♩ ♪ The head bone’s connected to the... neck bone.
    The neck bone’s connected to the... shoulder bone.
    The shoulder bone’s connected to the... back bone.
    The back bone’s connected to the... hip bone. ♩ ♪

This part of a song, written in the 1930's by a man named James Johnson, refers to a story where some bones became whole bodies again. Since the 30's, it has been used to teach young children the basics of the human body. It's far from scientific, but it does cover the general idea of the skeleton.

♫ Can you think of other songs that young children learn? ♫

All the bones inside of us make up our skeleton. This is what makes us able to stand up and move around. The human body is made up of many bones. A baby has about 300 bones when they are born. Their bones are made of cartilage (CAR til ij,) which is soft and flexible. Slowly, with the help of calcium, the cartilage is replaced by bone, and some of them grow together. (That's why it's important to get lots of calcium while you are growing by getting in the right amount of dairy products.) This process stops when you are about 25 years old. An adult human body has 206 bones!

The spine is one of the most important bones in your body. It runs down the center of your back. It's actually 26 smaller bones joined together that allow you to twist and bend. It also protects
the **spinal cord**, a large bunch of nerves that sends information to and from your brain.

You should always protect your bones with helmets and pads when you are out riding a bike, skating, or playing a sport. Getting exercise is another way to strengthen your bones. If you're good to your body you will be healthy all your life!

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**Words to know**

- **skeleton**: all the bones that make up the human body
- **bones**: organs that help support the body
- **spinal cord**: a large bunch of nerves protected by your spine that sends information to your brain
- **cartilage**: soft material inside a baby's bones
- **calcium**: a mineral that helps bone growth
Test your knowledge! Use what you have learned to answer the questions below.

How can these things help your bones?

By the numbers:
Based on the information above, put the correct number in the blank.

_____  The number of bones in the adult human body
_____  The number of bones in a baby human body
_____  The number of bones that grow together over time
_____  The number of years it takes for bones to stop growing
_____  The number of bones that make up the spine
Test your knowledge! Use what you have learned to answer the questions below.

How can these things help your bones?

- protects the skull
- protects the body
- strengthens bones

By the numbers:
Based on the information above, put the correct number in the blank.

206  The number of bones in the adult human body

300  The number of bones in a baby human body

94   The number of bones that grow together over time

25   The number of years it takes for bones to stop growing

26   The number of bones that make up the spine
Educator Notes

Activity: Learn your bones!

Put the names of some the major bones in alphabetical order.

___________________________
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**Human Body: Muscular System - Life Science**

During a science lesson about balanced forces, Mr. Chang, the science teacher, asked his students to find a partner to arm wrestle! This was a fun lesson! Maria looked around for a partner to **challenge**.

“Okay, show me your **muscles**!” she said.

Julio and Andrea both made a fist which caused their **biceps** to raise.

“Hmm...” said Maria, “they look about the same to me.”

“I guess you’ll only know if you test us both!” laughed Julio.

“Okay,” agreed Maria, “but you’re first. That way I won’t be tired already.” 😊 Could you beat someone in arm wrestling? 😊

Our muscles connect to the bones in our body. You have more than 600 muscles in your body! They help your body pump blood, bend, lift things, and move. Some of your muscles work with your help, but others, like the heart, do their jobs on their own. These muscles that don’t need you to think about them are called **involuntary muscles**. While you’ve been reading, how many times did you blink? Don’t know? That’s because blinking involves involuntary muscles! Your heart, stomach muscles, and tiny muscles in your blood vessels all work on their own. Phew!

So how do muscles connect to bones? **Tendons** connect them together. They make your body move by pulling up on the bone. Muscles can’t push, though; they can only pull. So you need two of each: one to pull up and one to pull back down. Get it? Your muscles come in pairs.

---

**Words to know**
- **muscles**: the parts of our body that help us move
- **challenge**: to ask someone to a contest
- **involuntary muscles**: muscles that your body uses without you having to think about it
- **tendons**: connect muscles to bones

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******** Call School Supplement at 1-877-677-8775 or visit www.schoolsupplement.com for the Math and Science enrichment program and give your child the competitive edge********
Test your knowledge! Use what you have learned to answer the questions below.

Draw a line to and label these muscles in the figure below:

1. deltoids (DEL toydz) -- in your shoulders
2. pectorals (pek TOR uhlz) -- in your upper chest
3. abdominals (ab DOM in uhlz) -- across your abdomen (stomach)
4. biceps (BI seps) -- in your upper arms
5. quadriceps (KWAD ruh seps) -- in your upper legs
A 3-Layered Approach to Learning Science

School Supplement uses an innovative 3-layered approach to learning Science that engages the student attention and sparks their interest in a variety of different topics on Earth & Space Science, Physical Science, Life Science, Science & Technology and Science & Society.

Each topic is covered in 3 layers –
- Reading Material
- Quiz – Test and Extend your knowledge
- Experiment/Activity

**Reading Material**
A high interest, easy readability article that introduces the objective with an engaging fiction or non-fiction passage. This study material is fun to read!

**Quiz**
"Test Your Knowledge" section with short and long question types.

**Activity/Experiment**
An experiment or activity relevant to each objective. These use a student-centered approach to learning by allowing the student to conduct a hands-on activity.
Samples of Reading Material – Grade 3

Inherited Traits – Life Science (WS#3542)

At the Foster family reunion, Ellen was excited about meeting all the cousins and family members she hadn’t seen in several months. Her aunt met her as they got out of the car. “Why, Ellen!” she exclaimed. “You look more and more like your mother the older you get!” Ellen’s face turned bright red, but she smiled and gave her aunt a hug anyway. “Thanks, Aunt Alice!”

Diana, her cousin, came up to her laughing after Aunt Alice left.

“Well,” Diana said, “who else would you look like? Your dad?”

Ellen giggled. “I’d sure be a funny-looking girl!”

Both cousins laughed until their cheeks hurt, then ran off to find their seats at the table.

Light creates shadows – Physical Science (WS#3544)

Have you ever heard of the story of Peter Pan? The author, J.M. Barrie, wrote the book about a boy who just doesn’t want to grow up. He lives in a made-up place called Neverland and flies one night to the window of a girl telling bedtime stories. As he is leaving, he loses his shadow.

The girl, named Wendy, helps him find his shadow and sees it back on to the bottoms of his feet. Isn’t that funny? We can’t really “lose” our shadows... But they do go away sometimes. So, what is a shadow? How does it appear?

○ If you look around you, can you see a shadow anywhere? ○

Light travels in a straight line until it is reflected, absorbed or blocked. If an object reflects the light, we can see that object. The color of the object depends on what colors it absorbs. Lights have lots of different colors in it, even though it looks white to us.

(remember ROYGBIV) If the object absorbs some of those.

Human Body: Nervous System – Life Science (WS#3526)

Pamela was making some macaroni and cheese for herself after school one day. Then the phone rang. She left the stirring spoon in the pot while she answered the phone. When she returned, she reached for the spoon to stir the pasta. As soon as her hand curled around the spoon, she immediately let go.

“Ouch!” she cried, moving to the sink to stick her hand in some...

The Sun – Earth & Space Science (WS#3527)

After a few hours at the beach that morning, Dad called the boys back in from the water’s edge.

“Let’s go grab a bite to eat during the hottest part of the day. Are you hungry?” Brandon and Erik nodded quickly.

“Well, let’s go. The Sun is really hot!” Brandon agreed, “I saw a family earlier and everyone had a sunburn.”

“Yeah, I guess they forgot the most important part of a vacation to the beach...” Dad said.

“Sunblock!” the boys said together.

So how do muscles connect to bones? Tendons connect them together. They make your body move by pulling up on the bone. Muscles can’t push, though; they can only pull. So you need two of each: one to pull up and one to pull back down. Get it? Your muscles come in pairs.

Words to know

- muscles: the parts of our body that help us move
- challenge: to ask someone to a contest
- involuntary muscles: muscles that your body uses without you having to think about it
- tendons: connect muscles to bones

Each reading material Worksheet comes with a list of “Words to Know” or scientific terms explanation that is easy for a child to understand.

Samples of Quiz – Grade 3

Human Body: Digestive System – Life Science (WS#3519)

Section #2 - Quiz

Name: ___________________________ Date: ___________________________

Test your knowledge! Use what you have learned to answer the questions below.

Number the events of the digestive system in the order they happen.

1. Water and nutrients are removed by the intestines.

2. Your teeth mash the food, helping it to mix with saliva.

3. The unused food is stored in the rectum until leaving the body.

Animals are grouped by what they eat – Animal Diet – Life Science

Section #2 - Quiz

Name: ___________________________ Date: ___________________________

Test your knowledge! Use what you have learned to answer the questions below.

Match the features to the type of animal it goes with:

1. Flat teeth
2. Strong jaws
3. Humans are this type
4. Eats mostly meat
5. A rabbit is this type
6. Eats a diet of meat and plants

Classifying Resources – Science in Society (WS#3510)

Section #2 - Quiz

Name: ___________________________ Date: ___________________________

Test your knowledge! Use what you have just learned to answer the questions below.

Are the following resources renewable, nonrenewable or cheatable? Use “R,” “N,” or “I” for your answer.

Field of corn __________

All in the Arctic tundra __________

And on a beach __________

List some animals that might be in a food web of a forest community.

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Samples of Activity/Experiment – Grade 3

Instinct or Learned Behavior – Life Science (WS#3545)
Section # 3 - Experiment/Activity

Name: 
Date: 

**Educator Notes**

**Activity:** Discover your behaviors that are instinctive and learned.

**Procedure:**
1. Complete the chart below by adding behaviors in each column.
2. If the behavior is a learned behavior, try to determine who taught it.
3. If the behavior is an instinctive behavior, see if any other family members share that same behavior.
4. Analyze the results of the chart to see which behaviors that YOU do are instinctive and which are learned.

<table>
<thead>
<tr>
<th>My behaviors</th>
<th>Behavior of My parents</th>
<th>My grandparents</th>
<th>My siblings</th>
<th>Friends</th>
</tr>
</thead>
</table>

Great Scientists – Isaac Newton - Science & Society (WS#3540)
Section # 3 - Experiment/Activity

Name: 
Date: 

**Educator Notes**

**Activity:** Make your own telescope.

**You will need:**
1. an old pair of reading glasses (You can find these in a drug store or pharmacy section.)
2. a magnifying glass
3. a flashlight
4. masking tape
5. waxed paper

(Note: This telescope won’t have a tube because then you couldn’t see the parts involved and how they work.)

**Procedure:**
1. Tape the glasses to something sturdy like a chair so that one lens is free and “sticks out.”

Matter – Solids, Liquids, Gases – Physical Science (WS#3502)
Section # 3 - Experiment/Activity

Name: 
Date: 

**Educator Notes**

**Activity:** Proof of a gas.

How do we know that gas takes up space? This activity should help you “see” gas doing its thing.

**You will need:**
1. 1 tbsp of baking soda
2. empty 2 liter bottle
3. 1 tbsp vinegar
4. a balloon

**Procedure:**
1. Place a teaspoon of baking soda into an empty soda bottle.

Scientific Tools Can Help Us Learn More – Science & Technology
Section # 3 - Experiment/Activity

Name: 
Date: 

**Educator Notes**

**Activity:** Discover with your senses.

How much can you tell about an object without using any scientific tools? Use just one of your senses to identify various objects.

You will need:
1. a stuffed animal
2. a cup of water
3. a lemon, sliced
4. a handful of change
5. a piece of sandpaper
6. a scented candle
Grade 3 Science (52 Topics)

**Earth & Space**
- Forces that shape the earth
- Properties of soil
- Natural world
- In the sky – Rainbow
- In the sky – Stars
- The Sun
- The four seasons
- Inner Planets
- Outer Planets
- Types of Rocks
- Moon
- Soil Erosion and deposition

**Physical**
- Matter – Solids, Liquids and Gases
- Physical properties of matter
- Simple systems
- Force and Motion
- Light as a form of energy
- Shadows

**Life**
- Needs of Living Organisms
- Vertebrates
- Animal Diets
- Skeletal System
- Muscular System
- Nervous System
- Digestive System
- Habitats
- Food Chains
- Food Web
- Plant care
- Animal Care
- Animal Offspring
- Inherited Traits
- Instinct vs Learned behavior
- Changing Areas

**Science & Technology**
- Simple Machines – Inclined plane, wedge, screw
- Simple Machines – lever, wheel, pulley, axle
- Compound Machines
- Science answers questions
- Data collection practices
- Lab safety
- Decisions using critical thinking
- Tools used in experiments

**Science in Society**
- Importance of Earth’s resources
- Renewable and nonrenewable resources
- Competing for resources
- Environmental Changes
- Endangered or Extinct Species
- Great Scientists – Thomas Edison
- Great Scientists – Isaac Newton
- Great Scientists – Benjamin Franklin
- Reduce, Reuse, Recycle
- Conservation

Each Science Topic includes 3 sections

**Section 1:** Reading Material: A high interest, low readability article that introduces the objective with an engaging fiction or non-fiction passage. This study material is fun to read!

**Section 2:** Quiz: “Test Your Knowledge” section with multiple question types

**Section 3:** Experiment/Activity: An experiment or activity relevant to each objective. These use a student-centered approach to learning by allowing the student to conduct a hands-on activity.