

Excretory System Unit

- The excretory system removes excess...

A

Nutrients
Marrow
Cells
Oxygen

B

Oxygen
Nutrients
Plasma
Air

C

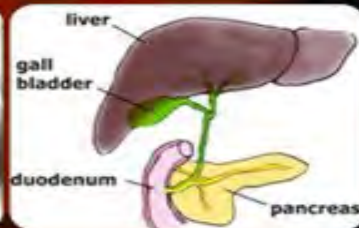
Water
Salts
CO₂
Urea

- The remaining organs of the excretory system are the **kidneys**, **liver**, and **skin**.



- The liver produces bile which is stored in gall bladder.

- This is given to the small intestine and used to break down acidic wastes such as ammonia as well as fats and ethanol, converting them into harmless substances.



- What's the next organ that's a part of the excretory system?

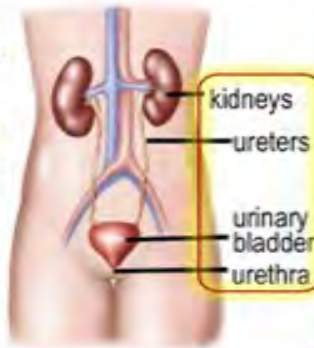


- The excretory system provides a pathway to remove wastes from the body.



Urinary System / Renal System

Organs of the Urinary System



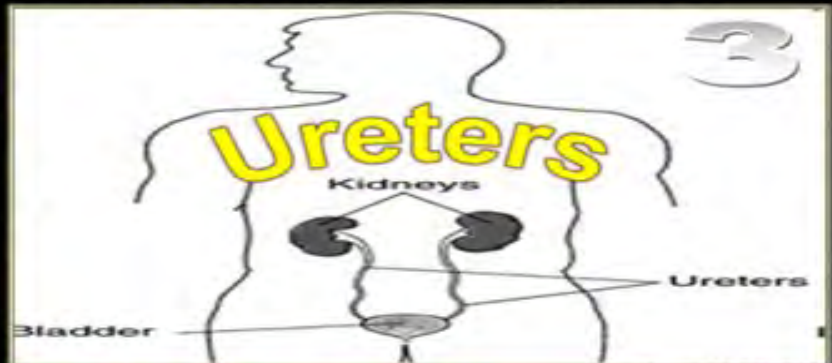
4 Lessons

Interactive Slideshow

- Which letter below is this cat's right kidney?



- Name the tube that urine flows through from the kidney to the urinary bladder?



like strainers.

- Waste in the blood spills out through the holes while the nutrients and blood do not.



Urine is about 96% Water.

- The kidneys: They filter waste products from the blood to keep it clean and balanced.



- filtrate. It contains water, ions, and small molecules.
- Glomerulus: Filters small solutes from the blood.
- Loop of Henle: Reabsorbs Na^+ and Cl^- from the filtrate. Allows water to pass.
- Proximal tubule: Reabsorbs ions, water, and nutrients, removes toxins, adjust pH.
- Distal Tubule: Secretes and absorbs ions to maintain blood pH.
- Capsule: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood.

1

[illegible][illegible]

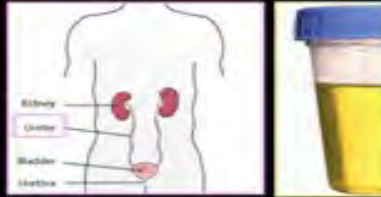
Sketch in the pencil sketching phase. Use a pencil to sketch the structure and components of the system. The sketching phase is the most important phase of the design process. It is the phase where the designer can explore different solutions and make changes as needed. The sketching phase is also the phase where the designer can communicate their ideas to others. The sketching phase is the phase where the designer can see the big picture and make sure that the system is designed to meet the requirements. The sketching phase is the phase where the designer can see the details and make sure that the system is designed to meet the requirements. The sketching phase is the phase where the designer can see the big picture and make sure that the system is designed to meet the requirements. The sketching phase is the phase where the designer can see the details and make sure that the system is designed to meet the requirements.

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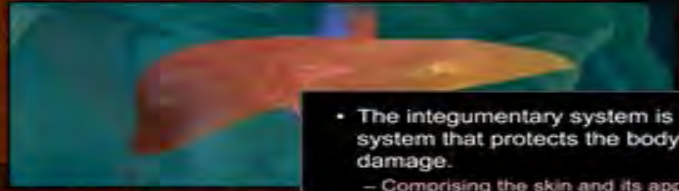
1. *Chlamydomonas reinhardtii* (Chlamydomonas reinhardtii)

Activities, notes, assessments, review, games, and more all built-in

- The kidneys process about 200 quarts of blood and produce 2 quarts of waste product (urine).
- The urine travels through the ureters to the bladder.



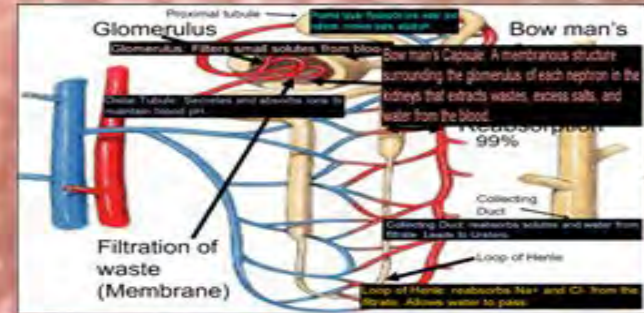
- Cirrhosis is a late stage of scarring (fibrosis) of the liver caused by many forms of liver diseases and conditions, such as hepatitis and chronic alcoholism.
- Each time your liver is injured — whether by disease, excessive alcohol consumption or another cause — it tries to repair itself.



- Kidney Stone: A hard mass formed in the kidneys, typically consisting of insoluble calcium compounds.



- The integumentary system is the organ system that protects the body from damage.
- Comprising the skin and its appendages (including hair and nails.)



- General rule, you want your urine to be clear and copious.

Copious: Abundant in supply or quantity.
Not bright yellow once a day.



- The Kidneys: They filter waste products from the blood to keep it clean and balanced.

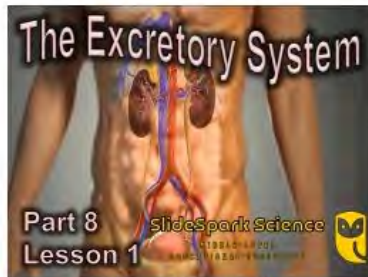
- **Sweat glands** are small tubular structures of the skin that produce a fluid. This fluid evaporates and changes from a liquid to a gas, energy is required for the phase change.
- Heat is then removed from your body as the fluid evaporates.



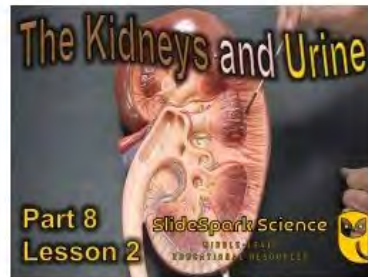
Multiple Systems
Urinary System and
Circulatory System
Working Together

Excretory and Integumentary Systems Part 8 4 Lessons of 50 Minutes and 9 Page Follow Along Work Bundle, Removal of Waste, Kidneys, Nephron, Diagram of Nephron, Parts of a Nephron and Function, Homeostasis, Urine, Urine Color, Ureters, Bladder, Urethra, Liver, Gall Bladder, Bile, Cirrhosis of the Liver, Integumentary System, Skin, Parts of the Skin, Finger Prints, Finger Print Activity, Hair, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 8: Excretory System, Integumentary System



Part 8 Lesson 1 Excretory System



Part 8 Lesson 2 Urine Kidneys



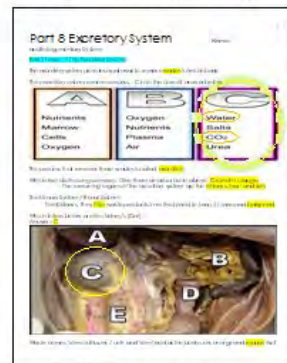
Part 8 Lesson 3 Integumentary Systems



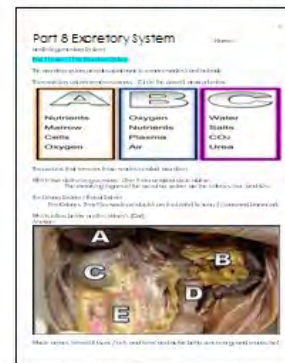
Part 8 Lesson 4 Review Quiz 10Q



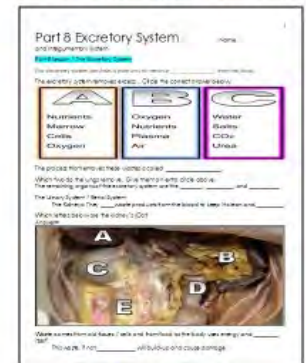
Part 8 Lesson 5 Quiz Answers 10Q



Part 8 Work Bundle Answers



Part 8 Work Bundle Print with notes



Part 8 Work Bundle Print

SlideSpark Science

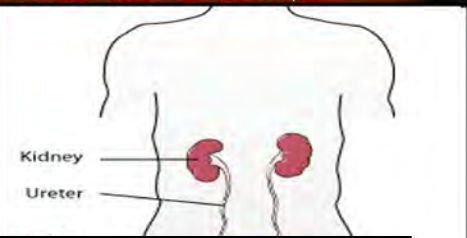


MIDDLE-LEVEL EDUCATIONAL RESOURCES

Interactive slideshows provide the roadmap for an amazing learning experience for students in grades 5-9. A Detailed set of work bundles chronologically follow the digital learning, providing a clear and intuitive roadmap to understanding. As the teacher or student advances through a slideshow, exciting hands-on activities, fantastic visuals, fill-in notes, review opportunities, video links, assessments, and much more are strategically placed throughout. Interactive learning unfolds step by step and supported by the work bundle to reach all types of learners. Everything you need to run to an amazing learning experience is provided in this one-of-a-kind science curriculum.

Each unit in the curriculum is designed to help teachers deliver the best possible learning experience for their students. Our interactive science slideshows are filled with questions and answers, important fill-in notes, hands-on activities, projects, games, built-in quizzes, and end of the unit assessment pieces. Students follow along with a work bundle that documents the entire learning experience for a fantastic review and assessment piece.

- The excretory system provides a pathway to remove wastes from the body.



- The excretory system removes excess...

A

Nutrients
Marrow
Cells
Oxygen

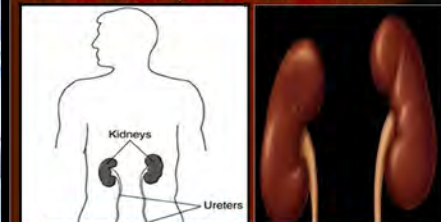
B

Oxygen
Nutrients
Plasma
Air

C

Water
Salts
CO₂
Urea

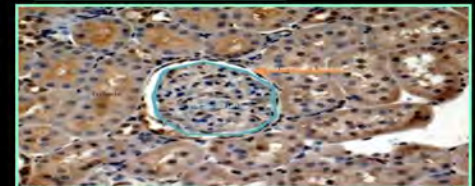
- The Kidneys: They filter waste products from the blood to keep it clean and balanced.



Learn more about the kidneys and kidney diseases at...
<http://www.webmd.com/urinary-problems/qa/picture-of-the-kidneys>

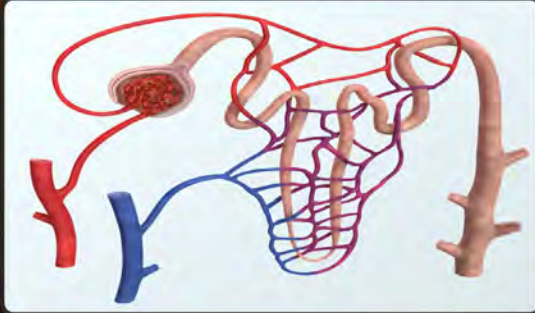
- Each kidney has how many nephrons?

- A.) $\frac{1}{2}$ a nephron
- B.) One full nephron
- C.) 6 nephrons
- D.) A million nephrons



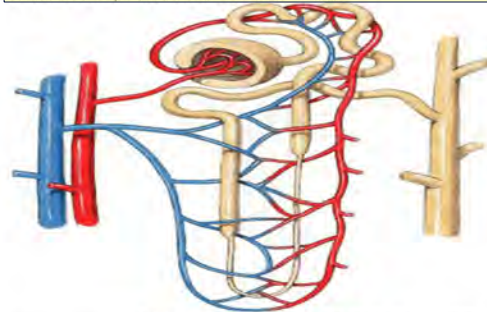
2

- A nephron is the basic structural and functional unit of the kidneys that regulates water and soluble substances in the blood by filtering the blood, reabsorbing what is needed, and excreting the rest as urine.



A _____ is the basic structural and functional unit of the kidneys that regulates water and soluble substances in the blood by _____ the blood, _____ what is needed, and excreting the rest as _____.

Please label the Nephron below as described in the slideshow.



Glomerulus: Filters small solutes from _____.
Loop of Henle: Reabsorbs Na^+ and Cl^- from the filtrate. Allows water to pass.
Proximal tubule: Secretes and _____ ions, water, and nutrients, removes toxins, adjust pH.

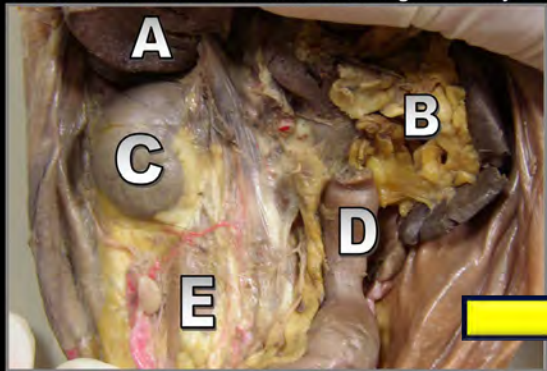
Distal tubule: Secretes and absorbs ions to maintain blood pH.
Collecting duct: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood. In the nephron, a tiny blood vessel (capillary) intertwines with a tiny urine-collecting tube called a tubule.

The tiny blood vessels in the nephrons act like strainers.

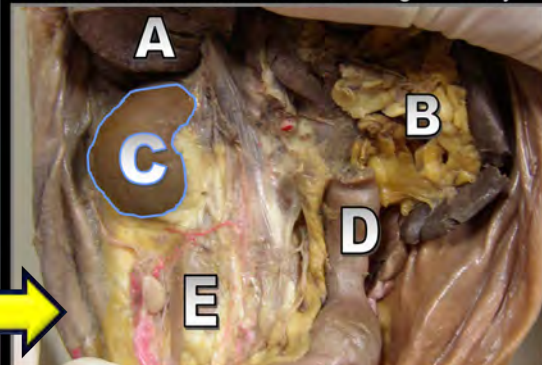
Red Slide Notes: Help students record important information in a fun and easy-to-understand way. Designed red-colored slides contain a few pieces of crucial information that students must record into their work bundle to complete the notes. Students will use these important notes throughout the work bundle.

The set-up of the slideshows are designed to make learning fun and interactive for students. With a mix of questions and answers, teachers can use these slides to get their students thinking and actively participating in their education. Plus, the answers are always revealed on the next slide, providing students with immediate feedback and helping teachers assess their understanding.

• Which letter below is this cat's Right Kidney?



• Which letter below is this cat's Right Kidney?



Next Slide

slideshow supports
Work Bundle

Part 8 Excretory System
and Integumentary System

Name: _____

Part 8 Lesson 1: The Excretory System

The excretory system provides a pathway to remove _____ from the body.
The excretory system removes excess... Circle the correct answer below.

A Nutrients Marrow Cells Oxygen	B Oxygen Nutrients Plasma Air	C Water Salts CO ₂ Urea
--	--	---

The process that removes these wastes is called _____.
Which two do the lungs remove. Give them an extra circle above.
The remaining organs of the excretory system are the _____ and _____.

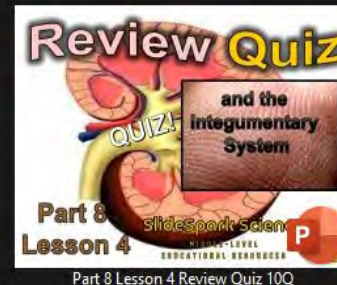
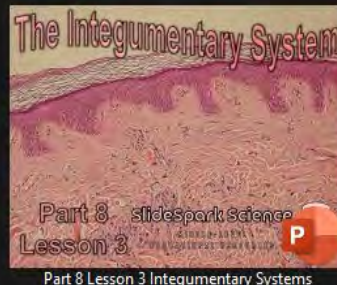
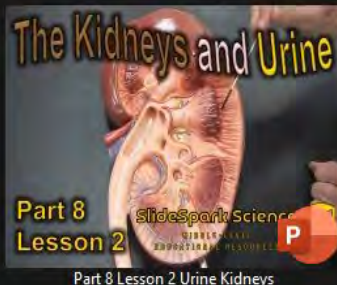
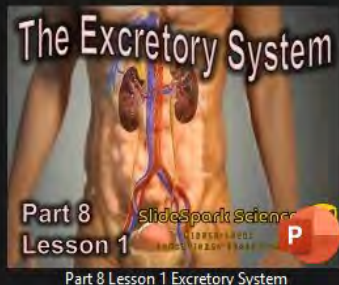
The Urinary System / Renal System
The Kidneys: They _____ waste products from the blood to keep it clean and _____.

Which letters below are the kidney's (Cat)?
Answer: _____

Waste comes from old tissues / cells and from food as the body uses energy and _____ itself.
This waste, if not _____, will build-up and cause damage.

Lesson Planning

Daily lessons space exciting hands-on activities, red slide notes, video and academic links, projects, simulations, readings, built-in quizzes, and review opportunities throughout the slideshows. A typical day may have many different learning styles being targeted. Daily lesson planning becomes advancing through the slideshow roadmap the night before. Each lesson is roughly 50 minutes, but sometimes things can speed up or slow down. The best strategy is just to go at your classes own pace. The work bundle chronologically follows the interactive slideshow and you can always spend extra time assessing the quality of the writing within. If you don't quite finish a lesson, you can always pick it up the next day where you left off. The only real trick in timing is not starting a larger activity if you don't have the available time to complete. The slideshows have been designed to be a low stress, go at your classes own pace experience. Most activities are designed to be cost effective, using general materials that can be gathered from your local stores.



Follow Along Work Bundle

Each science unit comes with several work bundles. The bundles should be printed before the unit begins and distributed to the students on the first day of the unit. The work bundles will be due shortly after the completion of the unit. The work bundle will become a resource for the review games, crossword puzzles, and will be collected for assessment. The work bundle follows the entire learning experience and will be used every day. They are chronological to the lessons and provide places to record fill-in notes, answer questions, collect data, graph and much more. An answer version is provided that can be distributed to your support professionals. A digital version of the work bundle and some writable .pdf versions are provided if you want to go paperless. These work bundles are perfect for students looking for an easy and organized way to track their progress and stay on top of their studies.

Review Games / Assessments

This unit concludes with two review quizzes. Answers are provided in slideshow form so students can self assess. A blank template sheet is provided in the work bundle. Students can benefit from working together in small table groups with quiet communication. You can decide if you want to allow the use of work bundles or not. These are a nice review opportunity and get the students looking through their work bundles for the answers.



Part 8 Lesson 4 Quiz Review Excretory and Integumentary System	
1.)	6.)
2.)	7.)
3.)	8.)
4.)	9.)
5.)	10.)
*11.) Bonus (5pts):	
*12.) Bonus (5 pts)	

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- The excretory system removes excess...¹

A

Water
Salts
CO₂
Urea

B

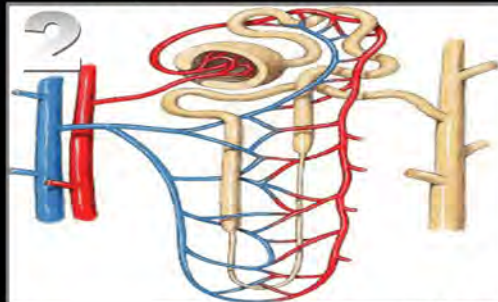
Oxygen
Nutrients
Plasma
Air

C

Nutrients
Marrow
Cells
Oxygen

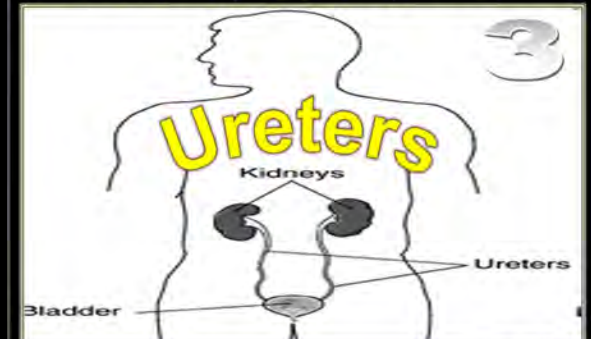
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- In the **nephron**, a tiny blood vessel (capillary) -intertwines with a tiny urine-collecting tube called a tubule.



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- Name the tube that urine flows through from the kidney to the urinary bladder?



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- This organ can detoxify toxins such as alcohol and amino acids.
 - Excessive alcohol consumption can lead to cirrhosis of this organ and death.



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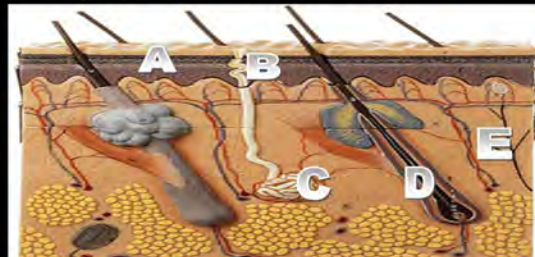
- Name the components of skin on the next page.

Sweat Gland
Epidermis

Hair Follicle
Sweat Pore

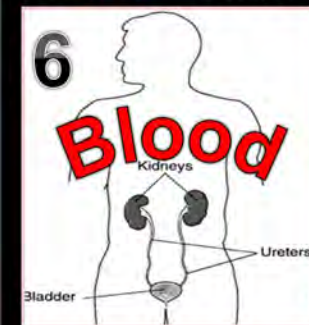
Dermis

5



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- The Kidneys: They filter waste products from the **blood** to keep it clean and balanced.



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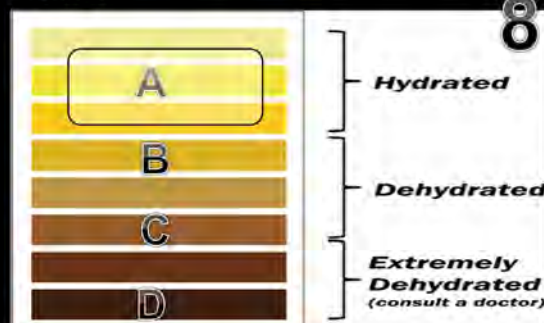
- Each kidney has how many nephrons?
 - A.) $\frac{1}{2}$ a nephron
 - B.) One full nephron
 - C.) 6,000 nephrons
 - D.) A million nephrons**
 - E.) Kidneys have villi and not nephrons.

7



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- Which letter is the most ideal color for your urine?



8

- Sweat glands** are small tubular structures of the skin that produce a fluid. This fluid evaporates and changes from a liquid to a gas, energy is required for the phase change.
 - Heat is then removed from your body as the fluid evaporates.



10

Built-in Video Links

Our science education program is designed with the modern, multimedia learner in mind, and our video links are a perfect complement to our educational materials. These short clips are embedded into the slideshow at just the right places for a fantastic review. Whether you're studying biology, chemistry or physics, our video links are an excellent way to reinforce your learning.

• Video Review

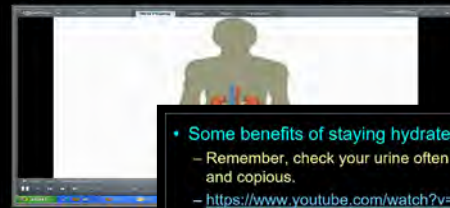
- <https://www.youtube.com/watch?v=OkyFPMXa28c>



• Video! The Urinary System (5:45)

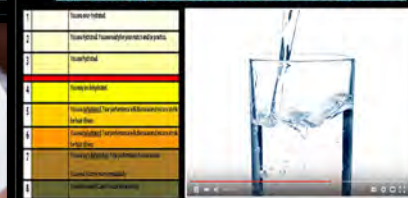
- Advanced Version (Optional)
- <https://www.youtube.com/watch?v=IfGYd1wrTgE>

Learn more about the urinary system and urinary problems at...
<http://kidney.niddk.nih.gov/kudisrises/pubs/yoururinary/>



• Some benefits of staying hydrated.

- Remember, check your urine often and be clear and copious.
- <https://www.youtube.com/watch?v=XGeygVI3ReY>



• Video! The Liver, Cirrhosis, and Alcohol

- <https://www.youtube.com/watch?v=-SBR7p7K-M>



Learn more about cirrhosis of the liver and alcoholism at...
<http://www.medicinenet.com/cirrhosis/article.htm>

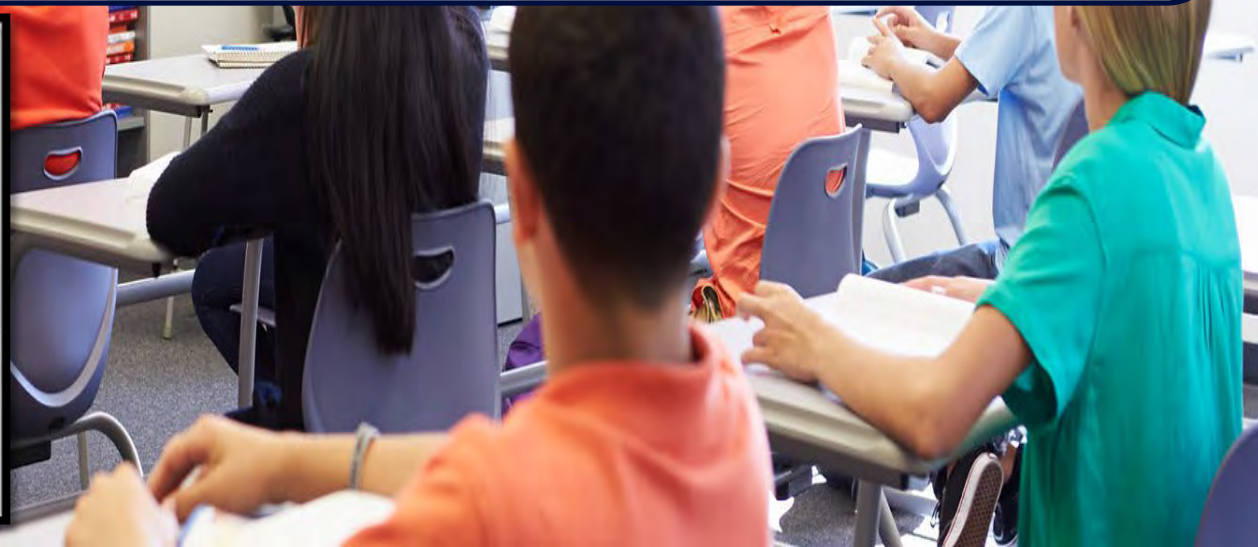
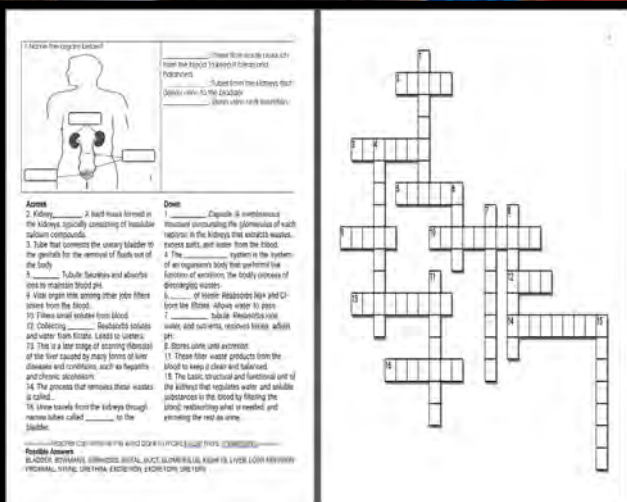
• Activity! (Optional) Fingerprints

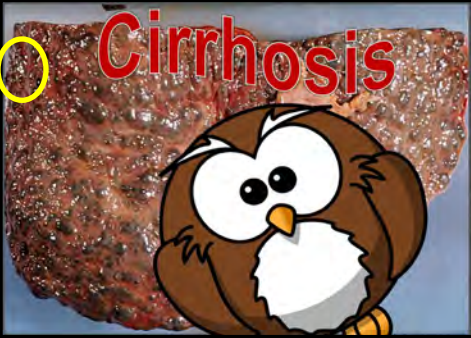
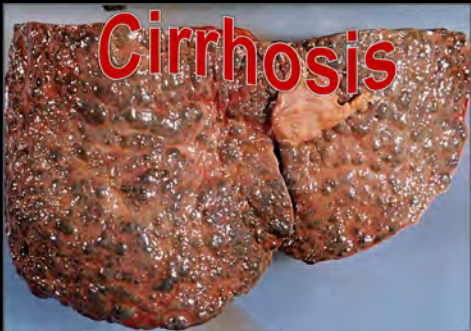
- <http://www.youtube.com/watch?v=PegPDzjzXYE>
- Watch video and make five thumb prints using a pencil and masking tape.
- Each person in group to make one thumb print on piece of tape.
- Move those single prints around without damaging them and try to identify your prints from your neighbors.



Games and Review

Games are a fantastic way for students to learn scientific concepts while having fun. We incorporate a variety of games into our curriculum, including interactive quizzes and puzzles that challenge students to think critically about the material. Our Hidden Box Games are a particularly popular feature, which conclude each unit by revealing a picture related to the topic. Students try to guess what the picture might be, making learning an engaging experience.





The Owl - Each Part of the slideshow has a small clipart Owl hiding somewhere in a slide. The owl is incredibly small and blended into just the right slide. If a student spots the "Owl" they can raise their hand high into the air. When you call upon the student they can say "Owl" and be the student who spotted the Owl. Each PowerPoint Review game also has an owl hiding in it worth one point. Remind the students that they secretly write the word "owl" rather than yell it out during the review games. The Owl search is not included in every lesson. A slide at the beginning of the lesson will alert the students that today is an "Owl" day. Everything arrives editable so delete if you wish. You will find that some students will become the expert owl hunters in the group.

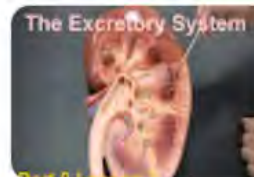
Google Classroom Compatible

Our digital learning programs are designed for students to learn science in a flexible and engaging environment. Our Google Classroom-compatible units provide a seamless learning experience whether your students are in the classroom or learning from home. Our step-by-step slideshows and student work bundles ensure that students can complete their work independently. The PowerPoint Slideshows and step-by-step work bundles can easily be loaded to your Google Drive and posted in your Google Classroom. These are great for daily lessons, students who need additional time, and for a student who was absent and looking to catch up in their work bundle.



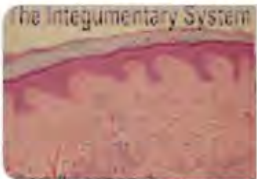
Part 8 Lesson 1 Excretory Sy...

Google Slides



Part 8 Lesson 2 Urine Kidneys

Google Slides



Part 8 Lesson 3 Integument...

Google Slides



Part 8 Lesson 4 Review Quiz...

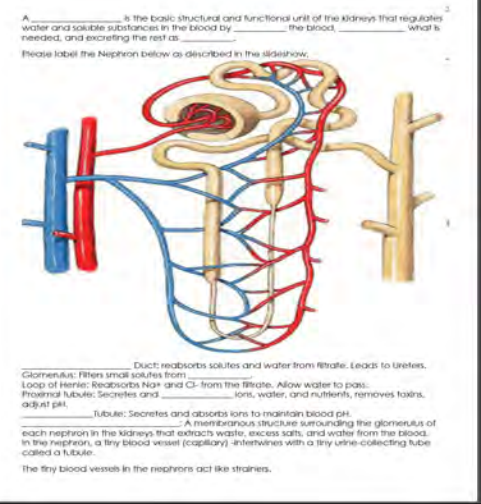
Google Slides

Built-in Questions and Assessments

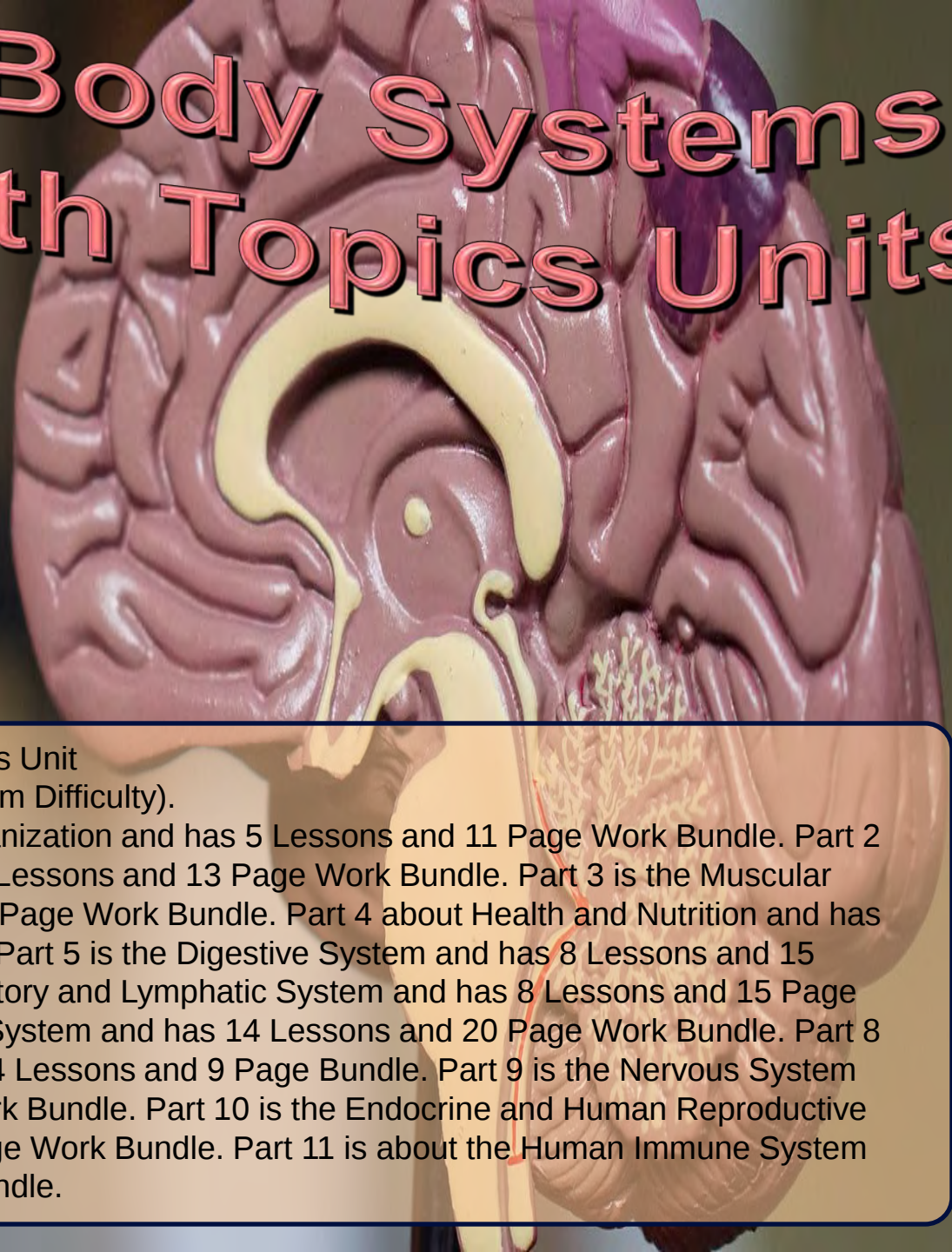
Many slides will have relevant terms covered with a box. When advancing through the slideshow an outline around the box will glow with a bright color. The next slide will make the box disappear. These slides allow the teacher to call upon students or table groups / check for understanding before advancing. The team at SlideSpark has found that using this technique helps to keep the students focused. Constantly recalling and reviewing information learned is necessary when moving through a large unit. The slideshows don't just give everything away for free. Students should be able to demonstrate knowledge before moving on. Some slides have full questions instead of just covered terms. In these slides, the teacher should encourage small group work. The teacher can then call upon one or two groups to share before advancing the slide. The next slide will always reveal the correct answer.

- Collecting Duct: Reabsorbs solutes and water from filtrate. Leads to Ureters.
- Glomerulus: Filters small solutes from blood.
- Loop of Henle: Reabsorbs Na^+ and Cl^- from the filtrate. Allows water to pass.
- Proximal tubule: Reabsorbs ions, water, and nutrients, removes toxins, adjust pH.
- Distal Tubule: Secretes and absorbs ions to maintain blood pH.
- Bow man's Capsule: A membranous structure surrounding the glomerulus of each nephron in the kidneys that extracts wastes, excess salts, and water from the blood.

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Human Body Systems and Health Topics Units



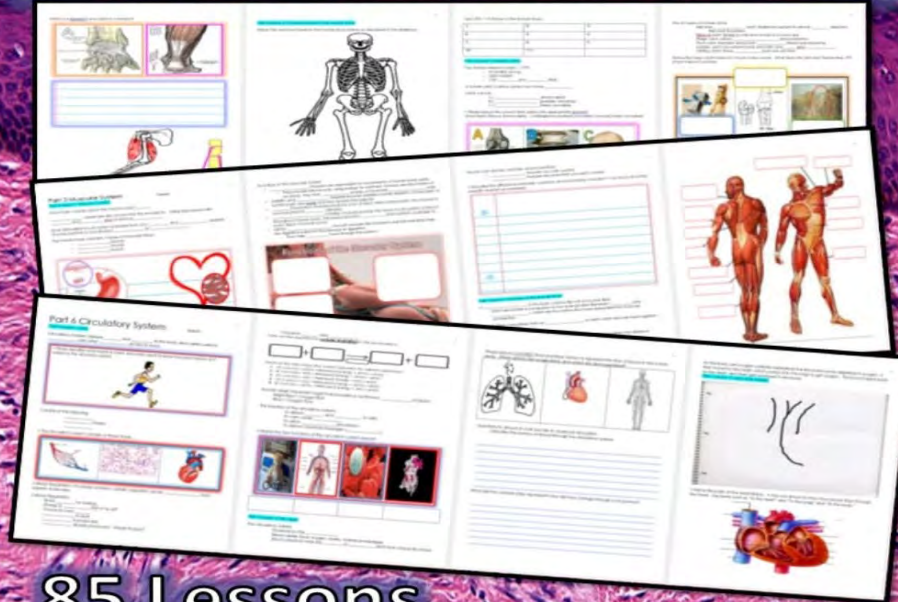
Human Body Systems and Health Topics Unit

Human Body Systems and Health Topics Unit

85 Lessons and 11 Parts. (6th- 8th Medium Difficulty).

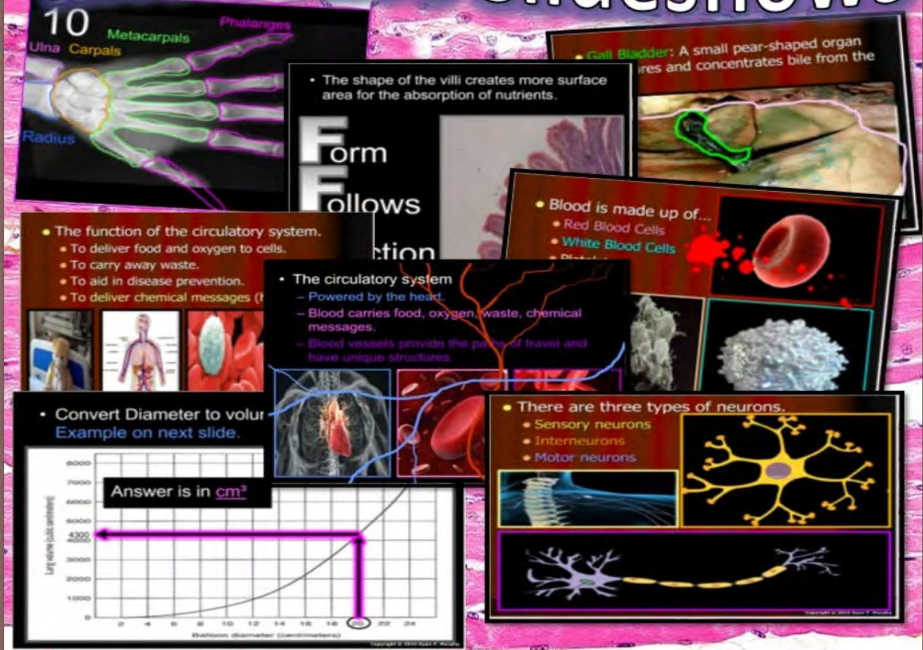
Part 1 is about Levels of Biological Organization and has 5 Lessons and 11 Page Work Bundle. Part 2 is about the Skeletal System and has 7 Lessons and 13 Page Work Bundle. Part 3 is the Muscular System and contains 4 Lessons and 10 Page Work Bundle. Part 4 about Health and Nutrition and has 12 Lessons and 25 Page Work Bundle. Part 5 is the Digestive System and has 8 Lessons and 15 Page Work Bundle. Part 6 is the Circulatory and Lymphatic System and has 8 Lessons and 15 Page Work Bundle. Part 7 is the Respiratory System and has 14 Lessons and 20 Page Work Bundle. Part 8 is about the Excretory System and has 4 Lessons and 9 Page Bundle. Part 9 is the Nervous System and has a 13 Lessons and 21 Page Work Bundle. Part 10 is the Endocrine and Human Reproductive System and has 11 Lessons and 19 Page Work Bundle. Part 11 is about the Human Immune System and is 4 Lessons and 10 Page Work Bundle.

Human Body Systems Unit



85 Lessons

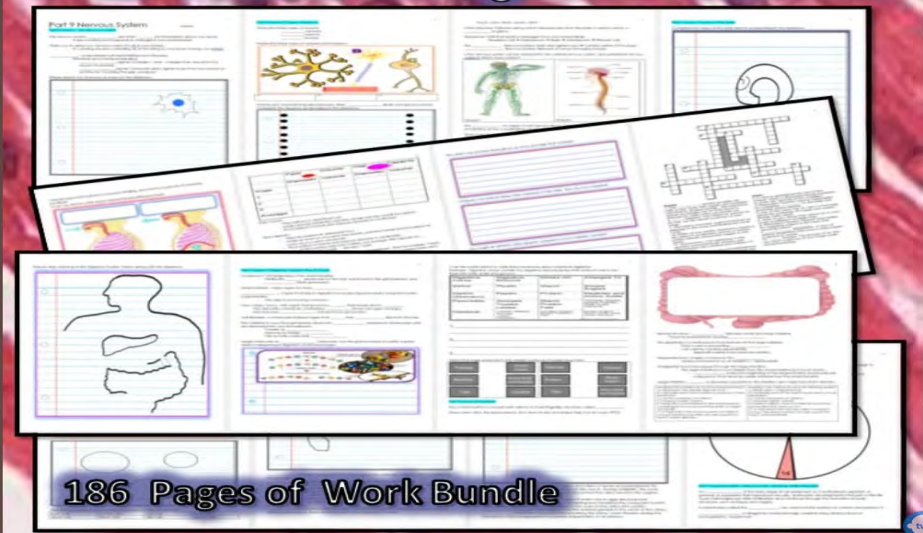
Interactive Slideshows



Assessments, Video Links, Keys, Games, and more all built-in

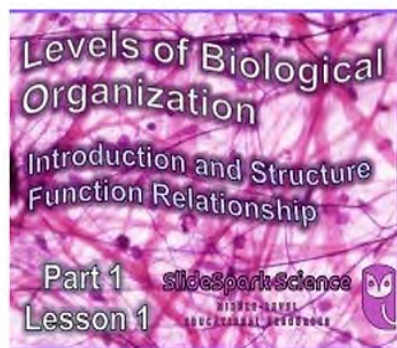


With Follow Along Work Bundles

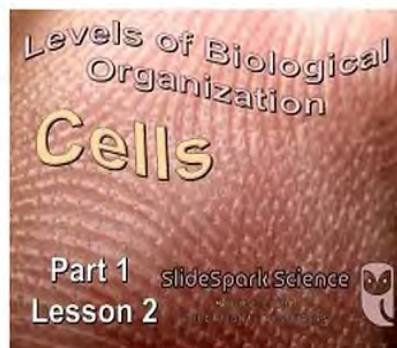


Human Body Systems Unit Part 1 Download : 5 Lessons of 50 Minutes and 11 Page Follow Along Work Bundle, For fun Quiz to see if student can name some Human Organs, Answers to the Quiz, Description of Anatomy, Introduction to Concept Form Follows Function, Describe how a classroom tool demonstrates Form Follow Function Activity, Description of Physiology, History of Anatomy, Body Part Name Game, Levels of Biological Organization, Cellular Organelle, Cell, Tissue, Organ, Organ System, Individual, Looking at Cheek and Onion Cells Under the Microscope, Differences between Plant and Animal Cells, Multi-cellular vs. Unicellular, Cells as the Unit of Structure of Function, Different Types of Cells in the Human Body, Tissues in the Human Body, Identifying Some Common Organs in the Human Body Visual Diagram, Organ Systems in the Human Body, Visual Quiz that Names a Level of Biological Organization, Answers to Quiz, Homeostasis, Homeostasis Activity with Pulse and Stand in Place Exercise, Box Game Review, Crossword Puzzle, End Unit Assessment

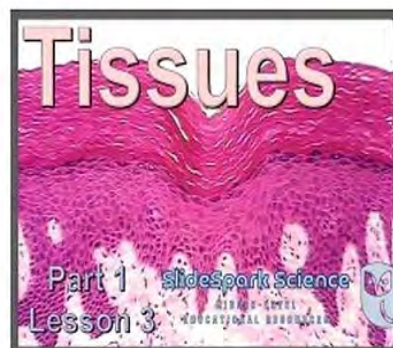
Part 1: Levels of Biological Organization



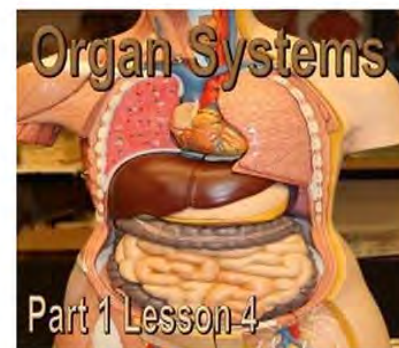
Part 1 Lesson 1 Intro Structure Function



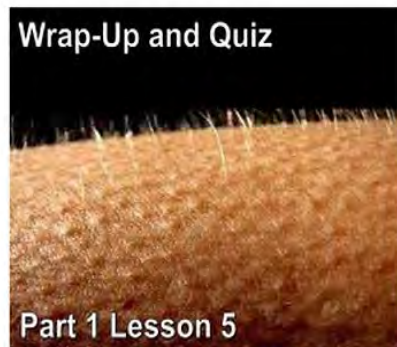
Part 1 Lesson 2 Levels and Cells



Part 1 Lesson 3 Cells and Tissues



Part 1 Lesson 4 Organ Homeostasis



Part 1 Lesson 5 Wrap Up Quiz



Part 1 Lesson 6 Quiz Answers

Part 1 Levels of Biological Organization Name: _____

Part 1 Review:

Working in small groups, Name the Organ of the human body and the system it belongs to if you know it. Let's see what you already know. (For fun)

1) LIVER	2) STOMACH	3) BLOOD VESSELS	4) BRAIN
5) HEART	6) PANCREAS	7) KIDNEY	8) LUNGS
9) BLADDER	10) SPLEEN	11) GALL BLADDER	12) RECTUM
13) NADDERA	14) ESOPHAGUS	15) TESTICLE	16) EAR
17) THYROID	18) UTERUS	19) ADRENAL	20) TONGUE

Source: www.kids-science.com

Anatomy: the science of the **shape** and **structure** of organisms.

(III) **Form Follows Function:** Parts of the body are shaped to perform a particular job.

- Students will pick an object with eyes closed.
- Make a quick sketch below.

Form Follows Function

A paper clip hold sheets of paper together, usually made of steel wire bent to a looped shape. The paperclip utilizes torsion and elasticity in the wire, and friction between wire and paper to hold paper together. A simple bending of wire creates a nice place to slide and hold paper. A simple example of Form Follows Function

Part 1 Work Bundle Print Answers

Part 1 Levels of Biological Organization Name: _____

Part 1 Review:

Working in small groups, Name the Organ of the human body and the system it belongs to if you know it. Let's see what you already know. (For fun)

1)	2)	3)	4)
5)	6)	7)	8)
9)	10)	11)	12)
13)	14)	15)	16)
17)	18)	19)	20)

Source: www.kids-science.com

Anatomy: the science of the _____ and _____ of organisms.

(III) _____ Parts of the body are shaped to perform a particular job.

- Students will pick an object with eyes closed.
- Make a quick sketch below.

Part 1 Work Bundle Print

Part 2: Skeletal System : 7 Lessons 50 Minutes and 13 Page Follow Along Work Bundle, Bones and Living, Types of Bone Cells, Periosteum, # of Bones in the Human Body Guessing, Cartilage, Functions of the Skeletal System, Skeletal System and Form Follows Function, Name that Animal based only on its Skeleton Challenge, Bones Protect Vital Organs, Role of the Skull, Traumatic Brain Injury, The Effects of Traumatic Brain Injury, Importance of Seatbelts Crash Test Video, Danger of Repeated Concussions, Chronic Traumatic Encephalopathy, NPR interview with former NFL Player about the dangers of repeated Head Trauma Worksheet, Bones role in Blood Production, Spongy Marrow, Compact Marrow, Red Marrow, Yellow Marrow, Axial Skeleton, Appendicular Skeleton, Groups of Bones, Long Bones, Flat Bones, Short Bones, Irregular Bones, Name that type of Bone Challenge with Visuals, Osteoporosis, Bones and Connective Tissues, Tendons, Ligaments, Tendon or Ligament Visual Quiz with Answers, Building a Working Arm to learn bones, Ligaments, and Tendons, Build a Human with Pile of Bones Puzzle Challenge, Labeling Some common Bones in the Human Body, Bones of the Human Body Visual Quiz with Answers, How the Skeletal Systems Form Follow Function, Types of Joints, Fibrous Joints, Cartilaginous Joints, Synovial Joints, Six Types of Human Joints, Ball and Socket Joint, Ellipsoid Joint, Pivot Joint, Saddle Joint, Gliding Joint, Hinge Joint, Building a Biomechanical Hand Activity, Bones and Ligaments of the Hand, Matching the Joint Review, Common Injuries, Dislocations, Fractures, Sprains, Matching the Sports Injury Visual Activity, Learning Price, Pressure, Rest, Ice, Compress, Elevate, Box Game Review, Crossword Puzzle, End Unit Assessment



Part 2 Lesson 1 Skeletal System Intro



Part 2 Lesson 2 Brain Injury



Part 2 Lesson 3 Bones Tendon Ligament



Part 2 Lesson 4 Human Bones



Part 2 Lesson 5 Skeletal Joints



Part 2 Lesson 6 Biomechanical Hand



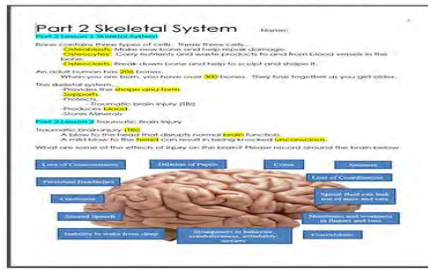
Part 2 Lesson 6 Review Injuries



Part 2 Lesson 7 Review Game



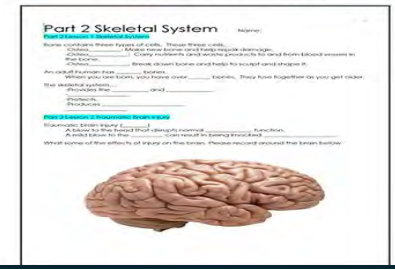
Part 2 Lesson 8 Review Game Answers



Part 2 Work Bundle Answers



Part 2 Work Bundle Print with Notes

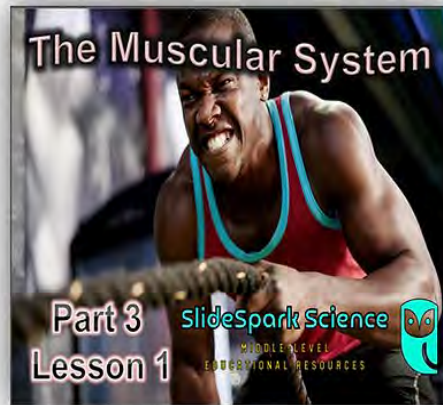


Part 2 Work Bundle Print

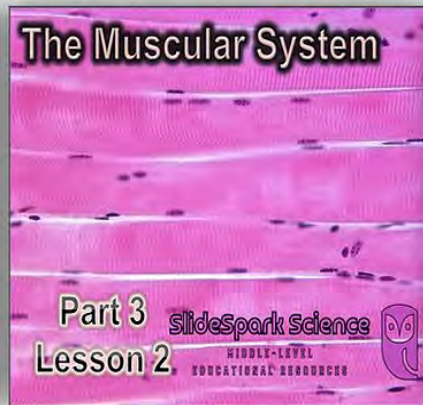
Part 2: Skeletal System

Part 3: Muscular System: 4 Lessons of 50 Minutes and 10 Page Work Bundle, # of Muscles in the Human Body, How blood vessels are woven into muscles and why, Stimulation of Action Potential, Coordinated Shortening, Types of Muscles, Smooth Muscle, Cardiac Muscle, Skeletal Muscle, Functions of the Muscular System, Posture, Good and Bad Posture, Phone Use and Posture, Review of the Functions with Visuals, Voluntary and Involuntary Muscles, Pupil Dilation Activity, Sarcomere and How they Work, Muscle Fibers, Examples with bicep and triceps, Smooth Muscles, Peristalsis Activity, Common Muscles of the Human Body with Visuals, and animated .gifs, Students stand, sit, and make movements as each common muscle is described, Review of the Common Muscles of the Human Body, Visual Quiz of the Muscles, Box Game Review, Crossword Puzzle, Chicken Leg Dissections with Visuals and Step by Step Instructions, Dissection includes Flexion and Extension, Major Muscles, Alula, Bones, Fascia, Ligaments, Cartilage, of a Chicken Leg, Visual Review Wrap-Up of Chicken Leg, Full Unit Assessment, Answer Version to the Assessment so Student can Self Assess.

Part 3: Muscular System



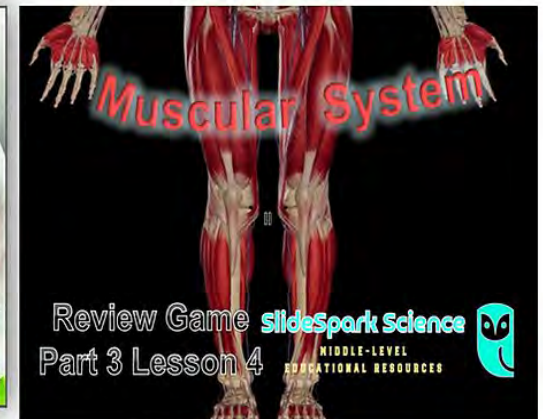
Part 3 Lesson 1 Types of Muscles



Part 3 Lesson 2 Muscles Human Body



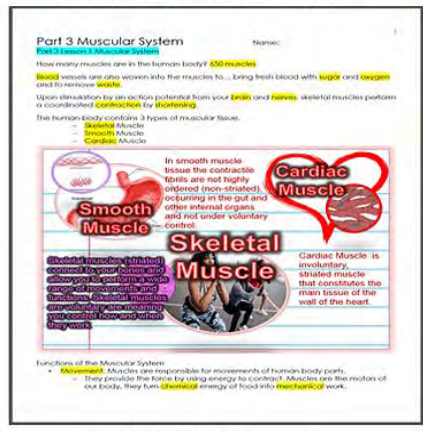
Part 3 Lesson 3 Chicken Leg Dissection



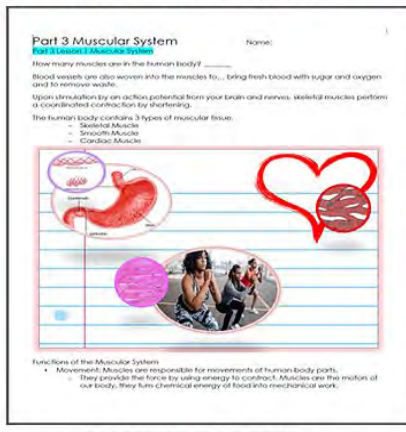
Part 3 Lesson 4 Review Game



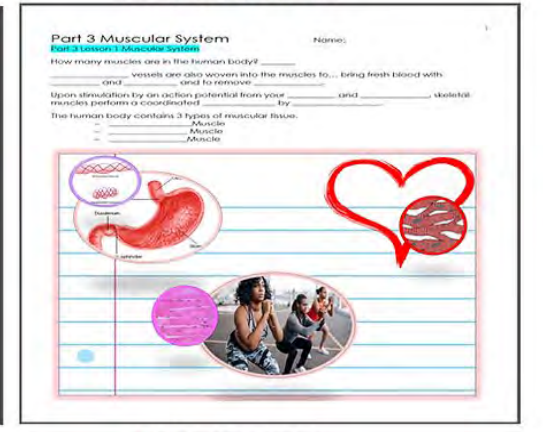
Part 3 Lesson 5 Review Game Answers



Part 3 Work Bundle Answers



Part 3 Work Bundle Print Notes



Part 3 Work Bundle Print

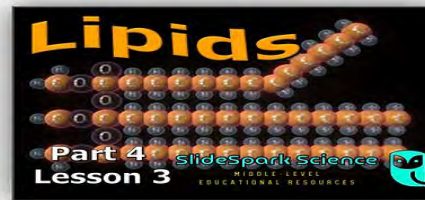
Part 4: Health and Nutrition: 12 Lessons of about 50 minutes and 25 Page Follow Along Work Bundle, CHNOPS/SPONCH biologically important elements, Carbon and Organ Chemistry, % of SPONCH Elements in Living Things, Graphing this %, CaFé, Calcium, Iron, Organic Building Blocks, Carbohydrates, Lipids, Proteins, Nucleic Acids, Carbohydrates, Monosaccharide, Disaccharide, Polysaccharide, Sugars associated with each, Activity with Saltines and Iodine, Advantages and Disadvantages of Simple and Complex Sugars, Glycogen, Fiber, Soluble and Insoluble Fiber, Understanding Nutrition Labels, Protein, Amino Acids, Foods High in Protein, Four Important Functions of Proteins, Hormones, Lipids, Structure and Function of Lipids, Coronary Artery Disease Demonstration, Hormones, Some examples of common Hormones, Steroids, Anabolic Steroids, Some Dangers Associated with to use of Anabolic Steroids, Types of Fat, Unsaturated Fat, Saturated Fats, Trans fatty Acid, Structure of these Fats, Healthy and Unhealthy Fats, Nutrition Label and Fats, Visual Quiz of Carbohydrates, Lipids, and Proteins, Answers to Quiz so Students can Self-Assess, Box Game Review, MyPlate, Making a Meal Activity, Examples of Healthy Eating vs. Unhealthy Meal Choices, Processed and Unprocessed Foods, Jell-O and Pineapple Juice Optional Activity, Twinkie Dissection, Students get a Twinkie and then learn about all of the Ingredients inside, Deciding or Not to eat the Twinkie, Obesity, Diabetes, Dangers Associated with Obesity, Factors that can control Obesity, Why Fast Food Sells, Visual Quiz of Famous People in History vs. Food Mascots, Box Game Review, Ways to Get Control of your Weight, Healthy Eating, Factory Farming, Positives and Negatives of Factory Farming, Eating Disorders, Anorexia, Some Dangers Associated with Anorexia, Bulimia nervosa, How to be Supportive, Crossword Puzzle, Full Unit Assessment with Answers so Students can Self-Assess



Part 4 Lesson 1 SPONCH molecules



Part 4 Lesson 2 Carbs Proteins



Part 4 Lesson 3 Lipids Steroids



Part 4 Lesson 4 Types of Fat



Part 4 Lesson 5 Quiz and Review



Part 4 Lesson 6 Twinkie Lesson



Part 4 Lesson 7 Fast Food Obesity



Part 4 Lesson 8 Eating Healthy



Part 4 Lesson 9 Factory Farms



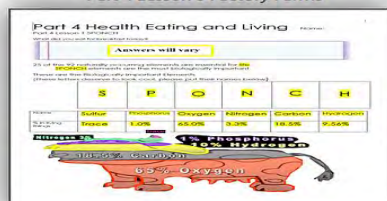
Part 4 Lesson 10 Eating Disorders



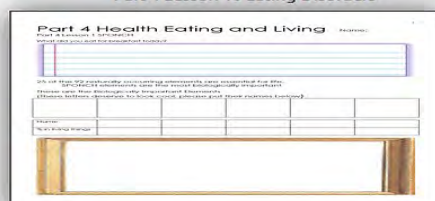
Part 4 Lesson 11 Review Game



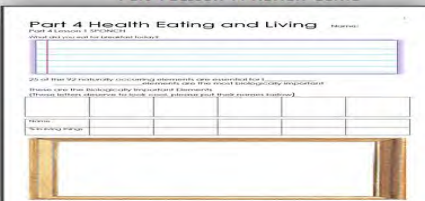
Part 4 Lesson 12 Review Game Answers



Part 4 Work Bundle Answers



Part 4 Work Bundle Print with Notes

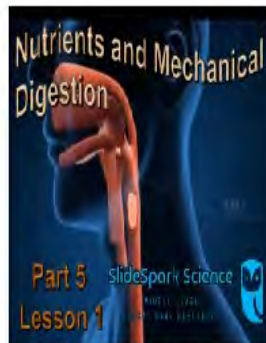


Part 4 Work Bundle Print

Part 4: Health and Nutrition

Part 5: Digestive System: 8 Lessons of 50 minutes, and 15 Page Follow Along Work Bundle, Review of Nutrients, Digestion, Saliva, Ptyalin, Chemical Digestion, Chewing Bread Activity, Mechanical Digestion, Synergism between Chemical and Mechanical Digestion, Taste Buds, Tasting Activity, Dentition, Dentition Imprint Activity, Swallowing, Bolus, Making a Bolus Activity, Safe Swallowing / Chewing, Pharynx, Epiglottis, Esophagus, Peristalsis, Stomach, Pyloric Valve, Step by Step Drawing of the Digestive System, Gastrointestinal Tract, Garden Hose Demo, Duodenum, Small Intestine, Surface Area and Digestion Demo, Pancreas, Pancreatic Juices, Enzymes, Liver, Gall Bladder, Vital Roles of the Liver, How Food gets Broken Down, Foods Macronutrients, Digestion Tic Tac Toe Review, Small Intestine, Villi, Villi and Surface Area, Ileocecal valve / sphincter, Appendix, Appendectomy, Cecum, Large Intestine, Visual Review of Organs, Digestive System Simulation, Students become and organ along the Digestive System and Digest Food (cereal in bags) by mechanical and chemical means, Visual Review, Box Games Review, Full Unit Assessment with Answer Version for Self-Assessment

Part 5: Digestive System



Part 5 Lesson 1 Nutrients Chew



Part 5 Lesson 2 Digestion



Part 5 Lesson 3 Digestive Organs



Part 5 Lesson 4 Intestines



Part 5 Lesson 5 Simulation Wrap Up



Part 5 Lesson 6 Review Game



Part 5 Lesson 7 Review Game Answers



Part 5 Work Bundle Answers



Part 5 Work Bundle Print with Notes



Part 5 Work Bundle Print

Part 6: Circulatory System: 8 Lessons of 50 minutes and 15 Page Follow Along Work Bundle, Circulatory System, What Goes In, What Goes Out, What System is Comprised Of, Heart, Blood, Blood Vessels, Cellular Respiration, Respiration Equation, Parts of Cellular Respiration, Functions of the Circulatory System, Movement of Blood through the System, Circulatory System Simulation – The class is turned into a basic heart and students move through the system collecting oxygen in lungs and exchanging them for carbon dioxide in the body, Step by Step Drawing of the Heart, Naming the Parts of the Heart, Parts of a Heart Visual Quiz, Answers to the Visual Quiz, Blood Pressure, Hypertension, CPR, An automated external defibrillator (AED), Varicose veins, Alveoli, Gas Exchange, Smoking and Gas Exchange, Blood, Types of Blood Cells with Info, Blood Soup Activity where students make edible Soup with fun ingredients to represent the components of Blood, Red Blood Cells, White Blood Cells, Platelets, Plasma, % of Each, Blood Transfusions, Antigens, Antibodies, Blood Groups, Rh Factors, Safe and Unsafe Transfusions, Lymphatic System, Organs of the Lymphatic System, Lymph, Lymph Nodes, Lymph Vessels, Box Game Review, Crossword Puzzle, Full Unit Assessment with Answers so Students can Self-Assess

Part 6: Circulatory System



Part 6 Lesson 1 Circulatory Intro



Part 6 Lesson 2 Heart



Part 6 Lesson 3 Arteries Veins



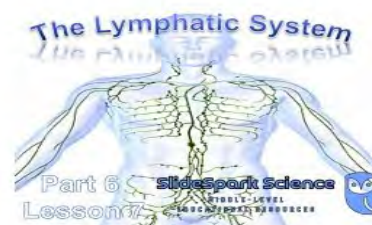
Part 6 Lesson 4 Review Quiz



Part 6 Lesson 5 Blood Cells



Part 6 Lesson 6 Blood Types



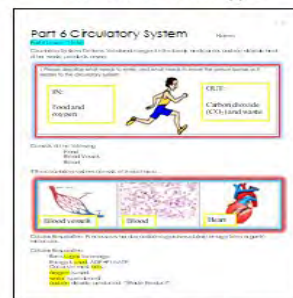
Part 6 Lesson 7 Lymphatic System



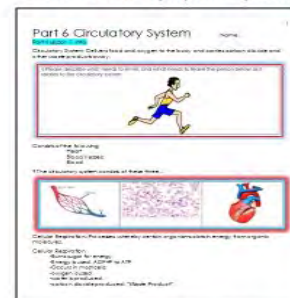
Part 6 Lesson 8 Review Game



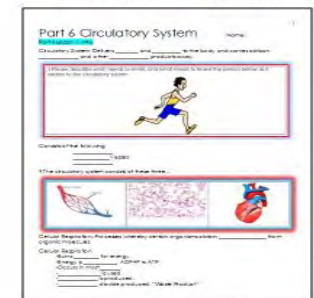
Part 6 Lesson 9 Review Game Answers



Part 6 Work Bundle Answers



Part 6 Work Bundle Print with notes



Part 6 Work Bundle Print

Respiratory System Part 7: 14 Lessons of 50 minutes and 20 Page Follow Along Work Bundle, Respiratory System Basics, Oxygen, Aerobic and Anaerobic Respiration, Functions of the Nose, Step by Step Drawing of the Respiratory System, Exhale, Inhale, Epiglottis, Larynx, Vocal Chords, Sound Production, Trachea, Structure Function, Bronchus, Lungs, Alveoli, Asthma, Diaphragm, Build a Diaphragm Activity, Visual Quiz of the Respiratory System, Answers so Students can Self Assess, Tidal Volume, Vital Capacity, Lab Activity with Breathing and Balloons, Box Game Review, Crossword Puzzle, End Unit Assessment, Answer Version of Assessment so Students can Self Assess, Part 2 of the Unit examines the Dangers Associated with Tobacco Use, What is Cancer?, Lifestyle Choices to help aid in the prevention of Cancer, Skin Cancer, Dangers of Skin Cancer, Ways to avoid UV Exposure, Dangers of Tanning, Abcde's of Understanding Skin Moles and Cancer, Dangers of Smoking, Starting Anti-Tobacco Campaign Project, Dissection of a Typical US Blended Cigarette, Case Study on the Filter and how they don't work, Facts about Smoking, Start of Ad Campaign Portion of Unit, Students watch Anti-tobacco ads and reflect on their usefulness, Visual Tour of some harmful chemical in cigarettes, Full Ingredient List, Nitrosamines, How Chemicals Impact DNA, Visual Tour of the Negative Health Impacts Smoking Can Cause, Stroke, Heart Disease, Smokers Lung vs Non-Smoker, Coating of Alveoli in Tar, Neck Breathers, laryngectomy Laryngectomy, tracheostomy, Emphysema, Chronic Bronchitis, Danger of Second Hand Smoke, Berger's Disease, Hairy Tongue / lingua villosa, Tour of the nastiest hairy tongues out there, Dangers of Smokeless Tobacco, Mouth and Throat Cancer, Dangers of Smoking while Pregnant, Comparing Twins Study, Vaping, Dangers of Vaping, Popcorn Lung, Wet Lung, A lot Still Unknown, Case Study on JUUL, Nicotine Levels in Vaping / e-juices, Nicotine and the Adolescent Brain, Anti-Tobacco Campaign Projects, Box Game Review, Crossword Puzzle, End Unit Assessment



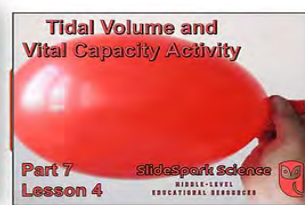
Part 7 Lesson 1 Respiratory System



Part 7 Lesson 2 Organs of Respiratory



Part 7 Lesson 3 Lungs Diaphragm



Part 7 Lesson 4 Lung Capacity Activity



Part 7 Lesson 5 Review Game



Part 7 Lesson 6 Review Game Answers



Part 7 Lesson 7 Cancer and Skin Cancer



Part 7 Lesson 8 Smoking and Cancer



Part 7 Lesson 9 Smoking Cont I



Part 7 Lesson 10 Smoking Cont II



Part 7 Lesson 11 Smoking Cont III (1)



Part 7 Lesson 12 Vaping Dangers



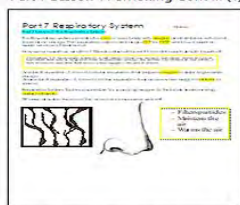
Part 7 Lesson 13 Campaign and Wrap Up



Part 7 Lesson 14 Review Game



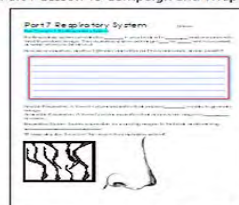
Part 7 Lesson 15 Review Game Answers



Part 7 Work Bundle Answers



Part 7 Work Bundle Print with Notes

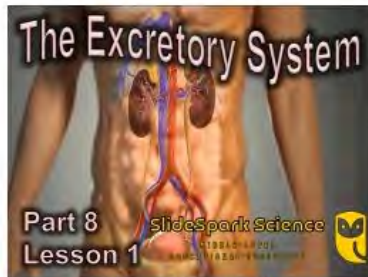


Part 7 Work Bundle Print

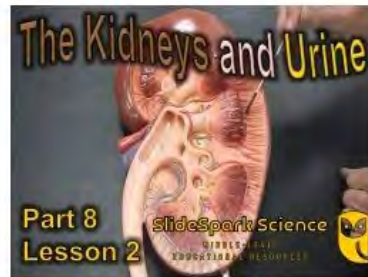
Part 7: Respiratory System

Excretory and Integumentary Systems Part 8 4 Lessons of 50 Minutes and 9 Page Follow Along Work Bundle, Removal of Waste, Kidneys, Nephron, Diagram of Nephron, Parts of a Nephron and Function, Homeostasis, Urine, Urine Color, Ureters, Bladder, Urethra, Liver, Gall Bladder, Bile, Cirrhosis of the Liver, Integumentary System, Skin, Parts of the Skin, Finger Prints, Finger Print Activity, Hair, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 8: Excretory System, Integumentary System



Part 8 Lesson 1 Excretory System



Part 8 Lesson 2 Urine Kidneys



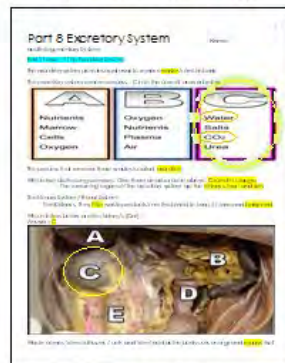
Part 8 Lesson 3 Integumentary Systems



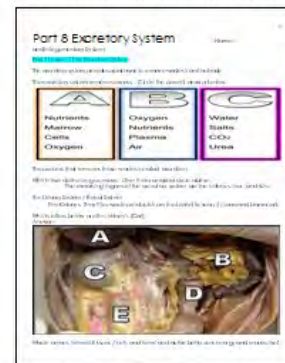
Part 8 Lesson 4 Review Quiz 10Q



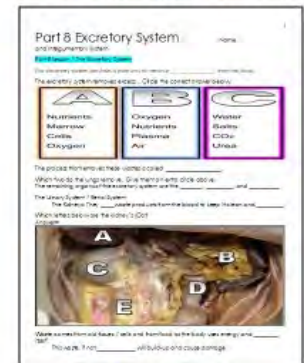
Part 8 Lesson 5 Quiz Answers 10Q



Part 8 Work Bundle Answers



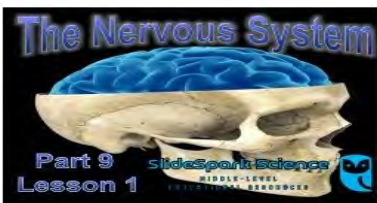
Part 8 Work Bundle Print with notes



Part 8 Work Bundle Print

Nervous System Part 9 Nervous System, Stimulus Activity, Neuron, Electrical and Chemical Signals, Step by Step Drawing of a Neuron, Build a Neuron Activity, Neuron Class Simulation / Sending a Signal from Neuron to Neuron, Types of Neurons, Interneuron, Sensory Neurons, Motor Neurons, Action Potential, Receptors, Central Nervous System, Peripheral Nervous System, The Brain, Cerebrospinal fluid (CSF), CSF and Egg Demo, Build a Brain Activity, Step by Step Drawing of a Brain, Spinal Column, Spinal Cord Injury, Parts of a Brain, Lobes of the Brain, Functions of the Brain, Step by Step Drawing of an Eye, Parts of the Eye, Lens, Near and Far Sightedness, Cataracts, Glaucoma, Rod and Cones, Night Vision Activity, Parts of the Eye Visual Review, Observation, Inferences, Optical Illusions, Smell, Smell Activity, Dangers of Inhalant Abuse, The Science of Hearing, Step by Step Drawing of the Ear, Parts of the Ear, Noise Induced Hearing Loss, Listening Trial Study Activity, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 9: The Nervous System



Part 9 Lesson 1 Nervous System



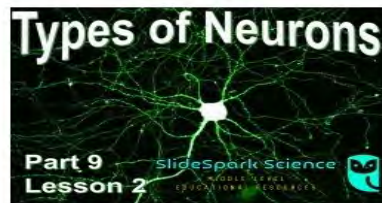
Part 9 Lesson 5 Eye Parts Review



Part 9 Lesson 9 Hearing



Part 9 Lesson 13 Review Game Answers



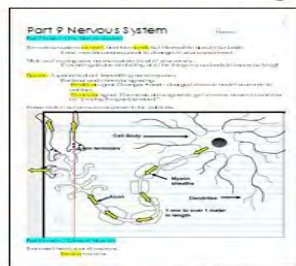
Part 9 Lesson 2 Types of Neurons



Part 9 Lesson 6 Observation Basics



Part 9 Lesson 10 Times Have Changed



Part 9 Work Bundle Answers



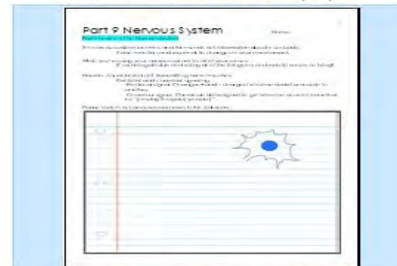
Part 9 Lesson 3 Brain



Part 9 Lesson 7 Observation Cont



Part 9 Lesson 11 Touch Wrap Up



Part 9 Work Bundle Print with Notes



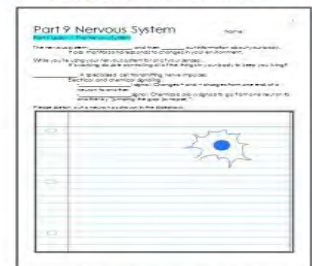
Part 9 Lesson 4 The Eye



Part 9 Lesson 8 Smell



Part 9 Lesson 12 Review Game



Part 9 Work Bundle Print

Endocrine and Reproductive Systems Part 10 11 Lessons of 50 minutes and 19 Page Follow Along Work Bundle, The Endocrine System, Endocrine and Nervous System Working Together, Venn Diagram of Each, Glands of the Endocrine System, Location of Glands of the Endocrine System, Hormones, Exocrine Glands, Endocrine Glands, Activities in the Body, Adrenaline, Adrenaline Roller Coaster Activity, Dopamine, Dangers of Methamphetamine, Important Hormones, Exocrine Glands, Hypothalamus, Pituitary Gland, Metabolism, Thymus, Thyroid, Adrenals, Pancreas, Diabetes, Ovaries, Testes, Reading Article about Puberty, Body Stability and Counterbalance Hormone, Testosterone, Estrogen, Box Game Review, The Reproductive System, Sugar Baby Project, Functions of the Reproductive System, Male and Female Gametes, Step by Step Drawing of the Gametes, Fertilization, Haploid, Diploid, Step by Step Drawing of the Male and Female Reproductive Systems with Important Vocabulary, Review with Visuals, Puzzle Activity, Menstrual Cycle, Ovarian Cycle, Events of the Menstrual Cycle, Embryo, Embryonic Development, Amniotic Sac, Sonogram, Placenta, Caesarean Section, Dangers of Smoking and Drinking while Pregnant, Fetal Alcohol Syndrome, Box Game Review, Crossword Puzzle, Life's Greatest Miracle Movie Sheet, End Unit Assessment with Answer Version for Self Assessment



Additional and Printables



Part 10 Lesson 1 Endocrine System



Part 10 Lesson 2 Puberty



Part 10 Lesson 3 Endocrine Wrap Up



Part 10 Lesson 4 Reproductive System



Part 10 Lesson 5 Male Reproductive



Part 10 Lesson 6 Female Reproductive



Part 10 Lesson 7 Menstrual Cycle



Part 10 Lesson 8 Embryo



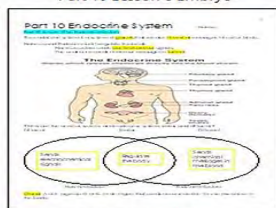
Part 10 Lesson 9 Miracle and Wrap Up



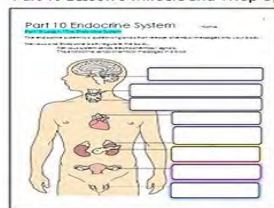
Part 10 Lesson 10 Review Game



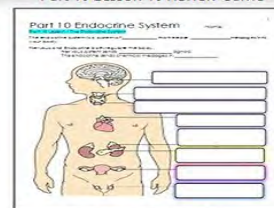
Part 10 Lesson 11 Review Game Answers



Part 10 Work Bundle Answers



Part 10 Work Bundle Print with Notes



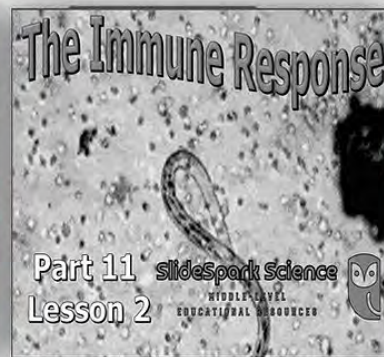
Part 10 Work Bundle Print

Part 10: Endocrine and Human Reproductive Systems

[Immune System Part 11](#) 4 Lessons of 50 minutes, 10 Page Follow Along Work Bundle, Joesph Lister, Parts of the Immune System and their Locations, Agents that the Immune System Defends Against, Importance of the Skin as a Barrier, The Nose and Mucous, Saliva, Friend from Foe Achievement, Inflammatory Response, Bee Stings, Step by Step Drawing of the Immune System, Leukocytes, Phagocytes, Lymphocytes, B Cells, T Cells, Dendritic Cells, Antibodies, Immunity, Influenza Case Study, Active and Passive Immunity, Vaccines, Virus Prevention, Box Game Review, Crossword Puzzle, Full Unit Assessment with Answer Versions for Self Assessment



Part 11 Lesson 1 Immune System



Part 11 Lesson 2 Immune Response



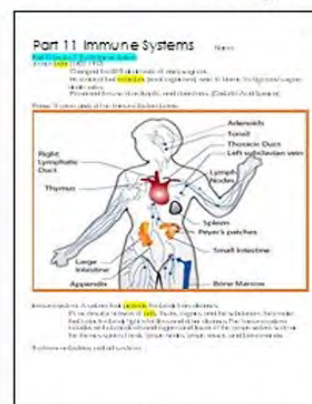
Part 11 Lesson 3 Inside Look Flu Vaccines



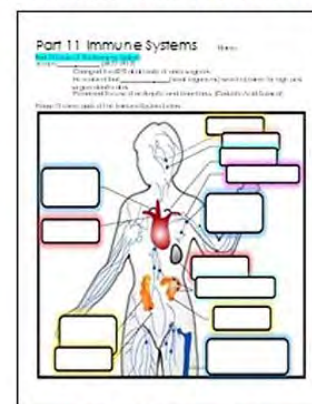
Part 11 Lesson 4 Review Game



Part 11 Lesson 5 Review Game Answers



Part 11 Work Bundle Answers



Part 11 Work Bundle Print

Part 11: The
Immune
System

Curriculum Guide

Number of Lessons in each unit (50 min, daily lessons) and difficult rating scale / intended grade level.

 =Easier,

 = More difficult,

 =Most difficult

Earth Science Units	Daily Lessons	Intended Grade	
Geology Topics Unit	60 Lessons	6-8 medium difficulty	
Weather and Climate Unit	40 Lessons	6-8 medium difficulty	
Astronomy Unit	60 Lessons	6-8 medium difficulty	
Weathering, Soil Sciences	28 Lessons	5-7 easier	
Rivers and Water Quality	25 Lessons	5-7 easier	
Water Molecule Unit	20 Lessons	5-7 easier	

Life Science Units

Life Science Units	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	
Ecology Interactions Unit	30 Lessons	5-6 easier	
Ecology Abiotic Factors Unit	24 Lessons	5-6 easier	
Botany Unit	50 Lessons	5-7 easier	
Evolution and Natural Selection	40 Lessons	5-7 easier	
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	
Infectious Diseases Unit	30 Lessons	7-9 more difficult	
DNA and Genetics Unit	42 Lessons	8-10 most difficult	
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	
Cell Biology Unit	30 Lessons	8-10 most difficult	

Physical Science

	Daily Lessons	Intended Grade	
Laws of Motion and Machines Unit	33 Lessons	8-10 most difficult	
Matter Energy and the Environment	58 Lessons	7-10 medium difficulty	
Atoms and Periodic Table Unit	44 Lessons	8-10 most difficult	
Science Skills Unit	30 Lessons	5-7 medium difficulty	

[Physical Science Curriculum](#)

[Entire SlideSpark Science Curriculum](#)



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Sincerely,

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