ *Text- The Digestive System*
- ✓ chunky salsa, refried beans, whole wheat crackers, hot sauce
- ✓ bowl, mixing/serving spoon, can opener, small paper plates

Teacher Provides

- ✓ 2' by 3' pieces of butcher block paper (1 piece for every 2 students)
- ✓ pencils, crayons/markers
- ✓ copies: activity sheet and diagram sheet (each student)

Digestive System Experiment/Demonstration

- ✓ oyster crackers
- ✓ 30 feet of yarn or string (length of the average food tube/digestive system) (teacher provides)

Preparation

- ✓ Have *High-Fiber Bean-Dip* ingredients ready to mix together; serve with whole wheat crackers
- ✓ Have oyster crackers ready to pass out 1-2 per student for digestive system experiment *(oyster cracker/digestive system experiment is separate from the recipe)*
- ✓ Tear off or cut sheets of butcher block paper (2' by 3') (1 for every 2 students). **Note:** *To save time skip the body tracing activity and just have students do the digestive system diagram*

Introduction

- ✓ Start off with a short brain boost (see next page)
- ✓ Pass out 1 to 2 oyster crackers for digestive system expeiment (see next page)
- ✓ Read the text *The Digestive System* and discuss
- ✓ Pass out and have students fill in their own digestive system diagram
- ✓ Use 30 feet of yarn or string to show students how long their digestive system is!
- ✓ *Whole wheat is great to eat! Eat foods high in fiber!*

Process

- ✓ Demonstrate how to make a life size model of the digestive system (see next page)
- ✓ Pair up students and have them make their own digestive system models
- ✓ Students wash hands with soap and warm water
- ✓ Make and serve the *High Fiber Bean-Dip* with whole wheat crackers
- ✓ *Whole wheat is great to eat! Eat foods high in fiber!*

Family Letter

- ✓ Send home the family letter to let parents know about the fun activity students did in class.

THE HOME-SCHOOL CONNECTION

Let's Wake Up Our Brains! Brain Boost Exercise!
Move Your Body! Let's get our hearts pumping!

- ♥ Jog in place. (30 seconds)
- ♥ Jump in place. (30 seconds)
- ♥ Squat up and down. (30 seconds)
- ♥ High knees in place. (30 seconds)
- ♥ Arms high to the sky, down to the ground (30 seconds)

Oyster Cracker Chew/Saliva Experiment:

1. Pass out one oyster cracker to each student.
2. Ask them to hold the crackers in their mouths for one minute without chewing.
3. After one minute, ask them to chew the softened crackers well and swallow them.
4. Discuss what happened to the pieces of cracker they just ate.
    a. Explain to students that the digestive system starts with the mouth, teeth and saliva.
    b. Explain that as the crackers sat in their mouths they started to digest. The saliva in their mouths had started the process of digestion.

Demonstration- Life size model of the digestive system

1. Set a piece of (butcher block) paper on the floor.
2. Have a volunteer come up to the front and have him/her lay their head and torso on the sheet, arms out.
3. Make sure the volunteer's head is to the side so you can draw the profile and neck.
4. Trace the outline of the student using a pencil.

Tip: Show students how to move hair away from neck so it is easier to draw the profile and neck.

5. Adjust the outline of the upper body, if necessary, to make it look anatomically correct.
6. Trace the lines with a thick marker.
7. Show students how to sketch the six parts of the digestive system.
    - ✓ Use a pencil first.
    - ✓ Ask them to use the diagram they labeled earlier as a reference to tell you how to draw each part.
    - ✓ "Where is the stomach?" (The stomach sits somewhere above the belly button.)
    - ✓ "Where do you draw the small intestine?" (The small intestine takes up a large space in the lower abdominal part).
8. After the sketched parts look correct, draw over the sketched lines with a thick marker and/or crayons. Label each part.

Note: If there is not enough time or space to make the life size model of the digestive system, have the students complete "The Food Tube" activity sheet and the diagram of the digestive system.

The Digestive System *or* Wonderful Food Tube

In 1833, more than 175 years ago, very little was known about the digestive system. Doctors and scientists did not know what happened inside the body to the food people ate. They only knew what came out of the body on the other side.

Doctor William Beaumont published a book that year that changed what people understood about the digestive system. He was a doctor and a scientist who had discovered what happens inside the stomach by studying a man with a hole in his stomach. The man, Alexis St. Martin, got the hole from a gunshot wound. The wound healed but the hole was still there. Alexis lived to be 79 years old.

The doctor learned about what happened in the stomach by tying food to a string and putting it through the hole and into the man's stomach. He then took it out of the man's stomach to see what happened to the food. By doing this type of experiment many times he discovered the stomach had special juices that turned the food into a soupy liquid. Today we have *Dr. Beaumont* and *Alexis St, Martin, the man with the hole in his stomach,* to thank for a better understanding of what goes on inside our bodies!

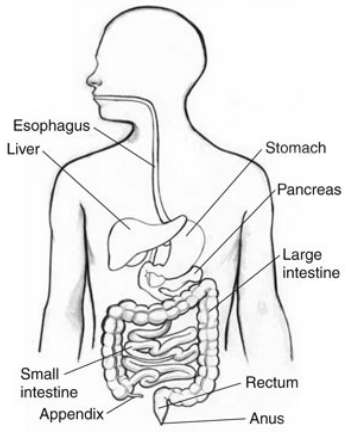
The function or job of the digestive system *is* to feed the body. The food tube includes six different parts: **mouth**, **esophagus**, **stomach**, **small intestine**, **large intestine**, and **rectum**. It takes about 24 hours for food to travel through the food tube from mouth to rectum.

Digestion starts in the **mouth** where **teeth** chew food into small pieces. Saliva moistens it. An **enzyme** in saliva starts breaking down food. The **esophagus** is a muscular tube that pushes food into the **stomach**. The **stomach** is a stretchy bag that holds food for 2 to 3 hours. The **stomach** churns and mixes the food with digestive juices turning it into a soupy food.

After the food leaves the **stomach,** it travels through a long thin tube (about 18 to 20 feet long) called the **small intestine**. Here **protein, fat, carbohydrates, vitamins**, and **minerals,** which are nutrients, are extracted or taken through the lining of the small intestine and into the blood stream. The nutrients (from food) are carried in the blood stream throughout the body to provide food for our cells. This is how our body is fed. The **large intestine** absorbs the water from the undigested food (mostly fiber from food). What is left over is waste. The waste reaches the **rectum**, and leaves through the anus.

Here are four important things you can do to keep your "Food Tube" healthy:

1. Eat ***fiber rich foods***, such as ***whole grains***, ***beans***, ***nuts***, ***fruits***, and ***vegetables***.
2. ***Chew*** your food well.
3. ***Drink*** plenty of ***water***.
4. Get lots of ***exercise***.



El Sistema Digestivo: El Tubo de la Comida

En 1833, más de 175 años atrás, se sabía muy poco sobre el sistema digestivo. Los médicos y los científicos no sabían que pasaba con la comida que la gente comía una vez que entraba al cuerpo. Sólo sabían lo que salía del cuerpo por el otro lado.

El doctor William Beaumont ese año publicó un libro que cambió lo que la gente entendía sobre el sistema digestivo. Él era un médico y un científico que descubrió lo que ocurre en el interior del estómago estudiando a un hombre que tenia un agujero de bala en su estómago.

El doctor descubrió lo que pasaba en el estómago atando alimentos a un hilo, pasándolo a través del agujero al estómago del hombre y dejando los alimentos por tiempo variables y luego los sacaba para ver lo que pasaba con la comida. Al hacer este tipo de experimento muchas veces, descubrió que el estómago tiene jugos especiales que convierten el alimento en un líquido espeso. ¡Hoy tenemos que agradecer al *doctor Beaumont*, y *Alexis St, Martin,* al hombre con el agujero en el estómago, por ayudarnos a entender mejor lo que sucede dentro de nuestro cuerpo!

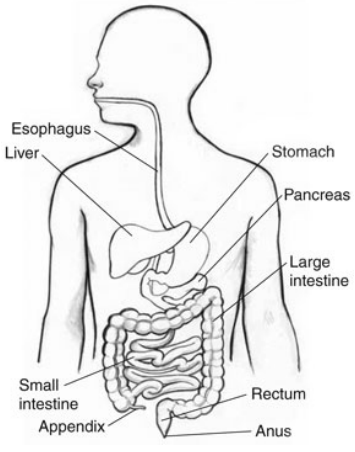
La función del sistema digestivo es la de alimentar al cuerpo. El sistema digestivo consiste de seis partes diferentes: **la boca, el esófago, el estómago, el intestino delgado, el intestino grueso, y el recto**. La comida tarda casi 24 horas para viajar por el sistema digestivo desde la boca hasta el recto.

La digestión empieza en **la boca** donde **los dientes** mastican la comida hasta formar pedacitos. La saliva humedece la comida. Una **enzima** en la saliva empieza a digerir la comida. El **esófago** es un tubo muscular que empuja la comida hacia el **estómago**. El **estómago** es un saco elástico que retiene la comida unas 2 a 3 horas. El **estómago** agita y mezcla la comida con los jugos digestivos hasta volverlos una especie de sopa.

Después de que la comida deja el **estómago,** ésta viaja por un tubo largo y delgado (alrededor de 18 a 20 pies de largo) llamado el **intestino delgado.** Aquí las **proteínas, las grasas, los carbohidratos, las vitaminas,** y **los minerales** en la comida se absorben por las paredes del intestino delgado y son transportadas a la sangre. Los nutrientes (de los alimentos) son tranpostados en la sangre por todo el cuerpo para alimentar a nuestras células. El **intestino grueso** absorbe el agua de la comida que no fué digerida (la mayor parte es fibra). Lo que sobra son productos residuales (desecho). Los productos residuales viajan hasta el **recto,** y se deshechan del cuerpo por el ano.

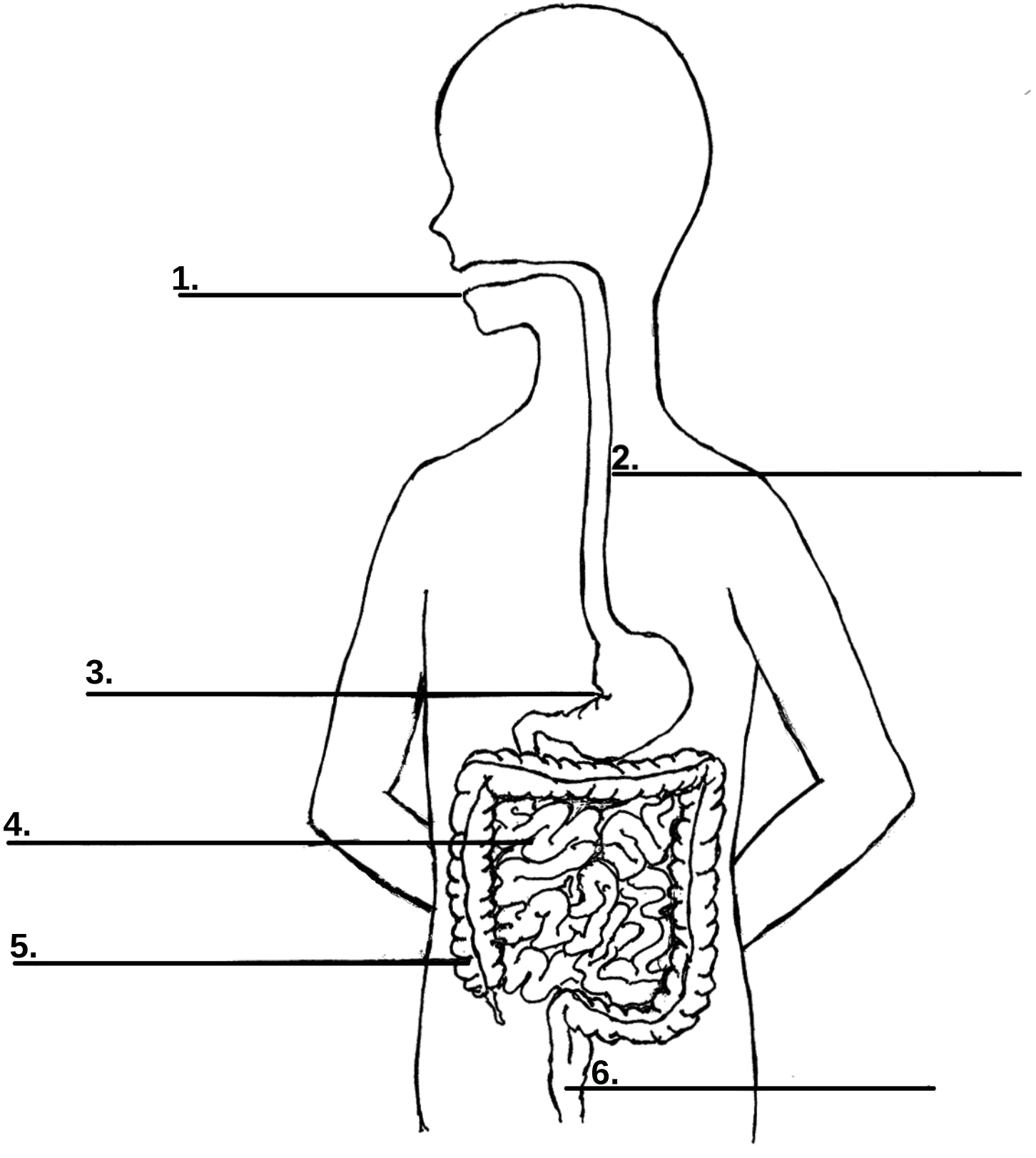
Hay cuatro cosas importantes que tiene uno que hacer para mantener un sistema digestivo saludable:

1. Comer alimentos que tengan **bastante fibra** como los **granos integrales, frijoles, nueces, frutas, y verduras.**
2. **Mastica**r bien la **comida.**
3. **Tomar** mucha **agua**.
4. Hacer mucho **ejercicio.**



The Digestive System:
The Food Tube

Name:_____ Date:_____



Digestive System: The Food Tube

Name:_____ Date:_____

1. What is the function or job of the digestive system?

_____

_____

2. List two parts of the digestive system and explain what each part does.

   1) _____

   _____

   2) _____

   _____

3. What can you do to keep your digestive system healthy?

_____

_____

4. Name three foods that are high in fiber.

   _____ _____ _____

Eat fiber-rich food for your healthy food tube!

El Sistema Digestivo: El Tubo de la Comida

Nombre:_____ Fecha:_____

1. ¿Cual es la función del sistema digestivo?

_____

_____

2. Escribe dos partes del sistema digestivo y explica lo que hace cada parte.

   1) _____

   _____

   2) _____

   _____

3. ¿Qué puedes hacer para mantener un sistema digestivo saludable?

_____

_____

4. Nombre tres comidas que son buenas fuentes de fibra.

   _____ _____ _____

¡Coman alimentos que tengan mucha fibra para mantener un sistema digestivo saludable!

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Family Letter:
December

Culture of Wellness in Preschools
Younger. Healthier. Happier.

Dear Families,

Today, your student learned about their "food tube" - the digestive system. They explored how eating a variety of foods, especially whole grains, fruits, and vegetables helps to keep their digestive system moving and healthy. They also prepared and tasted a snack with beans, vegetables, and whole wheat crackers - all foods high in fiber.

Tip!
Kids learn to like new foods they see and taste more than once. It may take a few tries to get them interested in tasting something new.

Bean Dip with Whole Wheat Crackers

Makes About: 6 - 8 servings

Total Recipe Cost: $8.60 - $9.40

Ingredients

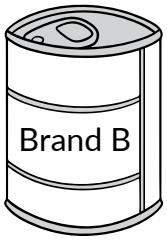
- 1 can low-fat refried beans
- 1 jar chunky tomato salsa
- hot sauce, to taste
- whole wheat crackers

Directions

1. Empty can of refried beans into a bowl and mash with spoon.
2. Mix in salsa.
3. Add hot sauce to taste.
4. Serve with whole wheat crackers.

Checking the **unit price** of a product is an easy way to save money at the grocery store. You can compare costs of similar items with varying sizes and brands by looking at the "unit price". Unit price usually tells us the cost of something per ounce or pound. Find the unit price on the tag on the grocery store shelf.

Brand A: Fat Free Refried Beans (16 oz.)	
Unit Price: **$0.08/oz**	Total Price: $1.29/ea



Brand B: Fat Free Refried Beans (30 oz.)	
Unit Price: **$0.06/oz**	Total Price: $1.99/ea

The lower the unit price, the lower the cost of the product. Brand A and Brand B are similar products but different sizes. Brand A is smaller (16 oz.) than Brand B (30 oz.). Brand A fat free refried beans are **MORE** expensive per unit because they cost **$0.08/oz.** compared to Brand B fat free refried beans, which cost only **$0.06/oz**. Buying in bulk is often a less expensive cost **per unit**.

Movement is about nourishing the body and the brain!

In Your Seat

Even a five-minute video that gets you moving benefits your overall health. Follow this QR code to do a fun activity.

On your Feet

SNAP-Ed
Division of Food & Energy Assistance

This material was funded by USDA's Supplemental Nutrition Assistance Program - SNAP.
This institution is an equal opportunity provider.

Carta Familiar:
Diciembre

Queridas familias,

Hoy, su estudiante aprendió sobre su "tubo digestivo": el sistema digestivo. Aprendieron cómo comer una variedad de alimentos, especialmente granos integrales, frutas y verduras ayuda a mantener su sistema digestivo en movimiento y saludable. También prepararon y degustaron una merienda con frijoles, verduras y galletas integrales, todos alimentos ricos en fibra.

¡Consejo!
A los niños les gustan ver y probar un nuevo alimento más de una vez. Puede tomar algunos intentos para que se interesen en probar algo nuevo.

Salsa de frijoles y galletas de granos enteros

Rinde: 6-8 porciones

Costo Total: $8.60 - $9.40

Ingredientes

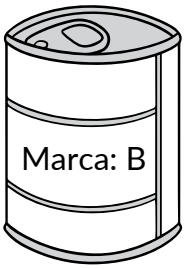
- 1 lata de frijoles refritos bajos en grasa
- 1 lata de tomate en trozos
- salsa picante, al gusto
- galletas integrales

Instrucciones

1. Vacíe la lata de frijoles refritos en un tazón y hágalos puré con una cuchara.
2. Mezcle la salsa.
3. Agregue la salsa picante al gusto.
4. Sirva con las galletas integrales.

Verificar el precio **unitario de un producto** es una manera fácil de ahorrar dinero en el supermercado. Ud. puede comparar los costos de artículos similares con diferentes tamaños y marcas revisando el "precio unitario". El precio unitario generalmente nos dice el costo de algo por onza o libra. Encuentre el precio unitario en la etiqueta en el estante de la tienda de comestibles.

Marca A: Frijoles refritos sin grasa (16 oz.)	
Precio unitario: **$0.08/onza**	Precio total: $1.29 c/u



Marca B: Frijoles refritos sin grasa (30 oz.)	
Precio unitario: **$0.06/onza**	Precio total: $1.99 c/u

Cuanto menor sea el precio unitario, menor será el costo del producto. La marca A y la marca B son productos similares pero de diferentes tamaños. La marca A es más pequeña (16 oz.) que la marca B (30 oz.). Los frijoles refritos sin grasa marca A son **MÁS** caros por unidad porque cuestan **$0.08/oz.** en comparación con los frijoles refritos sin grasa de la marca B, que cuestan solo **$0.06/oz.** Comprar a granel es a menudo menos costoso por unidad.

¡El movimiento se trata de nutrir al cuerpo y al cerebro!

En su asiento

Incluso un video de cinco minutos que le ayude a moverse beneficia su salud en general. Siga este código QR para hacer una actividad divertida. Videos en ingles.

En sus pies

Este material se desarrolló con fondos proporcionados por el Supplemental Nutrition Assistance Program (SNAP en inglés) del Departamento de Agricultura de los EE.UU. (USDA siglas en inglés).
Esta institución es un proveedor que ofrece igualdad de oportunidades.