

## The Human Torso

Locate the following body parts on your model and read about their function. The body part definitions are arranged from the top of the model to the bottom and from the outside of the model to the inside.

**brain:** control center of the body, which does everything from coordinating our movements to managing our thoughts and emotions. The brain is divided into two hemispheres.

**left brain hemisphere:** controls verbal, analytical, and sequential thinking and logical processing

**right brain hemisphere:** controls emotional expression, visual imagination and nonverbal processing, and is typically associated with the intuitive, creative and artistic aspects of behavior

**muscular system:** part of our body that allows us to move; muscles are made up of special tissues that can contract, or shorten, when they receive a signal from the brain.

**trachea:** windpipe that brings oxygen to our lungs. The trachea divides into the left and right bronchi. (On the model, the trachea is attached to the esophagus.)

**esophagus:** leads chewed food from the throat to the stomach. (On the model, the esophagus connects to the trachea.)

**lungs:** two organs of respiration that bring fresh oxygen into our bodies and remove carbon dioxide and other gaseous waste products

**bronchi:** tube that leads to both lungs. Like a branch, once inside the lung, each bronchus divides again and again, becoming narrower and narrower.

**diaphragm:** muscle in our rib cage that pulls air into our lungs. As we breathe air in, the diaphragm contracts, or tightens and flattens, allowing air to be sucked into the lungs.

**heart:** engine of the circulatory system that pumps oxygen-rich blood throughout the body

**pulmonary artery:** one of the main arteries of the heart. It transports blood from the heart to the lungs.

**aorta:** an artery of the heart, which transports blood from the heart to the rest of the body. Blood provides important nourishment to all body organs and tissues.

**stomach:** storage organ for large quantities of food. Protein in your food is digested here.

**liver:** body's largest organ. Its two main functions are to process nutrients from the intestine and to remove unwanted or harmful chemicals that are produced in the body or that are taken into the body.

**gall bladder:** excess bile is stored in the gall bladder. It is a green muscular sac attached to the lower part of the liver. (On the model, the gall bladder is located on the liver.)

**spleen:** organ involved in the production and maintenance of red blood cells. It is located on the left side of the body behind the stomach.

**intestines:** tube that extends from the stomach and completes the job of digesting food so that food can be absorbed in the blood. The intestines are comprised of two main sections.

**small intestine:** longest section of the digestive tract with an average length of about 6 meters. Almost all the body's nutrient absorption occurs in the small intestine.

**large intestine:** also known as the colon, the large intestine is the final organ of the digestive process. It is responsible for drying out indigestible food residues by absorbing fluid and producing solid waste for elimination.

**vertebrae:** also known as the backbone. The vertebrae supports the body in an upright position and protects the spinal cord.

**kidney:** two bean-shaped organs, located in the middle of the back. Among other functions, kidneys regulate the composition of the blood and stimulate the making of red blood cells.

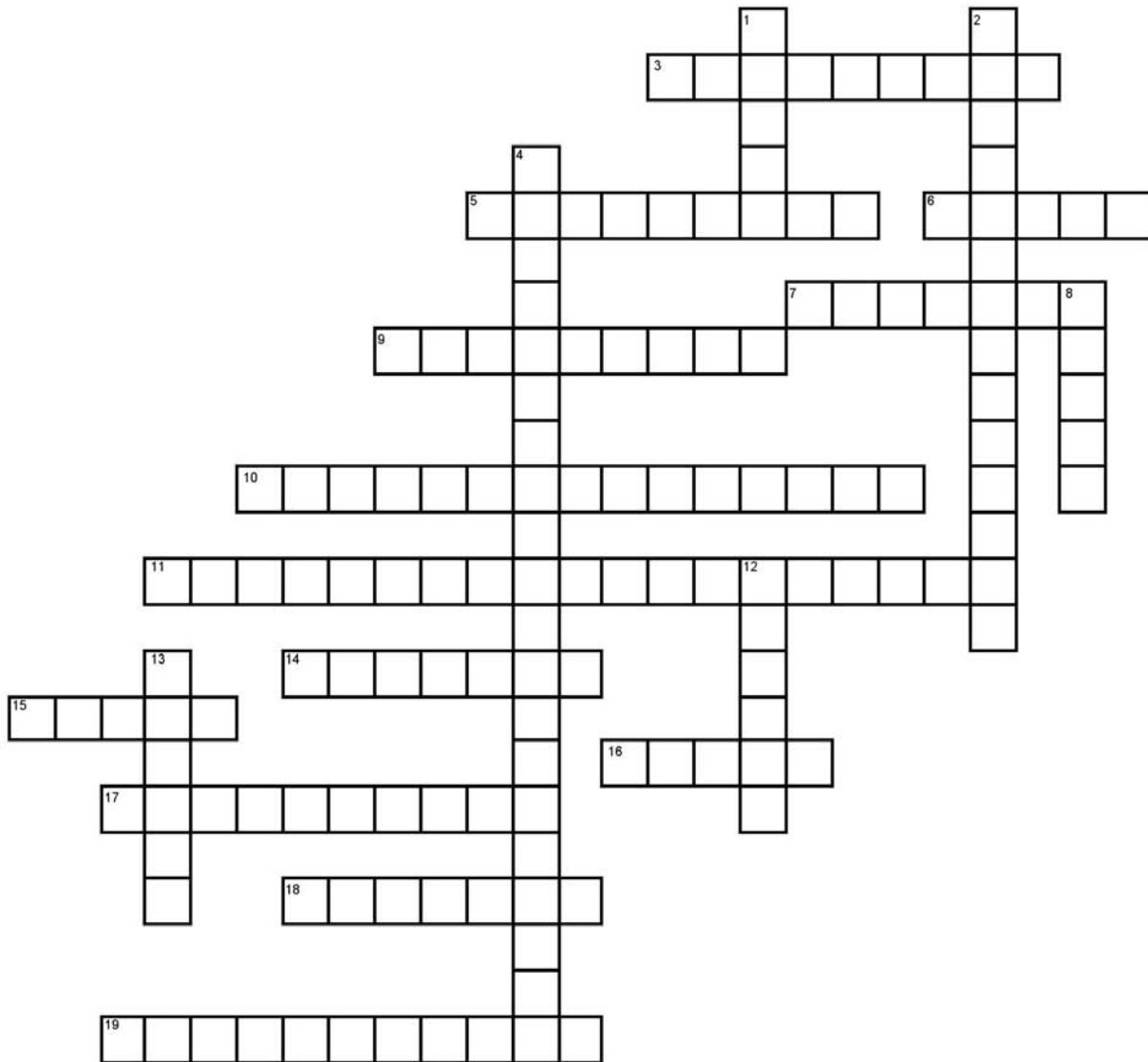
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## Word Scramble

Directions: Unscramble the letters in each word to identify a body part from the human torso.

1. TRHEA \_\_\_\_\_
2. LYPUNOARM YTRAER \_\_\_\_\_
3. AUCLSURM TMSSYE \_\_\_\_\_
4. RAOTA \_\_\_\_\_
5. SIEHESMREPH \_\_\_\_\_
6. TNISTEINES \_\_\_\_\_
7. CRTEAHA \_\_\_\_\_
8. EPENLS \_\_\_\_\_
9. CRNBHIO \_\_\_\_\_
10. OHSSUGPEA \_\_\_\_\_
11. GLAL IDRBEAD \_\_\_\_\_
12. BINRA \_\_\_\_\_
13. EILVR \_\_\_\_\_
14. SOAHCMT \_\_\_\_\_
15. VETRABEER \_\_\_\_\_
16. EYDINK \_\_\_\_\_
17. RAMHGPAID \_\_\_\_\_

## Torso Crossword Puzzle



### Across

3. Leads food from the throat to the stomach
5. The muscle in our rib cage that pulls air into our lungs
6. The organs of respiration
7. The storage organ for food
9. The bone that supports the body and protects the spinal cord
10. The artery that transports blood to the lungs
11. Controls verbal, analytical, and sequential thinking
13. The bean-shaped organ that stimulates the making of red blood cells
14. The windpipe
15. The control center of the body
16. The body's largest organ
17. The longest organ in the body that has the job of finishing digestion
18. The branch-like tubes that lead air into our lungs
19. The organ that stores excess bile

### Down

1. One of the main arteries of the heart
2. The system in our body that allows us to move
4. Controls emotional expression and visual imagination
8. The organ that pumps blood throughout the body
12. An organ involved in the production of red blood cells

## Respiratory Fun

Here's a fun experiment to test how much air your lungs can hold.

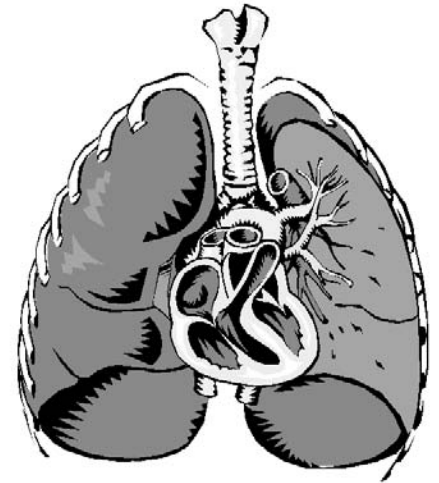
You can measure the maximum volume of air your lungs can hold with a device called a spirometer. Most spirometers are bulky, expensive devices, but you can make a simple spirometer using materials found at home.

### Materials needed:

1 liter plastic soda bottle  
piece of tubing (about 1 foot in length)  
mixing bowl  
measuring cup

### Procedure:

1. Fill the soda bottle all the way to the top with water. Put the soda bottle in the bowl and place one end of the tubing into the bottle. Be careful not to displace a lot of water when the tube is put into the bottle.
2. While a partner holds the bottle, inhale as deeply as you can and exhale normally into tube that leads to the bottle. **DO NOT** blow out all of the extra air in your lungs; just exhale to the point you would if you exhaled a normal breath. The water will spill out of the bottle and into the bowl. Take this water and pour it into the measuring cup to gauge the amount of water that was expelled with the air in your lungs. Keep the water in the measuring cup. This measurement is called the "inspiratory reserve."
3. Refill the bottle. Now take a normal breath and exhale as you normally would. Next, use your diaphragm to help blow into the tube all of the extra air still in your lungs. Pour this water into the measuring cup. This measurement is called the "expiratory reserve."
4. Record what the measuring cup is holding. The amount of water in the measuring cup that was expelled from your lungs from both breaths is your "vital capacity." This number is the maximum amount of air your lungs can hold.

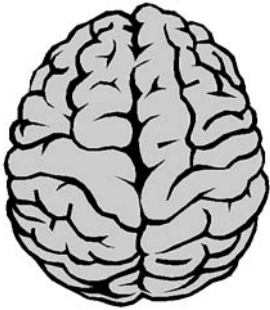


### Questions:

1. Who had the highest "vital capacity" in the group?
2. Was this person tall, short, big, small, male, female?
3. What do you think makes a person have a large "vital capacity"?

## What Do They Do?

For each body part displayed, choose words from the list below that describe something about it. Some words can be used for more than one body part.



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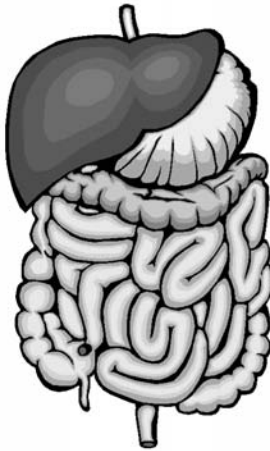
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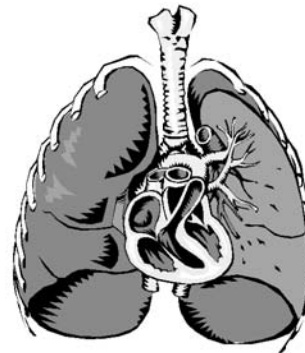
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blood  
brain  
breathing  
carbon dioxide  
circulatory system

digestive system  
emotions  
heart  
intestines  
liver

lungs  
moving  
nervous system  
nourishment  
oxygen

respiratory system  
stomach  
thinking

# Answer Sheet for Torso Reproducibles

## Word Scramble

1. heart
2. pulmonary artery
3. muscular system
4. aorta
5. hemispheres
6. intestines
7. trachea
8. spleen
9. bronchi
10. esophagus
11. gall bladder
12. brain
13. liver
14. stomach
15. vertebrae
16. kidney
17. diaphragm

## Crossword Puzzle

### Across

3. esophagus
5. diaphragm
6. lungs
7. stomach
9. vertebrae
10. pulmonary artery
11. left brain hemisphere
14. trachea
15. brain
16. liver
17. intestines
18. bronchi
19. gall bladder

### Down

1. aorta
2. muscular system
4. right brain hemisphere
8. heart
12. spleen
13. kidney

## What Do They Do?

Illustration 1: brain

- emotions
- imagination
- moving
- nervous system
- thinking

Illustration 2: heart

- blood
- carbon dioxide
- circulatory system
- heart
- oxygen

Illustration 3: digestive system

- digestive system
- intestines
- liver
- nourishment
- stomach

Illustration 4: lungs

- breathing
- carbon dioxide
- lungs
- oxygen
- respiratory system