

It Takes Guts: A Multimedia Digestive System Journey
Teacher Lesson Plan and Student activity package

Learning Objectives:

1. Students will listen to “It Takes Guts” and complete a lyric note-sheet.
2. Students will label the main digestive system organs on a digestive system diagram.
3. Students will use lyrical clues from “It Takes Guts” to identify the functions of the main organs of the digestive system.
4. Students will visit www.sciTunes.com and play It Takes Guts – The Video Game and complete a reflection sheet and an illustrated story about a trip through the digestive system.
5. Students will complete a digestive system summary.
6. STUDENTS WILL HAVE FUN LEARNING SCIENCE!

LESSONS:

- 1. Students will listen to “It Takes Guts” and complete a lyric note-sheet.**

Go to <http://www.scitunes.com> and use our streaming music player to listen to “It Takes Guts” for free.

At the sciTunes page click on “teacher resources” and download the It Takes Guts Curriculum Package for free. (We are assuming you already did this, but in case you got this sheet from a third party lesson plan site or a colleague and need more, we thought we would tell you how and so you can spread the word).

Make enough copies of the lyrics worksheet (page 5) for all of your students (it is legal to photocopy anything from this free It Takes Guts unit – the rest of the human body units will be available for purchase – see our website for ordering information).

Play “It takes Guts” and instruct students to listen carefully to the lyrics and use the word bank to fill in the missing digestive system terms as they listen.

Play “It Takes Guts” a second time and instruct students to fill in any terms that they were unable to get the first time through. On the second time through instruct students to sing along as best as they are able – they should be able to sing the chorus without too much trouble. Participation is extremely important for increasing the retention rate of the information in the song.

Go over the lyric sheet with the class to make sure they have the correct answers. You may want to make a transparency of page 4 to use on an overhead or use this pdf file if you are fortunate enough to have a smart board in your classroom.

- 2. Students will label the main digestive system organs on a digestive system diagram.**

Make enough photocopies of page 6 for each student. Make a transparency for your overhead projector or bring page 6 up on your smart board.

Tell students that the song lyrics will help them identify the organs because the lyrics are in the order that food goes through them. You will want to point out that the song only includes the organs that the food actually passes through when you come to the liver, gallbladder, and pancreas.

3. **Students will use lyrical clues from “It Takes Guts” to identify the functions of the main organs of the digestive system.**

Make enough copies of page 7 to give to all of your students. Again, make an overhead transparency or bring up page 7 on your smart board.

Students should be able to use the clues from the song lyrics to accurately identify the function of the organs listed on page 7. This sheet could be used as a closure activity or given as homework.

4. **Students will visit www.sciTunes.com and play It Takes Guts – The Video Game and complete a reflection sheet and an illustrated story about a trip through the digestive system.**

Make photocopies of It Takes Guts – The Video Game (page 8) reflection sheet and A Journey Through the Digestive System.

BEFORE TAKING YOUR STUDENTS TO THE COMPUTER LAB:

Go to www.sciTunes.com and click on the games link. You will find a number of sciTunes games that are based on the songs from the Human Body album including It Takes Guts – The Video Game. *

*As of August, 2009 these video games are only available for Macintosh users and the Safari browser. Our video game platform designer has assured us that the games will be available to users of all operating systems and Internet browsers within the next few months.

You will need to download and install a small plug-in file to allow Safari* to display the game. Click on the link and follow the instructions. You should only have to do this once. From now on all sciTunes games should work.

Bring your students to your school’s computer lab and direct them to the games section of the sciTunes website. Allow them to play the game for 10 minutes or so (headphones are recommended as It Takes Guts (the song) will be playing throughout the game).

After playing the game hand out the reflection sheet and allow students to complete the sheet. Allow them to play the game one more time in order to make sure that they identified all of the digestive system components in the game correctly.

Playing the video game should give students a good mental picture of what it would be like to travel through the small intestines. Now handout the A Journey Through the Digestive System (pages 9 and 10) creative writing activity and explain the activity as follows:

- Read the directions on the top of the sheet
- Explain the grading rubric (you will need to assign point values to each part of the rubric. This was left to you so you can make it work with your grading system)
 - o Include each organ – remind students to use their diagram and the organ functions sheet from earlier in the unit as guides.
 - o Mechanical and Chemical digestion – remind students about the difference and ask for volunteers to give examples of each. Students should describe both types of digestion as the main character of their story (their piece of food) is experiencing it.
 - o Describe Absorption – remind students that this is the whole point of the digestive system – To Absorb Nutrients From the Food so our bodies can use them.
 - o Pictures – pictures should show effort and creativity. I would advise cautioning the students to make sure that all pictures be tasteful.

5. Students will complete a digestive system summary.

The last activity in this unit is a simple summary activity (page 11) in which students take a moment to focus on the key ideas in this unit. The first question asks the students to identify the three main functions and gives them organs as clues (1. Break down food 2. Absorb nutrients 3. Remove waste). The second question asks students to identify the functions of each organ. The third question asks students to quiz themselves on the anatomy of the digestive system.

6. STUDENTS WILL HAVE FUN LEARNING SCIENCE!

Obviously, you are an enthusiastic science teacher who always keeps the learner in the forefront of your mind while planning learning activities (otherwise why would have come to sciTunes!). Take the music, video game, and the curriculum package and run with it. We would love to know what you come up with. You can give us feedback and even requests for new topics at our website – www.scitunes.com/feedback

The last page of this curriculum package provides the guitar chords (or piano for that matter) for all of those musically inclined science teachers out there. Happy Strumming!

Answer keys are found at the end of this document.

It Takes Guts

A Trip through the Digestive System

It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me 'cause of my borborygmi*
That's why no one hangs around me
I blame it on my guts

There's a party in the mouth the teeth are grindin'
 Salivary enzymes are binding
 To complex carbs to turn them into sugar
 So eat your veggies but not your boogers
 Head down the esophagus past the epiglottis
 Down to the stomach where the latest hot spot is
 Hydrochloric Acid is burning the house down
 It's a pool party careful not to drown now

Have you ever wondered what it would be like to be a piece of food on a trip through the digestive system? I'd like to think it would be one wild ride!



It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me 'cause of my borborygmi
That's why no one hangs around me
I blame it on my guts

Oh lordy, lordy here come the intestines
 It's time for some chemical digestion
 I just got squirted in the face with bile
 The small intestines going on for miles
 Pink lumpy walls covered in villi
 Make all my nutrients go bye, bye

* **Borborygmi** is the scientific term for when your stomach growls. (And it's a really cool sounding word!)



It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me cause of my borborygmi
That's why no one hangs around me
I blame it on my guts

Now I'm just waste, but I'm still rolling
 In my brown Cadillac through the colon
 It takes all my water and makes me feces
 I wait in the rectum for the body to release me
 Now I'm in the rectum singing "Lody Dody"
 Then I exit through the anus into the potty

It Takes Guts

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It takes guts to break it down

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Sometimes my guts make funny sounds

Yeah no one digs me 'cause of my borborygmi*

That's why no one hangs around me

I blame it on my guts

Have you ever wondered what it would be like to be a piece of food on a trip through the digestive system? I'd like to think it would be one wild ride!



There's a party in the mouth the _____ are grindin'

Salivary _____ are binding,

To complex carbs to turn them into sugar

So eat your veggies but not your boogers.

Head down the _____ past the _____

Down to the _____ where the latest hot spot is.

_____ is burning the house down

It's a pool party careful not to drown now!

* **Borborygmi** is the scientific term for when your stomach growls. (And you sound really smart when you say it!)

Chorus

Oh lordy, lordy here come the _____

It's time for some _____ digestion

I just got squirted in the face with _____,

The _____ going on for miles.

Pink lumpy walls covered in _____

Make all my _____ go bye, bye.



Use these words to fill in the blanks:

Esophagus chemical rectum

Intestines bile nutrients

enzymes stomach villi

Hydrochloric Acid Anus

teeth epiglottis colon feces

small intestines water

Chorus

Now I'm just waste, but I'm still rolling

In my brown Cadillac through the _____.

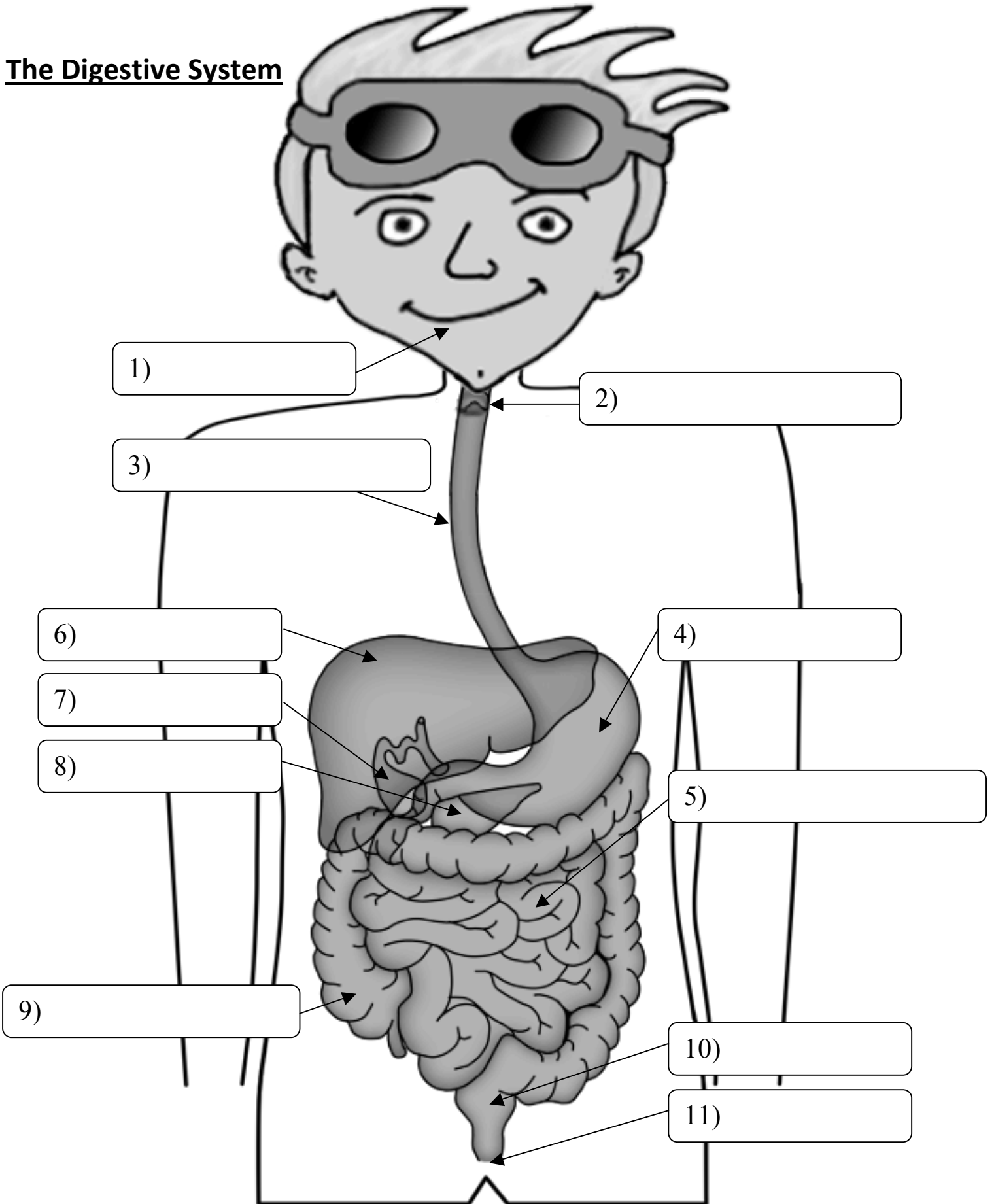
It takes all my _____ and makes me _____.

I wait in the _____ for the body to release me.

Now I'm in the rectum singing "lody dody"

Then I exit through the _____ into the potty!

The Digestive System



It Takes Guts – Organ Functions

Complete the chart below by writing the function of the main digestive system organs. If you get stuck use the clues from the song to help you remember.



Organ	sciTunes Clue	Function
Mouth	"There's a party in the <u>mouth</u> , the teeth are grinding, salivary enzymes are binding..."	
Epiglottis	"Head down the esophagus past the <u>epiglottis</u> , down to the stomach..."	
Esophagus	"Head down the <u>esophagus</u> past the epiglottis, down to the stomach..."	
Stomach	"down to the <u>stomach</u> where the latest hot spot is. Hydrochloric Acid is burnin'..."	
Small Intestine	"I just got squirted in the face with bile, <u>small intestines</u> going on for miles..."	
Villi (in the small intestine)	"pink lumpy walls covered in <u>villi</u> , make all my nutrients go bye-bye."	
Large Intestine (colon)	"...in my brown Cadillac, through the <u>colon</u> . It takes all my water and makes me feces..."	
Rectum	"I wait in the <u>rectum</u> for the body to release me."	
Anus	"Then I exit through the <u>anus</u> into the potty!"	

It Takes Guts! – The Video Game

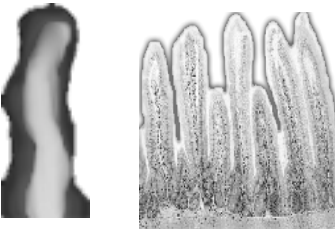



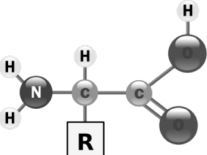
Directions: Go to www.sciTunes.com and click on the games link. Play It Takes Guts – The Video Game and then answer the questions below.

1) Explain how you scored points in the video game.

How was this similar to what really happens in your digestive system?

2) What part of the digestive system were you floating through?

3) Match the following video game elements with the part of the digestive system they represent.

<input type="checkbox"/>		A) Feces
<input type="checkbox"/>		B) Bile
<input type="checkbox"/>		C) Villi
<input type="checkbox"/>		D) Nutrients (amino acids)
<input type="checkbox"/>		E) Enzymes

Name: _____ Date: _____

A Journey through the Digestive System

Directions: Now that you have traveled through the small intestines on a hotdog, write and illustrate your own story about a trip through the digestive system. Tell the story from the point of view of a piece of food traveling through the entire digestive system.

Rubric: 1) Include Each Organ ____ 2) Describe Mech. & Chem. Digestion ____ 3) Describe Absorption ____ 4) Pictures ____

Digestion	<hr/>
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Digestive System Summary

1) You need to know the three major functions that the digestive system is responsible for. For each function you are given an organ as a clue.

- a. Function One (Mouth, Stomach) - _____

- b. Function Two (Small Intestines, Villi) - _____

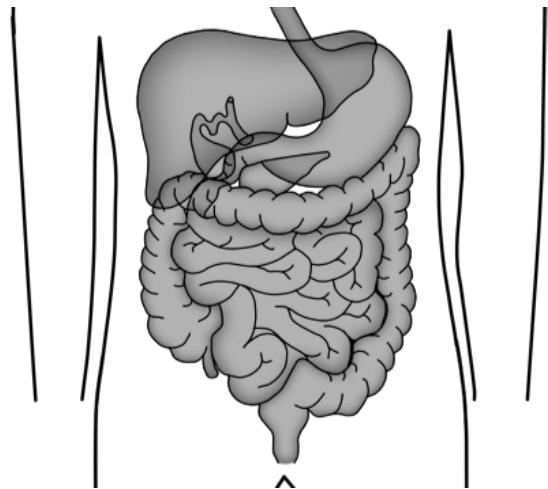
- c. Function Three (Anus) - _____

2) You need to know the functions (jobs) of all the organs:

- a. Mouth - _____
- b. Esophagus - _____
- c. Epiglottis - _____
- d. Stomach - _____
- e. Small Intestines - _____
- f. Liver - _____
- g. Gallbladder - _____
- h. Pancreas - _____
- i. Large Intestines - _____
- j. Rectum - _____
- k. Anus - _____

3) You need to be able to identify the digestive system organs on a diagram.

- a. Use this small diagram to quiz yourself and use the diagram from earlier in the chapter to see how well you did.



It Takes Guts

Lyrics and Guitar Chords

**It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me 'cause of my borborygmi*
That's why no one hangs around me
I blame it on my guts**

There's a party in the mouth the teeth are grindin'
Salivary enzymes are binding
To complex carbs to turn them into sugar
So eat your veggies but not your boogers
Head down the esophagus past the epiglottis
Down to the stomach where the latest hot spot is
Hydrochloric Acid is burning the house down
It's a pool party careful not to drown now

**It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me 'cause of my borborygmi
That's why no one hangs around me
I blame it on my guts**

Oh lordy, lordy here come the intestines
It's time for some chemical digestion
I just got squirted in the face with bile
The small intestines going on for miles
Pink lumpy walls covered in villi
Make all my nutrients go bye, bye

**It takes guts to break it down
It takes guts to soak it up
Sometimes my guts make funny sounds
Yeah no one digs me cause of my borborygmi
That's why no one hangs around me
I blame it on my guts**

Now I'm just waste, but I'm still rolling
In my brown Cadillac through the colon
It takes all my water and makes me feces
I wait in the rectum for the body to release me
Now I'm in the rectum singing "Lody Dody"
Then I exit through the anus into the potty

Chorus:

D A G A
It takes guts to break it down



Verse:

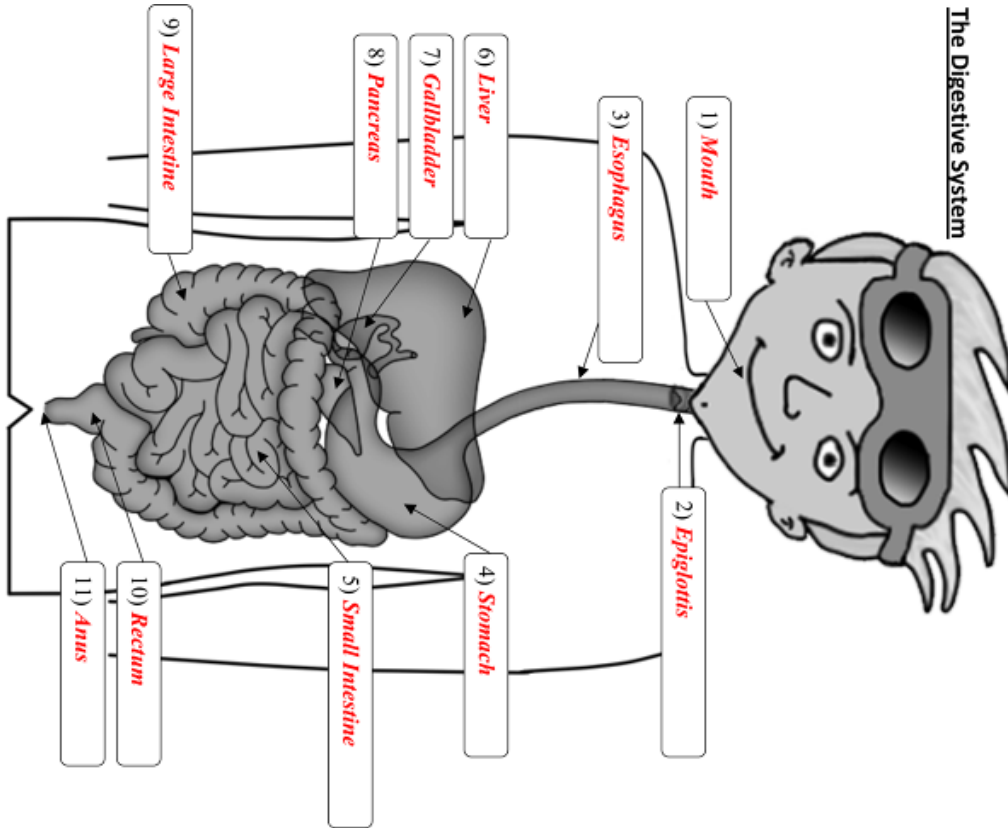
(Reggae style – up stroke on the off-beat)

 D D D D
There's a party in the mouth the teeth are grindin'
A A A A
Salivary enzymes are binding

**That's all there is to
it!**



Answer Keys



The Digestive System

It Takes Guts – Organ Functions

Complete the chart below by writing the function of the main digestive system organs. If you get stuck use the clues from the song to help you remember.

Organ	sciTunes Clue	Function
Mouth	"There's a party in the mouth, the teeth are grinding, salivary enzymes are binding..."	Mechanical Digestion (chewing) & Chemical Digestion (saliva)
Epiglottis	"Head down the esophagus past the epiglottis, down to the stomach..."	Flap that closes to prevent food from going into the trachea.
Esophagus	"Head down the esophagus past the epiglottis, down to the stomach..."	Pushes food into the stomach.
Stomach	"down to the stomach where the latest hot spot is. Hydrochloric Acid is burnin'..."	Chemical Digestion (enzymes and stomach acid) and Mechanical Digestion (stomach muscles).
Small Intestine	"I just got squirted in the face with bile, small intestines going on for miles..."	Chemical Digestion and nutrient absorption (villi)
Villi (in the small intestine)	"pink lumpy walls covered in villi, make all my nutrients go bye-bye."	Nutrient Absorption
Large Intestine (colon)	"...in my brown Cadillac, through the colon. It takes all my water and makes me feces..."	Absorbs water
Rectum	"I wait in the rectum for the body to release me."	Stores feces
Anus	"Then I exit through the anus into the potty!"	Where feces is eliminated

It Takes Guts! – The Video Game

Directions: Go to www.sciTunes.com and click on the games link. Play It Takes Guts – The Video Game and then answer the questions below.

1) Explain how you scored points in the video game.

Points are scored when nutrients are absorbed by the villi.
















How was this similar to what really happens in your digestive system?

The most important function of the digestive system is nutrient absorption which takes place when the villi absorb nutrients.

2) What part of the digestive system were you floating through?

Small Intestine

3) Match the following video game elements with the part of the digestive system they represent.

			A) Feces
			B) Bile
			C) Villi
			D) Nutrients (amino acids)
			E) Enzymes

Digestive System Summary

1) You need to know the three major functions that the digestive system is responsible for. For each function you are given an organ as a clue.

a. Function One (Mouth, Stomach) - _____

Break Down Food (Digestion)

b. Function Two (Small Intestines, Villi) - _____

Absorb Nutrients from food

c. Function Three (Anus) - _____

Remove waste (unusable material from food)

2) You need to know the functions (jobs) of all the organs:

- a. Mouth - _____
- b. Esophagus - _____
- c. Epiglottis - _____
- d. Stomach - _____
- e. Small Intestines - _____
- f. Liver - _____
- g. Gallbladder - _____
- h. Pancreas - _____
- i. Large Intestines - _____
- j. Rectum - _____
- k. Anus - _____

See previous function worksheet

3) You need to be able to identify the digestive system organs on a diagram.

- a. Use this small diagram to quiz yourself and use the diagram from earlier in the chapter to see how well you did.

