

Grade 6 Science

Week of Sept 28- Oct 2

Curricular Area: Biology

Lesson Materials (This PDF)

- Lesson 1.1 – The Excretory System
- 1.1 The Excretory System Learning Guide

Task

Read through Lesson 1.1. The Excretory System in this Learning Guide. After you read through the lessons, complete the activities in the Learning Guide which follow the lesson pages.

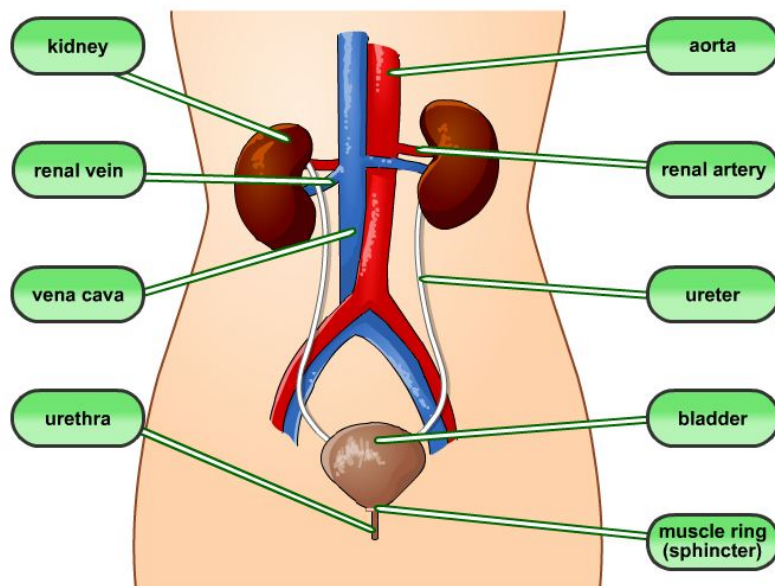
You can print the Learning Guide, or, copy out the questions on a separate piece of paper.

The Excretory System - Taking Care of Wastes

You'll learn all the inner workings of this very efficient system, and about how it gets rid of the body's waste products by a process called **excretion**. Excretion takes place via the excretory system.

[Watch this video to get started.](#)

Wastes--the Unusable Products



Your blood travels through your body carrying nutrients to every cell. It also carries wastes away from each cell. There are hundreds of chemical reactions occurring in your body every second. These chemical reactions transmit nerve impulses, make heart cells contract, build new cells out of simple amino acids. These and other processes like digestion and metabolism (when the body turns food into energy) create wastes. These wastes are compounds that the body can not use. Getting rid of these wastes is as important as producing the things the body does need.

Organs of Excretion

The process of getting rid of waste products is called excretion. There are many ways that waste is excreted from our bodies including tears, and the release of gasses across our skin as we sweat. The excretory system also includes two important bean-shaped organs called kidneys. These are the main organs involved in filtering soluble wastes (waste material that is dissolved in our blood stream) from the blood. Each kidney is a

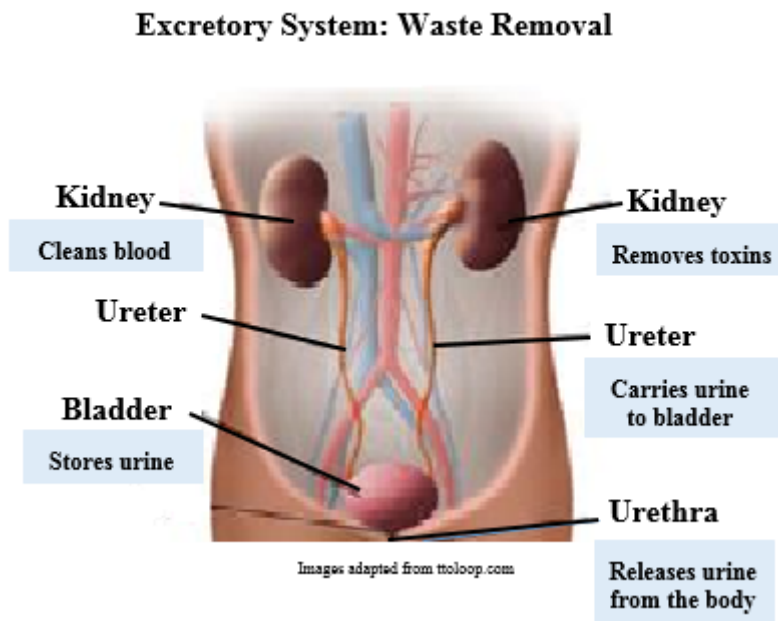
compact organ made of a network of blood vessels and collecting tubes. These collecting tubes are called nephrons. Your blood circulates through your entire body in about one minute and your kidneys filter your blood about 400 times a day.

Your Kidneys have two very important jobs in your body; filter waste from the blood and to produce pee to get rid of the waste. If this did not happen all of the toxins (bad stuff) would quickly build up in your body.

A tube called the ureter leads from each kidney into the bladder. The bladder is a hollow muscular organ that acts as a storage tank for liquid wastes until the body is ready to eliminate it. During urination, the liquid passes from the bladder through a hollow tube called the urethra to the outside.

The Kidneys

The diagram below shows the shape of the kidney and explains its function in the human body.



The Kidney: Removing Waste

Blood, waste, and water enter the kidney through the Renal artery.

Blood without waste or excess water leave here through the Renal Vein and is recirculated into the body.

Excess water and toxic waste is turned into urine and leaves via the Ureter.



Images adapted from healthmedicinesonline.com

Did You Know...?

Some people suffer from kidney failure. When this happens, a process called dialysis can purify the blood.

A person needing dialysis will go to a clinic, possibly two or three times a week, and spend several hours connected to a dialysis machine. Two needles are inserted into one arm—one to remove blood from the body and carry it to the machine; the other to transport purified blood from the machine back into the body. With the help of dialysis, most patients lead fairly normal, active lives.

Other Ways to Cleanup

Some of the excess compounds secreted by your body is harmless (e.g., water). Others can become toxic if they build up in the body. These products are wastes, and your body has to take out the garbage to stay healthy. Although the excretory system is responsible for removing most of the wastes from the body, several other organs are also involved.

The Lungs

Every time you inhale, your lungs take in the oxygen needed for cellular respiration. Carbon dioxide, the by-product of respiration, is toxic and the lungs excrete this gas every time the body exhales. Small amounts of excess water are also excreted with each exhalation, although most water is processed through the kidneys.

The Skin

When the body sweats, it is getting rid of excess water. Sweat, or perspiration, also contains excess salts and other soluble waste products; that's why it tastes salty.

Sweating only gets rid of a small portion of the wastes. Most of the work is done by the excretory system.

The Liver

Although the liver is not an excretory organ, it plays an important role in the process and is one of the most important organs in your body. The liver processes toxic substances that enter the body (e.g., alcohol) and helps to eliminate them.

[Ready to check your understanding? Click HERE for a review quiz for this lesson.](#)

Unit 1 ~ Learning Guide

Name: _____

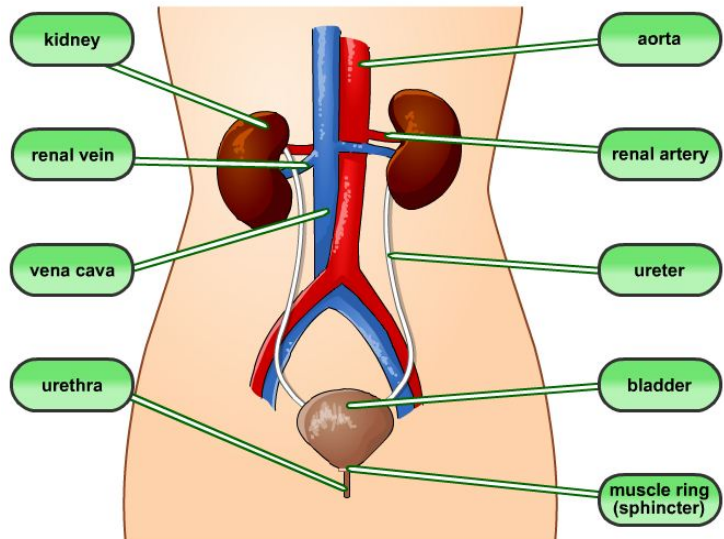
INSTRUCTIONS

Complete the following notes and questions as you work through the related lessons. You are required to have this package completed BEFORE you write your unit test. Do your best and ask questions about anything that you don't understand BEFORE you write the unit test.

1.1 NOTES: THE EXCRETORY SYSTEM

1.1 Taking Care of Wastes

You'll learn all the inner workings of this very efficient system, and about how it gets rid of the _____ by a process called _____. Excretion takes place via the excretory system.



Wastes--the Unusable Products

Your blood travels through your body carrying _____ to _____. It also carries _____ away from _____. There are hundreds of _____ occurring in your body every second. These chemical reactions _____ of simple amino acids. These and other processes like _____ (when the body turns food into energy) _____. These wastes are compounds that the body _____. Getting rid of these wastes is as important as producing the things the body does need.

Organs of Excretion

The process of getting rid of waste products is called _____. There are many ways that waste is excreted from our bodies including _____, and the release of gasses across our _____ as we sweat. The excretory system also includes two important bean-shaped organs called _____. These are the main organs involved in _____ (waste material that is dissolved in our blood stream) _____. Each kidney is a compact organ made of a network of _____. These collecting tubes are called _____. Your blood circulates through your entire body in about ___ minute and your kidneys filter your blood about _____ times a day.

Your Kidneys have two very important jobs in your body; _____ from the blood and to produce _____ to get rid of the waste. If this did not happen all of the _____ (bad stuff) would quickly build up in your body.

A tube called the _____ leads from each kidney into the _____. The bladder is a hollow muscular organ that acts as a _____ for liquid wastes until the body is ready to _____. During urination, the liquid passes from the bladder through a hollow tube called the _____ to the outside.

Other Ways to Cleanup

Some of the excess compounds secreted by your body is harmless (e.g., water). Others can become toxic if they build up in the body. These products are wastes, and your body has to take out the garbage _____. Although the excretory system is responsible for removing most of the wastes from the body, several other _____ are also involved.

The Lungs

Every time you inhale, your lungs take in the oxygen needed for cellular respiration. _____, the by-product of respiration, is toxic and the lungs _____ every time the body _____. Small amounts of excess water are also excreted with each exhalation, although most water is processed through the kidneys.

The Skin

When the body _____, it is getting rid of excess water. Sweat, or perspiration, also contains excess _____; that’s why it tastes salty.

Sweating only gets rid of a small portion of the wastes. Most of the work is done by the excretory system.

The Liver

Although the liver is not an excretory organ, it plays an important role in the process and is one of the most important organs in your body. The liver _____ that enter the body (e.g., alcohol) and helps to eliminate them.

1.1 PRACTICE: THE EXCRETORY SYSTEM

1. Go to the following link and complete the quiz.
<http://kidshealth.org/en/kids/usquiz.html?WT.ac=ctg>

SCORE (Put your score below:)

2. What are some of the other organs of excretion?

3. Why is it important to get rid of waste?

