

Let's Eat! – The Gastrointestinal System

Course

Medical
Terminology

Unit VIII

The Digestive
System

Essential Question

What medical
terms are
associated with
the
gastrointestinal
system?

TEKS

130.203 (c)
(1) (A), (C), (F)
(2)(A),(B)
(3) (A), (B), (C)
(4) (A), (B)

Prior Student Learning

A basic
understanding of
medical roots,
prefixes, and
suffixes

Estimated time

2 hours

Rationale

Healthcare professionals must have a comprehensive medical vocabulary in order to communicate effectively with other health professionals. They should be able to use the terminology of the gastrointestinal system to discuss common conditions and diseases.

Objectives

Upon completion of this lesson, the learner should be able to

- define and decipher common terms associated with the digestive system;
- identify the basic anatomy of the digestive system;
- analyze unfamiliar terms using the knowledge of word roots, suffixes and prefixes gained in the course; and
- research diseases which involve the digestive system.

Engage

Have students measure 23 feet on your classroom floor or in the hallway - this is the approximate length of the intestinal tract. Ask if they can name any of the organs or body parts that make up the 23 feet.

Key Points

- I. Gastrointestinal System
 - A. "GI" system
 - B. Alimentary or digestive tract
 - C. Begins at the mouth and ends at the anus
- II. Functions
 - A. Carrying food for digestion
 - B. Preparing food for absorption
 - C. Transporting waste products for elimination
- III. The Journey
 - A. Digestion begins in the mouth
 1. Food is put in the mouth
 2. It is broken down mechanically and chemically
 - a. Chewing (**mastication**)
 - b. Digestive enzymes help speed up the chemical reaction
 - c. Proteins break down into amino acids, complex sugars are reduced to simple sugars, and large fat molecules are broken down into **fatty acids** and **triglycerides**
 3. Absorption

- a. Takes place when digested food is absorbed into the blood stream
- b. It goes through the walls of the small intestine
- c. Fatty acids and triglycerides are absorbed through the wall of the small intestine
- 4. Elimination
 - a. Solid waste materials that cannot be absorbed into the bloodstream are passed out of the body
 - b. Feces collects in the large bowel and exits through the anus

IV. Mouth

- A. Oral cavity
- B. Lips provide the opening
- C. Cheeks form the walls
- D. **Hard palate** – roof of the mouth
- E. Muscular **soft palate**
 - 1. Lies posterior to the hard palate
 - 2. Separates the mouth from the throat
- F. **Pharynx** – the throat
- G. **Rugae**
 - 1. Irregular ridges in the mucous membranes
 - 2. Cover the anterior portion of the hard palate
- H. **Uvula**
 - 1. Hangs from the soft palate
 - 2. Means “little grape”
 - 3. Aid the production of sounds and speech
- I. **Tongue**
 - 1. Extends across the floor of the oral cavity
 - 2. Attached by muscles to the lower jaw
 - 3. Moves food around during chewing (**mastication**) and swallowing (**deglutition**)
- J. **Tonsils**
 - 1. Masses of lymphatic tissue
 - 2. Located in depressions of the mucous membranes in the walls of the pharynx
 - 3. Act as filters to protect the body from the invasion of germs
 - 4. Produce **lymphocytes** (white blood cells which fight disease)
- K. **Gums**
 - 1. Made of fleshy tissue
 - 2. Surround the sockets in which the teeth are found
- L. **Teeth**
 - 1. 32 permanent teeth in the entire oral cavity - incisors, canines, premolars/molars, cuspids/bicuspid
 - 2. Structure of a tooth:

- a. Crown – above the gum
- b. Root – fits into the socket of the alveolar process of either the upper or lower jaw
- c. Enamel
 - i. Outermost protective layer of the crown
 - ii. Dense, hard, white substance
 - iii. The hardest substance in the body
- d. Dentin
 - i. Layer underneath the enamel
 - ii. Extends throughout the crown
 - iii. Is the main bulk of the tooth
 - iv. Yellowish in color
 - v. Composed of body tissue which is softer than enamel
- e. Cementum
 - i. Protective and supportive layer
 - ii. Covers the dentin in the root
- f. Periodontal membrane
 - i. Surrounds the cementum
 - ii. Holds the tooth in place in the tooth socket
- g. Pulp
 - i. Delicate layer in the center of the tooth
 - ii. Underneath the dentin
 - iii. Also called the **root canal**
 - iv. Contains blood vessels, nerve endings, connective tissue, and lymph vessels

M. Three pairs of salivary glands

1. Produce a fluid called saliva which contains digestive enzymes
2. Parotid gland, submandibular, and sublingual glands all produce saliva

V. Pharynx

- A. Throat
- B. Food passes from the mouth to the pharynx
- C. Muscular tube lined with a mucous membrane
- D. Common passageway for air and food
- E. Epiglottis covers the opening to the larynx and prevents food from entering the windpipe (trachea) during swallowing

VI. Esophagus

- A. 9-10 inch muscular tube
- B. Extends from the pharynx to the stomach
- C. Aids in swallowing
- D. Peristalsis – involuntary, progressive, wavelike contraction which moves food along the alimentary tract

VII. Stomach

A. Composed of

1. Fundus – top portion
2. Body – middle portion
3. Antrum – lower portion

B. Openings into and from the stomach are controlled by sphincters

1. Cardiac sphincter

- a. Relaxes and contracts to move food from the esophagus into the stomach
- b. Found at the top of the stomach, where the esophagus meets the stomach

2. Pyloric sphincter

- a. Allows food to leave the stomach when it has been sufficiently digested
- b. Found at the end of the stomach

C. Rugae

1. Line the stomach
2. Irregular ridges in the mucous membranes

VIII. Small intestine

A. Extends from the pyloric sphincter to the first part of the large intestine

B. 20 feet long

C. Lined with *villi*

1. Tiny microscopic projections
2. Completely digested nutrients pass through the tiny capillaries of the villi and enter the blood stream

D. Three parts

1. Duodenum

- a. 1 foot long
- b. Duodenum is from the Latin word *duodeni* meaning “twelve inch”
- c. Receives food from the stomach
- d. Receives bile from the liver and gallbladder
- e. Receives pancreatic juice from the pancreas
- f. Enzymes and bile help digest food

2. Jejunum

- a. 8 feet long
- b. Connects with the 3rd section of the small intestine
- c. Jejunum is from the Latin *jejunas* meaning “empty”

3. Ileum

- a. 11 feet long
- b. Attached to the first part of the large intestine
- c. Ileum is from the Greek *cilein* meaning “to roll”

IX. Large intestine

- A. Extends from the ileum to the anus
- B. Four parts
 - 1. Cecum
 - a. A pouch on the right side which is connected to the ileum by the **ileocecal sphincter**
 - b. Vermiform appendix hangs from the cecum
 - i. **Appendix**
 - ii. Only causes a problem when infected
 - 2. Colon
 - a. 5 feet long
 - b. 3 divisions
 - i. Ascending colon – extends from the cecum to the undersurface of the liver
 - ii. Transverse colon – passes horizontally to the left toward the spleen, and then turns downward
 - iii. Descending colon – the downward portion of the colon
 - 3. Sigmoid colon
 - a. S-shaped
 - b. Distal end of the descending colon
 - c. Leads into the rectum
 - 4. Rectum
 - a. Terminates in the lower opening of the gastrointestinal tract
 - b. Anus – opening to the outside world (the “exit”)

X. Liver

- A. Food does not pass through the liver
- B. Located in the right upper quadrant (RUQ) of the abdomen
- C. Manufactures bile
- D. Bile
 - 1. Has a detergent-like effect on fats in the duodenum
 - 2. It breaks apart large fat globules so that enzymes from the pancreas can digest the fats – this is called **emulsification**
 - 3. Contains
 - a. cholesterol
 - b. Bile acids
 - c. Bilirubin – a waste
 - 4. Product of hemoglobin destruction
 - 5. Continuously release from the liver
 - 6. Travels down the hepatic duct to the cystic duct, which leads to the gallbladder
- E. Combines bilirubin with bile and both are secreted into the duodenum, eventually to leave the body as feces
- F. Functions

1. Keeps the amount of glucose in the blood at a normal level
2. Removes excess glucose from the bloodstream and stores it as glycogen (starch) – this is called **glycogenesis**
3. When the blood sugar level is low, it converts the glycogen into glucose
4. Converts proteins and fats into glucose – this is called **gluconeogenesis**
5. Manufactures some blood proteins
6. Destruction of old erythrocytes and release of bilirubin
7. Removal of poisons from the blood

XI. Gallbladder

- A. Pear-shaped sac under the liver
- B. Stores and concentrates the bile for later use

XII. Pancreas

- A. An exocrine gland
- B. Produces pancreatic juices filled with enzymes (amylase and lipase) to digest food
- C. An endocrine gland – secreting into the bloodstream
- D. Secretes insulin
 1. Insulin is needed to help release sugar from the blood to be used by the cells of the body

XIII. Gastrointestinal root words

Root Word (Combining forms)	What it means
abdomin/o-	abdomen
amyl/o	starch
an/o	anus
antr/o-	relationship to an antrum
appendic/o	appendix
-ase	enzyme
bilirubin/o	bilirubin
bucc/o	cheek (facial)
cec/o	cecum
celi/o	belly, abdomen
cheiol/o	saliva
chol/e, bil/i	gall, bile
cholecyst/o	gallbladder
choledoch/o	common bile duct
col/o, colon/o	colon
dent/o, odont/o	teeth
donto-	tooth

duoden/o	duodenum
enter/o	small intestine
esophag/o	esophagus
gastr/o	stomach
gingiv/o	gums
gloss/o-	tongue
gluc/o, glyc/o	sugar
glycogen/o	glycogen, animal starch
hepat/o	liver
ile/o	ileum
-iasis	abnormal condition
jejun/o	jejunum
labi/o, cheil/o	lip
lingu/o, gloss/o	tongue
lip/o, steat/o	fat, lipids
or/o	mouth, oral
palat/o	palate
pancreat/o	pancreas
peritone/o	peritoneum
pharyng/o	pharynx, throat
polyp-	a tumor with a pedicle (many footed)
-prandial	meal
proct/o	anus, rectum
pylor/o	pylorus
rect/o	rectum
sial/o	saliva
sialladen/o	salivary gland
sigmoid/o	sigmoid colon
spleen/o	spleen
stomat/o	mouth
submaxill/o	lower jaw
tonsill/o	tonsil
uvul/o	uvula

XIV. Common Gastrointestinal prefixes and suffixes

Prefix	What it means
dys-	bad, difficult, painful
re-	back
retro-	backward, back
sub-	under, below
Suffix	What it means
-ase	enzyme
-clysis	irrigation, washing
-ectomy	surgical removal

-flux	flow
-gram	record
-iasis	abdominal condition
-ist	a specialist
-itis	inflammation
-lithiasis	calculus or stone
-logy	science or study of
-lytic	destruction or breakdown
-megaly	enlargement
-orrhaphy	surgical fixation or suturing
-ostomy	creation of an artificial opening
-plasty	repair
-plegia	eating, swallowing
-prandial	meal
-rrhaphy	suturing in place
-scope	instrument for examining
-spasm	sudden involuntary muscle contraction
-tomy	cutting, incision
-tresia	opening
-tripsy	crushing

XV. Common Gastrointestinal Conditions

Conditions	What it means
Anorexia	Lack of appetite
Anorexia nervosa	Psychiatric disorder; an abnormal fear of becoming obese
Aphagia	Inability to swallow
Aphthous stomatitis	Canker sores in the mouth
Ascites	Abnormal accumulation of fluid in the peritoneal cavity caused by cirrhosis, tumors, and infection
Borborygmus	Rumbling, gurgling sound made by moving of gas in the intestine
Bruxism	Grinding the teeth involuntarily, often while sleeping
Calculus	Stones
Cachexia	Generalized poor nutrition
Cathartic	Strong laxative
Cholelithiasis	Condition of having gallstones
Cleft palate	Congenital split in the roof of the mouth or upper lip
Colonic polyposis	Polyps, small growths protruding from the mucous membrane of the colon
Constipation	Difficult or delayed defecation caused by low

	peristalsis movement, by over-absorption of water as its contents sit too long in the intestine, or by dehydration
Dental caries	Cavities in the teeth (caries means “decay”)
Diarrhea	Frequent discharge of liquid stool (feces)
Diverticula	Abnormal side pockets in hollow structures such as the intestines, sigmoid colon, and duodenum
Duodenal ulcer	Ulcer in the duodenum
Dyspepsia	Difficult digestion
Dysphagia	Difficulty swallowing
Dysphasia	Difficulty speaking
Edentulous	Without teeth
Eructation	Act of belching or raising gas from the stomach
Esophageal varices	Swollen, twisted veins around the distal end of the esophagus
Esophagitis	Inflammation of the esophagus
Flatus	Gas expelled through the anus
Gallstones	Hard collections of bile that form in the gallbladder and bile ducts
Gastric ulcer	Lesion on the wall of the stomach (peptic ulcer)
Gastritis	Inflammation of the stomach
Gastrodynia	Pain in the stomach
Gingivitis	Inflammation of the gums
Halitosis	Bad breath
Heartburn	Burning sensation caused by reflux or flowing back of acid from the stomach into the esophagus
Hematemesis	Vomiting blood
Hemorrhoids	Swollen or twisted veins either outside or just inside the anus
Hepatoma	Tumor of the liver
Hepatomegaly	Enlargement of the liver
Hernia	A protrusion of an organ or part of an organ through the wall of the cavity that contains it
Herpes simplex	Cold sore or fever blister on the lip or nose due to the herpes virus
Hiatal hernia	Protrusion of part of the stomach through the esophageal opening into the diaphragm
Hyperemesis	Excessive vomiting
Ileus	Intestinal obstruction that can be caused by failure of peristalsis following surgery, hernia, tumor, adhesions, and often by peritonitis
Inguinal hernia	A small loop of bowel protruding through a

	weak place in the inguinal ring, an opening in the lower abdominal wall, which allows blood vessels to pass into the scrotum
Intussusception	Telescoping of the intestine – common in children
Laxative	Medication encouraging the movement of feces
Leukoplakia	White plaques or patches of mouth mucosa
Melena	Black stool – feces containing blood
Nasogastric	Pertaining to the nose and stomach
Nausea	Urge to vomit
Polyposis	Condition of polyps in the intestinal wall
Pruritus ani	Intense itching of the anal area
Regurgitation	Return of solids and fluids to the mouth from the stomach
Steatorrhea	Excessive fat in the feces
Sublingual	Under the tongue
Ulcer	Sore or lesion of the mucous membrane or skin
Volvulus	Twisting of the intestine upon itself
Vomit	Also known as emesis –stomach contents expelled through mouth

XVI. Gastrointestinal Disease and Pathology

Disease/Pathology	What it means
Anal fistula	An abnormal tube-like passageway near the anus communicating with the rectum
Anorexia	Psychiatric condition involving self-deprivation of food, lack of appetite, and pathological weight loss
Anorexia nervosa	Psychiatric disorder – an abnormal fear of becoming obese
Bulimia	Gorging with food and then purging, most commonly by inducing vomiting or use of intense exercise or laxatives (diuretics)
Celiac disease	Malabsorption syndrome – thought to be precipitated by gluten-containing foods. The hair-like projections (villi) degenerate so that they lose their absorption function. Hereditary – common in people of Irish origin
Cholecystitis	Inflammation of the gallbladder
Cirrhosis	Scarring of the liver parenchyma, or

	tissue, due to damage from alcohol, drugs, and viruses like hepatitis
Crohn's disease	an ongoing disorder that causes inflammation of the digestive tract
Enteritis	Inflammation of the intestine
Gastroenteritis	Inflammation of the stomach and intestine
GERD	Gastroesophageal reflux disease – backward flow of gastrointestinal contents into the esophagus
Hepatitis	Inflammation of the liver caused by a virus or damage to the liver
Hepatitis A	Acute inflammation of the liver, spread by fecal-oral contact
Hepatitis B	Inflammation of the liver due to a virus transmitted by blood and body fluids
Hepatitis C	Virus affecting the liver, spread through blood and body fluids
IBS (spastic colon)	Irritable bowel syndrome – a group of symptoms including diarrhea, abdominal bloating, cramping, and constipation associated with stress and tension
Pancreatitis	Inflammation of the pancreas
Periodontal disease	Inflammation and degeneration of gums, teeth, and the surrounding bone
Ulcerative colitis	Chronic inflammation of the colon with ulcers

XVII. Radiology and Diagnostic Testing

Abdominal ultrasound	Most common method to determine the presence of stones in the gallbladder, liver cysts, abscesses, gallstones, and enlarged pancreas
Alkaline phosphatase	Elevated results indicate liver disease
Amylase	Pancreatic enzyme levels elevated in disease of the pancreas
Barium enema	a special x-ray of the large intestine, which includes the colon and rectum
Bilirubin levels	Present in liver and gallbladder disease
CBC	Complete blood count – measures the types and levels of white blood cells, red blood cells, and platelets

Cholangiogram	X-ray film of a bile duct – contrast medium is injected to outline the ducts
Cholecystogram	X-ray of the gallbladder
Colonoscopy	Visual examination of the colon
CPM	Complete metabolic profile – damaged organs release certain enzymes from their damaged tissue, and these elevated enzyme levels show up in the blood. The CMP looks at electrolytes, liver function, and kidney function
EGD	Esophagogastroduodenoscopy – visual examination of the esophagus, stomach and duodenum
Gastroscopy	Visual examination of the stomach
Helicobacter pylori antibody test	Blood test to determine the presence of H. pylori organisms – a bacteria that can be found in the stomach lining, causing duodenal ulcer
Laparoscopy	Visual examination of any internal organ or cavity
Occult blood test	Test to detect hidden blood in the feces – sometimes called Hema-Check and Colo-Rec
Proctoscopy	Visual examination of the rectum
Protein	Blood test to check for protein, which is elevated in liver disease
Sigmoidoscopy	Visual examination of the sigmoid colon
Upper GI series	Series of x-rays taken of the stomach and duodenum after barium is swallowed or a meal has been taken

XVIII. Common Surgeries and Procedures

A. Surgical excisions or removals

1. Abdominoperineal resection – surgical excision of the colon and rectum, by both the abdominal and perineal approach
2. Appendectomy – surgical excision of the appendix
3. Cholecystectomy – excision of the gallbladder
4. Colectomy – excision of the colon or part of the colon
5. Gastrectomy – surgical excision of the stomach
6. Polypectomy – excision of a polyp
7. Uvulectomy – excision of the uvula

B. Surgical repairs

1. Anoplasty – repair of the anus
2. Anastomosis – surgical connection between two normally

- distinct structures
3. Choledocholithotomy – incision into the common bile duct to remove a stone
 4. Laparotomy – incision into the abdomen
 5. Pyloroplasty – repair of the pylorus
 6. Unuloplastopharyngoplasty (UPPP) – repair of the uvula, palate, and pharynx to correct obstructive sleep apnea
 7. Vagotomy – cutting of certain branches of the vagus nerve performed during gastric surgery to reduce the amount of gastric acid

C. Creations of artificial openings

1. Colostomy – artificial opening into the colon through the abdominal wall
2. Gastrojejunostomy – artificial opening between the stomach and jejunum
3. Gastrostomy – artificial opening into the stomach through the abdominal wall; this is a feeding method used when swallowing is not possible
4. Herniorrhaphy – surgical repair of a hernia by means of a suturing operation
5. Ileostomy – creation of an artificial opening into the ileum through the abdominal wall for the passage of feces
6. Jejunostomy – creation of an artificial opening in the jejunum

XIX. Gastrointestinal Pharmacology

Medication type	How it is used
Antacids	Common OTC products used to relieve heartburn
Simethicone	Relieves excess flatulence
Laxatives	Relieve constipation
Antidiarrheals	Stop diarrhea
Stool softeners	Allow fat and water in the stool to mix in order to soften hard stool
Activated charcoal	Used for its absorption powers; often used via nasogastric tube to absorb ingested poisons
Anticholinergics	Used to treat spasms of the GI system such as IBD and diverticulitis; effectively slow down peristalsis with a calming effect
Antiemetics	Control nausea and vomiting
Bowel preparations and enemas	Bowel cleansers taken before a barium enema or bowel surgery
Emetics	Used to induce vomiting
H2 blockers	Used to treat gastric ulcers

XX. Common Gastrointestinal Vocabulary

Word	Definition
absorption	Passage of materials into the bloodstream
alimentary tract	The digestive system – aliment means food
amino acids	Small substances which make up proteins and are produced when proteins are digested
amylase	Enzyme from the pancreas to digest starch
antrum	Lower part of the stomach
anus	Lower opening of the digestive tract
apepsia	Cessation of digestion
bicuspid teeth	Two premolar teeth distal to the canines (cuspids) on each side of a dental arch
bile	Digestive juice made in the liver and stored in the gallbladder
bilirubin	Pigment released by the liver in the bile – produced from the destruction of hemoglobin
bowel	Intestine
bradyphagia	Abnormal slowness in eating
canine	Cuspid – canine means doglike
cecum	First part of the large intestine
cementum	Bonelike supportive tissue that surrounds the dentin in the root of a tooth
colon	Large intestine – ascending, transverse, and descending parts
common bile duct	Carries bile from the liver and gallbladder to the duodenum
cuspid	Canine tooth – the cuspids of the upper jaw are called eyeteeth
deglutition	Swallowing
dentin	Major tissue composing teeth – covered by enamel in the crown and by cementum in the root
digestion	Breakdown of complex foods into simpler forms
duodenum	First part of the small intestine
dyspepsia	Painful digestion
dysentery	Painful, inflamed intestines
emesis	Vomiting
emulsification	Breaking up of large fat molecules
enamel	Hard, outermost layer of a tooth
enzyme	A chemical that speeds up a reaction between substances
esophagus	Tube connecting the mouth and the stomach
eructation	Producing gas from the stomach – belching
etiology	Study of the cause of disease
fatty acids	Substances produced when fats are digested

feces	Solid wastes – stool
fundus	Upper, rounded part of the stomach
gallbladder	Small sac under the liver – stores bile
gavage	Feeding with a stomach tube
glucose	Simple sugar
glycogen	Animal starch – glucose is stored as glycogen
hepatic portal system	Capillary networks of the intestines and liver which are connected via the portal vein
herpes simplex	Cold sores or fever blisters – caused by a virus
hydrochloric acid	Substance produced by the stomach – necessary for digestion of food
ileum	Third part of the small intestine
incisor	One of four front teeth in the dental arch
insulin	Hormone produced by the pancreas
jejunum	Second part of the small intestine
lipase	Pancreatic enzyme necessary to digest fats
mastication	Chewing
palate	Roof of the mouth
pancreas	Organ under the stomach – produces insulin
papillae	Small elevations on the tongue
parotid gland	Salivary gland near the ear
peristalsis	Wavelike contractions of the tubes of the alimentary tract
pharynx	Throat
polyphagia	Eating abnormally large amounts of food at a meal
pulp	Soft tissue within a tooth
pylorus	Area of the pyloric sphincter – distal region of the stomach
rectum	End of the colon
rugae	Ridges on the hard palate and wall of the stomach
saliva	Digestive juice produced by the salivary glands
salivary glands	Parotid, sublingual, and submaxillary glands
sigmoid colon	Lower part of the colon – shaped like an “S”
sphincter	Ring of muscles
triglycerides	Products of fat digestion
uvula	Soft tissue hanging from the soft palate
vermiform appendix	Blind-ended pouch hanging from the cecum
villus, villi	Tiny microscopic projections in the walls of the small intestine to absorb nutrients into the blood stream

Activity

- I. Make flash cards of gastrointestinal terms and practice putting the terms together with prefixes and suffixes to make new terms.
- II. Complete the Gastrointestinal Medical Terminology Worksheet
- III. Review media terms with the students using review games such as the “Fly Swatter Game” or the “Flash Card Drill” (see the Medical Terminology Activity Lesson Plan - http://texashste.com/documents/curriculum/principles/medical_terminology_activities.pdf)
- IV. Research and report on diseases and disorders from the gastrointestinal system

Assessment

Successful completion of the activities

Materials

Medical Terminology book
List of gastrointestinal terms
Pathway of food through the body
Index cards
Markers
Data projector
Computer
Internet access

Accommodations for Learning Differences

For reinforcement, the students will use the internet to access www.proprofs.com and download the free online flashcards relating to the gastrointestinal system. They will print these flashcards and practice with the cards to learn gastrointestinal terminology.

For enrichment, the students will research a disease or disorder related to the gastrointestinal system. Share findings with the class using a multimedia presentation.

National and State Education Standards

National Healthcare Foundation Standards and Accountability

Criteria:

Foundation Standard 2: Communications

2.21 Use roots, prefixes, and suffixes to communicate information

2.22 Use medical abbreviations to communicate information

TEKS

130.203 (c) (1) The student recognizes the terminology related to the health science industry. The student is expected to:

(A) identify abbreviations, acronyms, and symbols;

(C) practice word building skills;

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- (F) define and accurately spell occupationally specific terms such as those relating to the body systems, surgical and diagnostic procedures, diseases and treatments

130.203 (c) (2)

- (A) demonstrate appropriate verbal and written strategies such as correct pronunciation of medical terms and spelling in a variety of health science scenarios
- (B) employ increasingly precise language to communicate
- (C) translate technical material related to the health science industry

130.203 (c) (3)

- (A) examine medical and dental dictionaries and multimedia resources;
- (B) integrate resources to interpret technical materials;
- (C) investigate electronic media such as the internet with appropriate supervision

130.203 (c) (4) The student interprets medical abbreviations. The student is expected to:

- (A) distinguish medical abbreviations used throughout the health science industry; and
- (B) translate medical abbreviations in simulated technical material such as physician progress notes, radiological reports, and laboratory reports.

Texas College and Career Readiness Standards

English and Language Arts,

Understand new vocabulary and concepts and use them accurately in reading, speaking, and writing.

1. Identify new words and concepts acquired through study of their relationships to other words and concepts.
2. Apply knowledge of roots and affixes to infer the meanings of new words.
3. Use reference guides to confirm the meanings of new words or concepts.

Cross-Disciplinary Standards,

I. Key Cognitive Skills D. Academic Behavior: 1. Self monitor learning needs and seek assistance when needed, 3. Strive for accuracy and precision, 4. Persevere to complete and master task. E. Work habits: 1. Work independently, 2. Work collaboratively

II. Foundation Skills A. 2. Use a variety of strategies to understand the meaning of new words. 4. Identify the key information and supporting details.

Gastrointestinal System Terminology

labia-	lip
labiogingival	
labiodental	
labiotenaculum	
labiochorea	
labioglossopharyngeal	
labiomycosis	
stoma-, stomato-	mouth
stomatodynia	
stomatogastric	
stomatognathic	
stomatalgia	
stomatitis	
stomatology	
stomatorrhagia	
stomatosis	
stomatomalacia	
stomatoplasty	
stomatomycosis	
stomatonecrosis	
stomatologist	
aphthous stomatitis	
gingiv/o-	gums
gingivalgia	
gingivectomy	
gingivitis	
gingivoplasty	
gingivostomatitis	
gingivolabial	
gingivosis	
dento-	teeth
dentitis	
dentist	
dentimeter	
dentition	
donto-	tooth
oligodontia	
orthodontist	
anodontia	

gastro-, gaster, -gastro-	stomach
megalogastria	
microgastria	
gastroptosis	
gastromalacia	
gastrodynia	
gastralgia	
gastrectasis	
gastrectomy	
gastritis	
gastroenteritis	
gastroileitis	
gastric lavage	
nasogastric tube	
gastric ulcer	
gastrostomy	
gastroscope	
gastroscope	
gastroscopy	
gastroduodenitis	
entero-	small intestine
enteralgia	
enterectasis	
enterectomy	
enterorrhaphy	
enterotomy	
hepat-	liver
hepatalgia	
hepatodynia	
hepatectomy	
hepaticoduodenostomy	
hepatitis	
hepaticolithotripsy	
hepatology	
hepatologist	
hepatomalacia	
hepatomegaly	
hepatosplenomegaly	
hepatonephritis	
hepatoscopy	
perihepatitis	
hepatotoxemia	

hernia-	Protrusion of an organ or part of an organ through the wall of the cavity that normally contains it
herniorrhaphy	
hernioplasty	
cholecyst-	gallbladder
cholecystectomy	
cholecystenterorrhaphy	
cholecystitis	
cholecystolithiasis	
cholecystorrhaphy	
cholecystogram	
cholangi/o-	bile duct
cholangiectasis	
cholangioenterostomy	
cholangiography	
cholangiotomy	
cholangioitis	
cholangioma	
cholangiogram	
chol/e-	gall, bile
cholelithotripsy	
cholelithotomy	
cholepathia	
cholepoiesis	
cholelithiasis	
acholia	
choledocho-	common bile duct
choledochectomy	
choledocholithiasis	
choledocholithotomy	
choledochoplasty	
choledochorrhaphy	
choledocholithotripsy	
an/o-	Anus
anoplasty	
anosigmoidoscopy	
anorectal	
anoscope	
antr/o-	relationship to an antrum

antrectomy	
antroduodenectomy	
antrotomy	
antrotome	
antritis	
col/o-	colon
colonoscopy	
colectomy	
colostomy	
colorrhaphy	
colonorrhagia	
colonopathy	
colonalgia	
colotomy	
colocentesis	
coloenteritis	
coloptosis	
colorectitis	
coloproctitis	
colotomy	
cec/o-	cecum
cecorrhaphy	
cecectomy	
cecitis	
cecoileostomy	
cecoptosis	
esophag/o-	esophagus
esophagalgia	
esophagectomy	
esophagocele	
esophagodynia	
esophagoenterostomy	
esophagogastranastomosis	
esophagogastroplasty	
esophagoscope	
esophagoscopy	
esophagitis	
esophagotomy	
esophagomalacia	
esophagomycosis	
esophagoptosis	
esophagostenosis	

duoden/o-	duodenum
duodenal ulcer	
duodenitis	
duodenorrhaphy	
duodenotomy	
duodenoscopy	
duodenectasis	
duodenectomy	
jejun/o-	jejunum
jejunitis	
jejunoileitis	
jejunotomy	
jejunorrhaphy	
jejunectomy	
jejunojejunostomy	
ile/o-	Ileum
ileostomy	
ileocecal	
ileitis	
ileocolitis	
ileorrhaphy	
ileotomy	
ileocystoplasty	
paralytic ileus	
proct/o-	Anus, rectum
proctoptosis	
proctoscopy	
proctologist	
proctology	
proctitis	
proctalgia	
proctoclysis	
proctodynia	
proctostenosis	
proctocele	
proctorrhaphy	
proctotomy	
proctosigmoidoscopy	
proctectasia	
proctoplegia	
proctoplasty	

proctorrhagia	
proctoscope	
rect/o-	rectum
rectocele	
rectitis	
rectocolitis	
rectopexy	
rectostenosis	
rectotomy	
sigmoid/o-	sigmoid colon
sigmoidoscope	
sigmoidoscopy	
sigmoidotomy	
sigmoidectomy	
sigmoidostomy	
sigmoiditis	
sigmoidopexy	
cheil/o-	lip
cheilorrhaphy	
cheilitis	
macrocheilia	
cheilotomy	
cheilgnathopalatoschisis	
cheilophagia	
cheiloplasty	
cheilosis	
cheilostomatoplasty	
appendic/o-	appendix
appendicitis	
appendectomy	
appendalgia	
appendicectasis	
gloss/o-	tongue
glossorrhaphy	
glossitis	
glossolalia	
aglossia	
macroglossia	
ankyloglossia	
glossopyrosis	

glossoplegia	
glossoptosis	
glossology	
lingu/o-	tongue
sublingual	
linguopapillitis	
lapar/o-	abdomen
laparotomy	
laparorrhaphy	
laparocholecystotomy	
laparoenterostomy	
laparogastrotomy	
laparomyitis	
laparoscope	
laparoscopy	
abdomin/o-	abdomen
abdominoplasty	
abdominocentesis	
celi/o-	belly, abdomen
celioenterotomy	
celiogastrotomy	
celiotomy	
pylor/o-	pylorus
pyloroplasty	
pyloric stenosis	
pyloralgia	
pyloritis	
pyloromyotomy	
pylorospasm	
uvul/o-	uvula
uvulitis	
uvulectomy	
uvuloptosis	
palat/o-	palate
palatitis	
palatoplasty	
palatoplegia	

peritone/o-	peritoneum
peritoneal	
peritonitis	
peritonealgia	
polyp-	a tumor with a pedicle (many footed)
polyposis	
polypotome	
polypectomy	
sialo-	saliva
sialolith	
sialadenitis	
sialoadenotomy	
sialolithotomy	
sialaporia	
sialitis	
sialorrhoea	
sialostenosis	
pancreat-	pancreas
pancreatitis	
pancreatomy	
Related terms	
achalasia	
achylia	
adhesions	
aerophagia	
anastomosis	
anorexia	
apepsia	
aphagia	
ascites	
atresia	
bradyphagia	
bulimia	
cachexia	
cirrhosis	
crohn's disease	
diarrhea	
dysentery	
dyspepsia	
dysphagia	
emesis	

eructation	
feces	
gavage	
glucose	
hepatic portal system	
herpes simplex	
intussusception	
laxative	
leukoplakia	
melena	
nasogastric	
nausea	
peptic ulcer	
polyphagia	
volvulus	

Gastrointestinal System Terminology - **Key**

labia-	lip
labiogingival	concerning the lips and gums
labiodental	concerning the lips and teeth
labiotenaculum	instrument for holding lips during operation
labiochorea	spasm of the lips, causing stuttering
labioglossopharyngeal	concerning lips, tongue, and pharynx
labiomycosis	fungal disease of the lips
stoma-, stomato-	mouth
stomatodynia	pain in the mouth
stomatogastric	concerning the stomach and mouth
stomatognathic	mouth and jaws together
stomatalgia	pain in the mouth
stomatitis	inflammation of the mouth
stomatology	science of the mouth and teeth
stomatorrhagia	hemorrhage of the mouth or gums
stomatosis	any disease of the mouth
stomatomalacia	pathological softening of any mouth structure
stomatoplasty	surgical repair of the mouth
stomatomycosis	fungal disease of the mouth
stomatonecrosis	gangrenous ulcerative inflammation of the mouth
stomatologist	specialist in mouth and teeth, and their diseases
aphthous stomatitis	formation of tiny ulcers on the mucosa of the mouth
gingiv/o-	gums
gingivalgia	pain in the gums
gingivectomy	excision of diseased gum tissue
gingivitis	inflammation of the gums
gingivoplasty	surgical correction of the gingival margin
gingivostomatitis	inflammation of the gingival tissue and the mucosa
gingivolabial	concerning the gums and lips
gingivosis	chronic gingivitis
dento-	teeth
dentitis	inflammation of dentin
dentist	authorized practitioner of dentistry
dentimeter	device for measuring teeth
dentition	the development and cutting of teeth
donto-	tooth
oligodontia	a hereditary developmental anomaly characterized by fewer teeth than normal
orthodontist	a dentist who is an expert in orthodontia

anodontia	absence of teeth
gastro-, gaster, -gastro-	stomach
megalogastria	excessive size of the stomach
microgastria	unusual smallness of the stomach
gastroptosis	downward displacement of the stomach
gastromalacia	softening of the stomach walls
gastrodynia	pain in the stomach
gastralgia	pain in the stomach
gastrectasis	dilatation of the stomach
gastrectomy	removal of all or part of the stomach
gastritis	inflammation of the stomach
gastroenteritis	inflammation of the stomach and intestinal tract
gastroileitis	inflammation of the stomach and ileum
gastric lavage	washing out of the stomach
nasogastric tube	a tube inserted into the nose that runs into the stomach
gastric ulcer	an ulcer of the stomach
gastrostomy	surgical creation of a gastric fistula through the abdomen
gastroscope	endoscope for examining the interior of the stomach
gastroscope	examination of the stomach and abdominal cavity
gastroduodenitis	inflammation of the stomach and duodenum
entero-	small intestine
enteralgia	neuralgia or pain in the intestines
enterectasis	dilation of the small intestines
enterectomy	excision of a portion of the intestine
enterorrhaphy	stitching of an intestinal wound
enterotomy	incision or dissection of the intestine
hepat-	liver
hepatalgia	pain in the liver
hepatodynia	pain in the liver
hepatectomy	removal of all or part of the liver
hepaticoduodenostomy	making a duct between the hepatic duct and duodenum
hepatitis	inflammation of the liver
hepaticolithotripsy	crushing of a biliary calculus in the hepatic duct
hepatology	study of the liver
hepatologist	a specialist in the liver
hepatomalacia	softening of the liver
hepatomegaly	enlargement of the liver
hepatosplenomegaly	x-ray examination of the liver and spleen
hepatonephritis	inflammation of both the liver and kidneys

hepatoscopy	examination of the liver
perihepatitis	inflammation of the peritoneal covering of the liver
hepatotoxemia	autointoxication due to malfunction of the liver
hernia-	protrusion of an organ or part of an organ through the wall of the cavity that normally contains it
herniorrhaphy	surgical procedure for repair of a hernia
hernioplasty	surgical operation for a hernia
cholecyst-	gallbladder
cholecystectomy	excision of the gall bladder
cholecystenterorrhaphy	suture of the gall bladder to the intestinal wall
cholecystitis	inflammation of the gall bladder
cholecystolithiasis	gallstones in the gall bladder
cholecystorrhaphy	suturing of the gall bladder
cholecystogram	a radiographic image of the gall bladder
cholangi/o-	bile duct
cholangiectasis	dilation of the bile ducts
cholangioenterostomy	surgically produced connection of a bile duct and the intestine
cholangiography	radiographic examination of the bile ducts
cholangiotomy	incision of a bile duct for the removal of stones
cholangioitis	inflammation of the bile ducts
cholangioma	a tumor of the bile ducts
cholangiogram	examination of the bile ducts
chol/e-	gall, bile
cholelithotripsy	crushing of a biliary calculus
cholelithotomy	removal of gallstones through surgical incision
cholepathia	spasmodic contraction of the bile ducts
cholepoiesis	formation of bile
cholelithiasis	formation of calculi or bilestones in the gall bladder or common duct
acholia	absence of or decrease in bile
choledocho-	common bile duct
choledochectomy	excision of a portion of the common bile duct
choledocholithiasis	calculi in the common bile duct
choledocholithotomy	removal of a bile stone through incision in the common bile duct
choledochoplasty	operation for repair of the common bile duct
choledochorrhaphy	suturing of the severed ends of the common bile duct
choledocholithotripsy	crushing of a gallstone in the common bile duct

an/o-	anus
anoplasty	plastic surgery of the anus
anosigmoidoscopy	direct visual examination of the anus, rectum, and colon
anorectal	pertaining to both the anus and rectum
anoscope	speculum for examining the anus and lower rectum
antr/o-	relationship to an antrum (any nearly closed cavity or chamber, especially in a bone)
antrectomy	excision of the walls of an antrum
antroduodenectomy	surgical removal of the pyloric antrum and upper portion of the duodenum
antrotomy	cutting through an antral wall
antrotome	instrument used to perform an antrotomy
antritis	inflammation of an antrum
col/o-	colon
colonoscopy	examination of the upper part of the rectum
colectomy	excision of all or part of the colon
colostomy	opening of any part of the colon through the abdominal wall to the outside
colorrhaphy	suture of the colon
colonorrhagia	hemorrhage from the colon
colonopathy	any disease of the colon
colonalgia	pain in the colon
colocentesis	surgical puncture of the colon to relieve distension
coloenteritis	inflammation of the mucous membrane of the colon or small intestine
coloptosis	a downward displacement of the colon
colorectitis	inflammation of the colon and rectum
coloproctitis	colonic and rectal inflammation
colotomy	incision of the colon
cec/o-	cecum
cecorrhaphy	suturing the cecum
cecectomy	incision into the cecum
cecitis	inflammation of the cecum
cecoileostomy	surgical formation of an anastomosis between the cecum and the ilium
cecoptosis	falling displacement of the cecum
esophag/o-	esophagus
esophagalgia	pain in the esophagus
esophagectomy	excision of a part of the esophagus
esophagocele	hernia of the esophagus

esophagodynia	pain in the esophagus
esophagoenterostomy	formation of a portal between the esophagus and the intestine after removal of the stomach
esophagogastranastomosis	joining the esophagus to the stomach
esophagogastroplasty	plastic repair of the esophagus and stomach
esophagoscope	an endoscope for examination of the esophagus
esophagoscopy	examination of the esophagus
esophagitis	inflammation of the esophagus
esophagotomy	surgical incision into the esophagus
esophagomalacia	softening of the esophageal walls
esophagomycosis	bacterial or fungal disease of the esophagus
esophagoptosis	relaxation and prolapse of the esophagus
esophagostenosis	stricture or narrowing of the esophagus
duoden/o-	duodenum
duodenal ulcer	damaged mucous membrane
duodenitis	inflammation of the duodenum
duodenorrhaphy	suturing the duodenum
duodenotomy	an incision into the duodenum
duodenoscopy	inspection of the duodenum with an endoscope
duodenectasis	chronic inflammation of the duodenum
duodenectomy	excision of part or all of the duodenum
jejun/o-	jejunum (second portion of the small intestine)
jejunitis	inflammation of the jejunum
jejunoileitis	inflamed condition of the jejunum and ileum
jejunotomy	surgical incision into the jejunum
jejunorrhaphy	surgical repair of the jejunum
jejunectomy	excision of some or all of the jejunum
jejunojejunostomy	formation of a passage between two parts of the jejunum
ile/o-	ileum (lower 60% of the small intestine)
ileostomy	creation of a surgical passage through the abdominal wall into the ileum
ileocecal	relating to the ileum and cecum
ileitis	inflammation of the ileum
ileocolitis	inflammation of the mucous membrane of the ileum and colon
ileorrhaphy	surgical repair of the ileum
ileotomy	incision into the ileum
ileocystoplasty	use of a portion of the ileum to increase size of the bladder
paralytic ileus	ileus

proct/o-	anus, rectum
proctoptosis	prolapse of the anus and rectum
proctoscopy	instrumental inspection of the rectum
proctologist	one who specializes in the colon, rectum, and anus
proctology	dealing with the treatment of diseases of the colon, rectum, and anus
proctitis	inflammation of the rectum and anus
proctalgia	pain in the anus or rectum
proctoclysis	an infusion, drop by drop, into the rectum and colon
proctodynia	pain in the anus or rectum
proctostenosis	stricture of the anus or rectum
proctoceles	protrusion of the rectal mucosa into the vagina
proctorrhaphy	suturing of the rectum or anus
proctotomy	incision of the rectum or anus
proctosigmoidoscopy	visual examination of the rectum and sigmoid colon
proctectasia	dilation of the anus or rectum
proctoplegia	paralysis of the anal sphincter
proctoplasty	plastic surgery of the anus or rectum
proctorrhagia	bleeding from the anus or rectum
proctoscope	instrument for inspection of the rectum
rect/o-	rectum
rectocele	protrusion or herniation of the posterior vaginal wall
rectitis	inflamed condition of the rectum
rectocolitis	inflamed condition of the rectum and colon
rectopexy	fixation of the rectum by suturing to another part
rectostenosis	stricture of the rectum
rectotomy	incision for a stricture of the rectum
sigmoid/o-	sigmoid colon
sigmoidoscope	tubular speculum for examination of the sigmoid colon
sigmoidoscopy	use of a sigmoidoscope to examine the sigmoid colon
sigmoidotomy	incision of the sigmoid
sigmoidectomy	removal of all or part of the sigmoid flexure
sigmoidostomy	creation of artificial anus in the sigmoid flexure
sigmoiditis	inflammation of the sigmoid colon
sigmoidopexy	fixation of the sigmoid to an abdominal incision
cheil/o-	lips
cheilorrhaphy	surgical repair of a cleft palate
cheilitis	inflammation of the lip
macrocheilia	abnormal size of the lips characterized by swelling of the glands
cheilotomy	excision of part of a lip

cheilgnathopalatoschisis	cleft in the hard and soft palate
cheilophagia	habit of biting one's own lip
cheiloplasty	plastic operation on the lips
cheilosis	morbid condition of the lips with a reddened appearance
cheilostomatoplasty	plastic surgery and restoration of the mouth
appendic/o-	appendix
appendicitis	inflammation of the appendix
appendectomy	removal of all or part of the appendix
appendalgia	pain in the lower right quadrant, in area of the appendix
appendicectasis	dilation of the vermiform appendix
gloss/o-	tongue
glossorrhaphy	suture of a wound of the tongue
glossitis	inflammation of the tongue
glossolalia	repetition of senseless remarks not related to the subject or situation
aglossia	congenital absence of the tongue
macroglossia	hypertrophied condition of the tongue
ankyloglossia	abnormal shortness of the frenum of the tongue
glossopyrosis	burning sensation of the tongue
glossoplegia	paralysis of the tongue
glossoptosis	dropping of the tongue out of normal position
glossology	study of the tongue and its diseases
lingu/o-	tongue or tongue-like structure
sublingual	under the tongue
linguopapillitis	small ulcers of the papillae of the edge of the tongue
lapar/o-	abdomen
laparotomy	surgical opening of the abdomen
laparorrhaphy	suture of wounds into the abdominal wall
laparocholecystotomy	incision into the gall bladder through abdominal wall
laparoenterostomy	formation of opening into the intestine through the abdominal wall
laparogastrotomy	abdominal incision into the stomach
laparomyitis	inflammation of the muscular portion of the abdominal wall
laparoscope	endoscope designed for the visual examination of the peritoneal cavity
laparoscopy	examination of the peritoneal cavity using a laparoscope

abdomin/o-	abdomen
abdominoplasty	cosmetic surgery of the abdomen
abdominocentesis	puncture of the abdomen for the withdrawal of fluids
celi/o-	belly, abdomen
celioenterotomy	incision to gain access to the intestines
celiogastrotomy	incision, through the abdomen, into the stomach
celiotomy	surgical incision into the abdominal cavity
pylor/o-	pylorus (lower orifice of the stomach, opening to the duodenum)
pyloroplasty	operation to repair the pylorus
pyloric stenosis	narrowing of the pyloric orifice
pyloralgia	pain around the pylorus
pyloritis	inflammation of the pylorus
pyloromyotomy	incision and suture of the pyloric sphincter
pylorospasm	spasmodic contractions of the pyloric sphincter
uvul/o-	uvula
uvulitis	inflammation of the uvulus
uvulectomy	removal of part or all of the uvula
uvuloptosis	relaxed and pendulous condition of the palate
palat/o-	palate
palatitis	inflammation of the palate
palatoplasty	surgical repair of the palate
palatoplegia	paralysis of the muscles of the soft palate
peritone/o-	peritoneum
peritoneal	relating to the peritoneum, the serous membrane lining the abdominal cavity
peritonitis	inflammation of the peritoneum
peritonealgia	pain of the peritoneum
polyp-	a tumor with a pedicle (many footed)
polyposis	the presence of numerous polyps
polypotome	instrument for the excision of polyps
polypectomy	surgical removal of a polyp
sialo-	saliva
sialolith	a salivary concretion or calculus
sialadenitis	inflamed condition of a salivary gland
sialoadenotomy	incision of a salivary gland
sialolithotomy	removal of a calculus from a salivary gland or duct
sialaporia	deficient secretion of saliva

sialitis	inflammation of a salivary gland
sialorrhea	excessive flow of saliva
sialostenosis	closure of a salivary duct
pancreat-	pancreas
pancreatitis	inflammation of the pancreas
pancreatomy	surgical incision into the pancreas
related terms	
achalasia	failure to relax a muscle
achylia	absence of chyle or other digestive juice
adhesions	a holding together or binding of two parts
aerophagia	swallowing of air
anastomosis	surgical or pathological connection of two tubular structures
anorexia	psychiatric condition involving self-deprivation of food, lack of appetite, and pathological weight loss
apepsia	cessation of digestion
aphagia	inability to swallow
ascites	accumulation of fluid in the peritoneal cavity
atresia	congenital absence or closure of a normal opening
bradyphagia	abnormal slowness in eating
bulimia	a neurotic disorder characterized by binge eating, followed by vomiting or induced diarrhea
cachexia	a state of ill health, wasting, or malnutrition
cirrhosis	chronic disease of the liver
crohn's disease	an ongoing disorder that causes inflammation of the digestive tract
diarrhea	medication encouraging the movement of feces
dysentery	painful, inflamed intestines
dyspepsia	painful digestion
dysphagia	difficulty speaking
emesis	vomiting
eructation	producing gas from the stomach – belching
feces	solid wastes – stool
gavage	feeding with a stomach tube
glucose	simple sugar
hepatic portal system	capillary networks of the intestines and liver which are connected via the portal vein
herpes simplex	cold sores, fever blisters – caused by a virus
intussusception	telescoping of the intestine – common in children
laxative	medication encouraging the movement of feces
leukoplakia	white plaques or patches of mouth mucosa
melena	black stool – feces containing blood
nasogastric	pertaining to the nose and stomach

nausea	urge to vomit
peptic ulcer	lesion on the wall of the stomach (peptic ulcer)
polyphagia	eating abnormally large amounts of food at a meal
volvulus	twisting of the intestine upon itself

Pathway of food through the digestive tract

