The Anatomy Apron and the learning activities in this guide are designed to be used with pre-school through primary-grade children. The organs of the Anatomy Apron are the heart, lungs, liver, stomach, small intestine, large intestine, and kidneys. Each labeled organ is easily attached to the washable vinyl apron with Velcro. Cut the 18-inch Velcro self-adhesive strip into 1-inch pieces. Remove the paper backing and attach 1 piece of Velcro on the smaller organs outlined on the apron. For the larger organs, attach 2 pieces of Velcro to the apron. Then cut out the fabric organs on the solid lines and you are ready to use the Anatomy Apron!

This guide contains an introductory lesson on all the organs of the Anatomy Apron. For each organ, there is also a separate lesson using the Anatomy Apron, background information for the teacher, a reproducible, and follow-up activities for the child.

**Health Themes to Teach**

The themes stressed in the Anatomy Apron are care of the body and developing good eating, exercise, and sleep habits. In addition, these concepts are important for the young child to understand:

1. When the body grows, its organs remain in the same position.
2. Every person is special and has feelings.
3. Taking care of yourself makes you feel good.
4. Sometimes when you are mad, sad, or scared your body feels sick. That’s normal.
5. All of the body parts—organs, muscles, bones, and skin—work together and are controlled by your brain.

(Original Concept and Design by Maria Matson)

**How to Use the Reproducibles**

1. Using page 3 as a worksheet, the child can connect the dotted lines from each organ to its name and color the page.

2. Draw several outlines of the body using an opaque projector and the whole-body reproducible on page 3. Children can color and cut out each of the organs from the other reproducibles and paste them in their proper positions.

3. Trace the body of each child on butcher paper and cut it out. The child can cut out the organs from the reproducibles and paste them in place.

4. Use a large paper grocery bag for each child to make his/her own apron. Just cut out holes for the arms and head. The child can paste each of the reproducible organs in place.
INTRODUCING THE ANATOMY APRON

Getting Their Attention

TO SAY: “Imagine you could see what is under your skin and bones. Your inside parts are called organs. Can you name any organs? It is important to know what is inside of you and how to care for your body. The organs we are going to learn about are in the torso or trunk of your body. This is your torso.”

TO DO: Circle your torso with your hand. Then have the children do the same.

TO SAY: “You can’t see your inside organs because they are under your skin and bones. In the next few days we are going to learn more about these body parts and how we can take care of them. Have you ever wondered what was inside your body?”

Introducing the Organs

TO DO: Hold up the Anatomy Apron.

TO SAY: “Let’s look at what’s inside our bodies. This apron shows what is under our skin and bones.”

TO DO: Choose a child to model the apron. As you say the name of each organ, place it on the Anatomy Apron. Then with your hand show where each organ is on your own body. After you ask the child to do the same, check each child for the correct position. You may also want to write the names of the organs on the chalkboard.

TO SAY: “I’m going to point to each of the organs on the apron. Repeat each organ’s name after I say it. This is the heart. Put your hand on your heart. Can you feel your heart beating? These are the lungs. Say lungs. Put your hand on your lungs. Take a deep breath and feel your lungs make your chest get bigger with air. This is the liver. Say liver. Put your hand on your liver. This is the stomach. Say stomach. Put your hand on your stomach. This is the large intestine. Say large intestine. Put your hand on your large intestine. This is the small intestine. Say small intestine. Put your hand on your small intestine. These are the kidneys. Say kidneys. They are in the middle of your back. Put your hand on the kidneys.”

Checking for Understanding

TO DO: Remove the organs. Choose another child to model the apron. Check their recall of the names and locations of each organ. For younger children, check only for the correct location of each organ. Present the organs in the same order as above.

TO SAY: “Let’s start all over again. This time I will show you each organ. You tell me its name. Then I’ll choose one of you to put it in the correct place on the apron. The rest of you will show me with your hands where the organ is in your own body.”

TO DO: As a follow-up, use page 3. The child traces the dotted lines to each organ, then colors the page.

Summary

TO SAY: “Today we started to learn about some of our body organs. We learned where our heart, lungs, stomach, liver, large intestine, small intestine, and kidneys are inside of our bodies. Next time, we are going to learn more about the heart. You will be able to listen to the heart!”
THE HEART

For the Teacher

The heart is a hollow muscle that continually pumps blood throughout the body. Weighing less than a pound, the heart lies in a slanted position near the middle of the chest. Blood, containing oxygen and other nutrients to feed the cells, is pumped out of the heart through the arteries. Blood is returned to the heart through the veins. Valves control the flow of blood through the heart itself. The beating sound of the heart is caused by the opening and closing of these valves. It takes about one minute to circulate blood around the body and back to the heart. It pumps 5 quarts of blood through its chambers every 60 seconds.

A Lesson

Materials: One empty bathroom tissue roll for every two children in the class

TO DO: Choose a child to model the apron. Take the cloth heart and place it on the Anatomy Apron. Then make a fist.

TO SAY: “Today we are going to learn about the heart. Say heart. Everyone make a fist. Your heart is the size of your fist. Put your fist on your heart.”

TO DO: Demonstrate. Place your fist on your heart. After telling the children to do the same, check each child for the correct position.

TO SAY: “Put your hand on your heart again. Can you feel it beating? You’ll use these empty bathroom tissue rolls to listen to your friend’s heart. What sound does it make?”

TO DO: Divide the class into pairs and give each pair one empty bathroom tissue roll. Have each child take turns putting his/her ear to the roll and placing the other end over his/her partner’s heart. Have the children describe what they hear.

TO SAY: “The heart has an important job. When your heart pumps, it pushes blood to all parts of the body. It works all the time without stopping. When blood goes in and out of your heart it makes the beating sound that you hear. Let’s see what happens when you make your heart work harder. Everyone stand up. We are going to run in place like this.”

TO DO: Run in place.

TO SAY: “After you run, take turns listening to your friend’s heart. What do you hear? How does it sound different? How did your own heart feel?”

Worksheet

Use the “Heart” reproducible. Have each child color the heart dark red before cutting it out along the solid and dotted lines. Have the child paste it to either the paper cutout of his/her body or to the paper grocery bag apron. Display the Anatomy Apron for visual reference where the children are working.

Song

(To the tune of “The Farmer in the Dell”)

The heart is like a pump,
the heart is like a pump!
Pumping blood to help you grow,
the heart is like a pump!
MY HEART

Here is your heart.

heart
THE LUNGS

For the Teacher

The two lungs, suspended in the chest cavity, consist of masses of spongy tissue. The lungs rest on the muscular diaphragm that separates the chest from the abdominal cavities. The lungs stretch like balloons when air is inhaled. Air inhaled through the nose and mouth travels down the trachea, or windpipe, through the bronchial tubes to the air sacs in the lungs. There are as many as 600 million air sacs in the lungs. They supply the blood with oxygen. The lungs remove the carbon dioxide that is expelled when we exhale.

A Lesson

Materials: Two balloons

**TO DO:** Choose a child to model the Anatomy Apron. Take the cloth lungs and place them on the apron. Place your hands on your lungs. After telling the children to do the same, check each child for the correct position.

**TO SAY:** “Today we are going to learn about the lungs. Say lungs. Place your hands over your lungs. Take in a deep breath of air. What happens? Take in a deep breath and let it out. What happens when you let out air? Your lungs are protected by the bones in your chest. When you breathe in, your lungs fill with air and your chest goes out. When you breathe out, your lungs let out the old air and your chest goes in. Did you know that your lungs can hold about as much air as a basketball? Let’s try it again. This time stand up and put your hands on your chest. Now, take in a big deep breath. Did you feel your chest move? All right! You can let the air out! Let’s use these balloons to show how the lungs work.”

**TO DO:** Blow up the two balloons but do not tie them. Hold them over the lungs on the Anatomy Apron.

**TO SAY:** “How are the lungs like these balloons? What makes the balloons get bigger? What makes the balloons get smaller?”

**TO DO:** Let the air out of the balloons slowly to demonstrate exhalation. Blow up the balloons again to demonstrate inhalation.

**TO SAY:** “The best way to take care of our lungs is to breathe fresh air.”

Worksheet

Use the “Lungs” reproducible. Have the child color the lungs similar to the color on the Anatomy Apron before cutting it out on the solid and dotted lines. Have the child paste it surrounding the heart on the paper body cutout or on the grocery bag apron. Show the children how to draw a windpipe (trachea) from the nose to the top of the lungs with two (bronchi) tubes from the windpipe, one leading to each lung. Use the Anatomy Apron for a visual reference.

Song

(To the tune of “Row, Row, Row Your Boat”)

Breathe, breathe, breathe in air and your lungs will grow!
In and out,
in and out,
that’s the way it goes!
Here are your lungs.

My Two Lungs

lung

lung
THE LIVER

For the Teacher

The liver, the largest glandular organ in the body, has many functions. It produces chemicals for digestion and for cleaning the blood. It produces proteins to fight disease and to clot blood. The liver stores vitamins and minerals from food until the body needs them. The liver lies below the diaphragm and above the stomach. It weighs from 3 to 4 pounds. Remarkably, the liver can grow new cells if part of it is destroyed.

A Lesson

Materials: 2-3 bandages (or 1 per child if available), hydrogen peroxide, gauze or a clean handkerchief

TO DO: Choose a child to model the Anatomy Apron. Take the cloth liver and place it on the apron. Place your hand over your liver. It lies mainly on the right side below the lungs. After telling the children to do the same, check each child for the correct position.

TO SAY: “Today we are going to learn about the liver. Say liver. Put your hand on your liver. The liver has a lot of jobs. When you are sick it helps you get well again. It stores the vitamins from the food you eat until your body needs them. When you need extra energy for running, or playing very hard, your liver helps you. Another important job of the liver is to stop your bleeding. Do you remember a time when you had a cut? What happens when you get cut?”

TO DO: Let children share their experiences.

TO SAY: “Let’s practice taking care of a cut. When you get a cut you should go to your Mom, Dad, teacher, or babysitter for help. Let’s pretend that one of you got a small cut. The liver starts to work to stop the bleeding. In the meantime, you have to help too by cleaning and bandaging your cut. (Note: For deep cuts, it is important to first apply pressure to control the bleeding.) Here are some bandages, some gauze, soap and water, and something to clean your cut.”

TO DO: Choose a child to show how to take care of a small cut on the hand. Demonstrate thorough hand-washing after telling the children about it.

TO SAY: “Let’s pretend that (name of the child) cut his/her finger. I’ll show you what will happen. The first thing to do is wash your hands with soap and water. Each of you pretend that you are washing your hands. Then your Mom will wipe something on the cut to clean off any germs left after washing.”

TO DO: With a clean handkerchief or gauze wipe on the hydrogen peroxide. Next demonstrate how to remove the backing from a bandage strip without touching the gauze part.

TO SAY: “The next thing to do is to put the clean bandage on the cut. The bandage keeps the cut clean and presses it to stop the bleeding. Now your job is to keep it from getting wet or dirty. When your cut gets a scab, like a hard crust, your bandage can come off. You may need to change your bandage if it gets wet or dirty.”

Worksheet

Use the “Liver” reproducible. Have each child color the liver, cut it out, and paste it below the lungs on the right side of the paper cutout body or grocery bag apron.
Here is your liver.
THE STOMACH

For the Teacher
The stomach is located in the upper left side of the abdomen. The upper end of the stomach connects with the esophagus. The lower end opens into the small intestine. The stomach is a muscle. This muscle can stretch to hold the food we eat. The muscle structure allows the stomach to mix and churn its contents. Glands in the walls of the stomach secrete juices to turn food into a liquid. The stomach muscles squeeze this pulpy liquid toward the small intestine. Food is left in the stomach until it is turned into liquid. The “growling” of the stomach is caused by the muscles working to move the liquid food toward the small intestine. On the average, the stomach empties in three to five hours.

A Lesson
Materials: a large plastic zip-lock bag, a banana, water, a few crackers

TO DO: Choose a child to model the Anatomy Apron. Take the cloth stomach and place it on the apron.

TO SAY: “Today we are going to learn about the stomach. Say stomach. Put your hand on your stomach.”

TO DO: Place your hand over your stomach. Check each child for the correct position.

TO SAY: “Your stomach is like a stretchy bag inside of you that holds the food you eat. We’ll use this plastic bag and pretend it’s a stomach.”

TO DO: After explaining each step below, put the banana, crackers, and a little water into the plastic bag. Close the bag tightly.

TO SAY: “So let’s cut the banana into small pieces and put it inside the bag. Next, we’ll feed some crackers to the stomach in small pieces. After food is swallowed it travels down the throat to the stomach. There, juices begin to work on the food. Let’s pretend that these drops of water are the juices from your stomach. Now let’s close the bag. Your stomach starts to squeeze and mix the pieces of banana and cracker with juices. This is called digestion.”

TO DO: Choose children to help squeeze the bag. Continue until the ingredients have turned into pulpy liquid. Add more water, if necessary. After talking about stomachaches, ask the children to share their experiences about stomachaches.

TO SAY: “Sometimes when you feel sad or mad or scared your stomach will ache. Did you ever have a stomachache? How did you get better? Sometimes when you have a stomachache, you have to go to the bathroom. The important thing to remember about taking care of your stomach is to eat small pieces of food, chew your food carefully, and eat and drink slowly.”

Worksheet
Use the “Stomach” reproducible. Have each child color, cut out the stomach, and paste it below the liver on the left side of the paper cutout body or grocery bag apron.

Experiment: Listening to the Stomach
Materials: Empty bathroom tissue rolls
Using the bathroom tissue roll as an ear amplifier, a child can listen to his or her partner’s stomach. Do this activity both before lunch and after lunch to note differences in sounds. Ask the children to describe the sounds they hear. Did they notice any differences in sound on an empty stomach and on a full stomach? Explain what causes the “growling” sound.
MY STOMACH

Here is your stomach.

stomach
THE SMALL INTESTINE
AND LARGE INTESTINE

For the Teacher

The intestine, a muscular tube, is divided into two sections called the small intestine and large intestine. The intestines extend from the lower end of the stomach to the rectum. The small intestine tube is about 20 feet long and empties into the large intestine. Most of the digestive process is done in the small intestine. Digestive juices secrete from its walls to complete the process the stomach starts. The digested food passes through the walls of the small intestine and into the blood. The large intestine is a thicker tube about 5 feet long. It absorbs the water from the food matter that is not digested. Then it eliminates the waste material from the body.

A Lesson

Materials: nylon stocking cut at both ends to resemble a tube, cooled cooked oatmeal, a plastic covering

TO DO: Choose a child to model the Anatomy Apron. Take the cloth small and large intestine and place them on the apron. Place your hand over your intestines. After telling the children to do the same, check each child for the correct position.

TO SAY: “Today we are going to learn about the small intestine and the large intestine. Say intestine. Put both hands over the intestines. The intestines have two parts—the small intestine and the large intestine. After your stomach mashes your food, it goes to the small intestine where it moves through 20 feet of tube. This tube is squished into a small space. If it were stretched out it would be as tall as a big tree. The small intestine uses muscles to push the food through it. When the small intestine has digested all of the food, it passes the waste to the large intestine. Waste is the part of food that your body doesn’t need. When you go to the bathroom, you get rid of the waste from your food.”

TO DO: Squeeze the oatmeal through the stocking tube. The oatmeal passing through the stocking simulates how the liquid food passes through the walls of the intestine to the blood.

TO SAY: “This stocking is like a small piece of the intestines. The oatmeal is like the food that is pushed through the intestines. Let’s push this food through as the intestines would.”

TO SAY: “Did you know that your intestines keep working even when you sleep? It takes one whole day for that food to take its long journey through the stomach, to the small intestine and, finally, to the large intestine. The only time your intestines aren’t working for you is when you get mad and upset. When that happens it’s best to rest and think about happy things.”

Worksheet

Use the “Intestines” reproducible. Have each child color, cut out the intestines, and paste them below the stomach on the paper cutout body or grocery bag apron. Show that the stomach connects to the small intestine. Show where the small intestine connects to the large intestine and where the end of the large intestine leads to the rectum. Extra activity: The child can compress a long piece of string and paste it on the cutout of the small intestine to simulate the 20-foot tube.

Song

(To the tune of “Three Blind Mice”)

Food we eat, food we eat, pushing through twenty feet. Small intestine sets the pace, large intestine gets the waste, all is done, but not in haste, food we eat.
MY SMALL AND LARGE INTESTINES

Here are your intestines.
THE KIDNEYS

For the Teacher
The two kidneys have many functions. The most important function is the production of urine. This fluid carries waste materials out of the body. The kidneys filter this waste from the blood. They can filter about 50 gallons of blood daily. Other functions of the kidneys include controlling the production of red blood cells and maintaining the blood pressure of the body. Each kidney is about the size of an adult fist. They are located below the middle of the back on either side of the spine. The right kidney, located under the liver, is a little lower than the left one. Some people are born with one kidney, but they can still lead a normal life. One kidney can do the work of two.

A Lesson

TO DO: Choose a child to model the Anatomy Apron. Take the cloth kidneys and place them on the apron.

TO SAY: “Today we are going to learn about the kidneys. Say kidneys. There are two of them. Put your hands on your kidneys. They are just below the middle of your back on either side of your spine (backbone).”

TO DO: Demonstrate. Check each child for the correct position.

TO SAY: “Now make two fists. Each of your two kidneys is about as big as your fist. The kidneys have a lot of jobs, but the most important one is cleaning your blood. Blood flows through the kidneys. When the blood leaves the kidneys it is clean. The part of the blood that the body doesn’t need is sent out of your body. This liquid waste that passes out of your body is called urine. One of the amazing things about the kidneys is that if one does not work, the other one will do the job. You can help the kidneys do their job by drinking lots of water.”

Worksheet

Use the “Kidneys” reproducible. Have each child color, cut out the two kidneys, and paste them on the back of the paper body cutout or the grocery bag apron. Use the Anatomy Apron for visual reference.

Demonstrate: How the Kidneys Work
Pour brewed coffee through a clean white paper filter. Show the residue left in the filter. Explain that this is similar to what the kidneys do when they clean the blood.

Song

(To the tune of “London Bridge is Falling Down”)

Kidneys clean and filter blood,
(Hold up two fists.)
filter blood, filter blood.
If one fails and is a dud,
(Turn right fist down.)
the other does his job.
(Hold left fist up high.)
MY TWO KIDNEYS

Here are your kidneys.

left kidney

right kidney

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One day Mr. Happy Face woke up to a beautiful sunny day, but his happy face turned to a frown. All the organs in his body were having an argument. They started pushing and shoving and saying how important they were. The heart thought it was the best because it pumps blood. The lungs thought they were the best because they take in air. The stomach thought it was the best because it digests food. The intestines thought they were the best because they get rid of waste. Everyone just ignored the poor liver. With all that mumbling and grumbling, poor Mr. Happy Face tried standing on his head, but that didn’t help. He was just plain miserable.

Finally, he called on his brain to help straighten things out. The brain told Mr. Happy Face to stop standing on his head. When he stood on his feet it helped a little. All the organs were quiet because they were too dizzy to argue. But the brain knew it would have to do something fast or they would start pushing and shoving again. So it decided to take action.

First the brain said to the lungs, “Two lungs, I know you have the important job of delivering oxygen to the body. Now, please say something nice about one of the organs that helps you.”

And the lungs smiled and said, “The heart is our buddy. It pumps blood to us and keeps us healthy.” Well, the brain was pleased that two of the organs were getting along and Mr. Happy Face started to feel a little better.

Then the brain said something very nice to the intestines. “Hello there, intestines! You’re very important because you finish the digestion job that the stomach starts. You also take the waste out of the body. Can you say something nice about another organ that helps you?”

Well, the intestines felt very good about being called important. After moving and thinking slowly and quietly, they said, “The stomach is very important, too. It dissolves food to a liquid so that we can do a good job. Yes, we’re glad that the stomach is our friend.”

The frown was turning to a smile on Mr. Happy Face.

The brain was very pleased with the organs and said, “I would like to compliment an organ that is a true friend to all of you—an organ that has many jobs…” And all the organs looked at each other trying to think who could be that important? And the brain said, “Your friend and mine, the liver!” Well, the neglected liver felt so good to be appreciated, it went to work helping all the other organs. Mr. Happy Face smiled. He and his organs sang this song:

**Song**

(To the tune of “My Bonnie Lies Over the Ocean”)

Your body has plenty of organs,
And each has a job it must do.
But when they’re all working together,
We see a much healthier you!