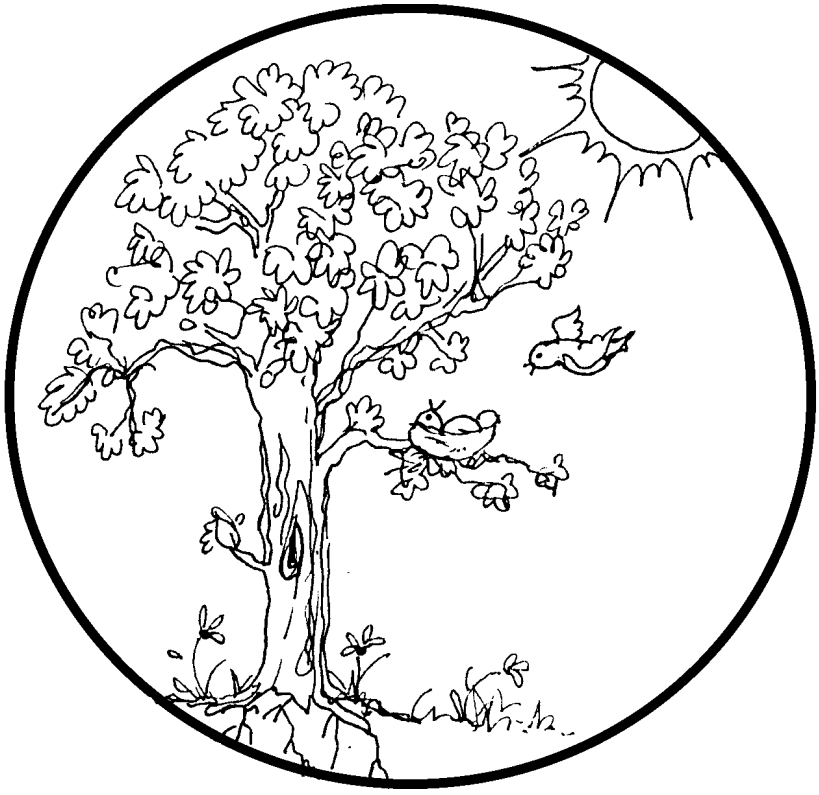
Life Cycle

Diversity in a Balance

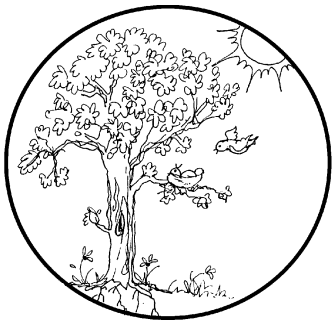
KINDERGARTEN

HUMAN BIOLOGY



2 WEEKS
LESSON PLANS AND
ACTIVITIES

LIFE CYCLE
OVERVIEW OF KINDERGARTEN



ORGANISMS

WEEK 1.
PRE: *Comparing large and small organisms.*
LAB: *Classifying and investigating large organisms.*
POST: *Comparing where large animals live.*
WEEK 2.
PRE: *Observing how and where organisms live.*
LAB: *Comparing shells.*
POST: *Comparing plants and animals.*

HUMAN BIOLOGY

WEEK 3.
PRE: *Discovering the different parts of the body.*
LAB: *Discovering and locating parts of the body.*
POST: *Distinguishing the function of external body parts.*
WEEK 4.
PRE: *Discovering why bones are important.*
LAB: *Comparing different models of skeletons.*
POST: *Exploring how teeth grow.*

PLANT LIFE

WEEK 5.
PRE: *Exploring how seeds grow.*
LAB: *Planting seeds.*
POST: *Exploring the uses of plants.*
WEEK 6.
PRE: *Defining the parts of a tree and flower.*
LAB: *Comparing seeds and the plants they produce.*
POST: *Comparing flowers, stems, and leaves.*

NATURAL ENVIRONMENT

WEEK 7.
PRE: *Exploring land and marine environments.*
LAB: *Comparing and contrasting environments.*
POST: *Describing a favorite environment.*
WEEK 8:
PRE: *Exploring the order of a natural community.*
LAB: *Dramatizing who eats whom.*
POST: *Characterizing producers and consumers.*

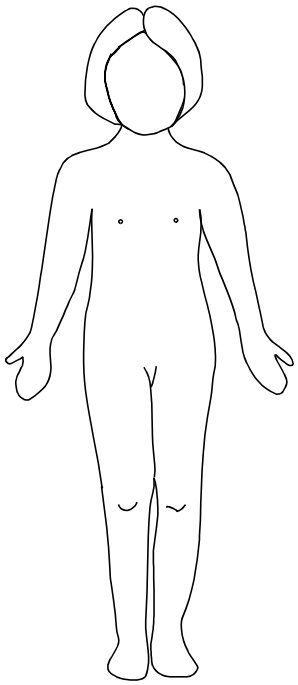
LIFE CYCLE - HUMAN BIOLOGY (KA)

PRE LAB

Students look at pictures of the body and locate body organs.

OBJECTIVES:

1. Discovering organs inside the body.
2. Labeling body parts.



VOCABULARY:

heart
kidney
lung
muscle
organ
skeleton
stomach

MATERIALS:

Look Inside Your Body by Gina Ingoglia (Putnam)
Human Body Placemats

BACKGROUND:

A child's body grows every day and unless someone points out the changes, it is difficult for that child to understand what is happening. The human body is difficult to teach because it is an integrated and complicated machine. The organs that make up the human body work with the other various organs of the body. If one part of the body is discussed it is important to emphasize what part it plays in the entire body's functions.

Students need to build a vocabulary by visually using a "correct" picture and emphasizing how the organs work together to create a living, breathing human body. Children do not understand their body, but they feel and sense its presence. When vocabulary is associated with their own body, they are reminded every day of the wonder of the human machine.

PROCEDURE:

1. A good introduction to the internal body structure is the recommended book *Look Inside Your Body.* This is a visual book that allows a student to look at the skeleton, stomach, heart, lungs, muscles, and sensory organs. The pictures and text together

weave a human body story, but the pictures are subtle and can be used to create stories.

2. Student should look at the Human Body Placemat and have them look at the different parts of the body as you discuss each one. You can play a game with the students by giving them a body part and in a group find it on the placemat and then the winning group is when all students are pointing to the correct site on their own body. Make sure that students not only locate organs on the placemat, but on their own body.

3. Important to state that a body part like a hand or head is different from internal organs like the heart or stomach. A hand for instance, contains bones, nerves, blood, and muscle. An organ has a specific function. For example the lungs are used to breathe or the heart is used to pump blood. The organs help make the entire body work together.

LIFE CYCLE - HUMAN BIOLOGY (KA)

LAB

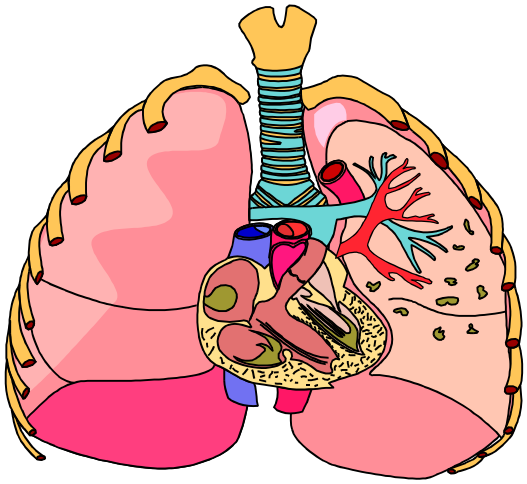
Students make a tracing of their body and find key organs.

OBJECTIVES:

1. Discovering and locating parts of the body.
2. Making a body mask.

VOCABULARY:

femur
heart
kidney
lung
pelvis
stomach



MATERIALS:

butcher paper
body cut outs
crayons
stethoscope

BACKGROUND:

The bodies of all organisms are well-constructed. It's like a car. If all parts are working well then the car will perform. The human body is the same. If all parts are working then the body functions well. Just as in the car, the older the human gets, the more prone the parts may break down.

Students will be locating the different body parts on their body listed below:

HEART - You can have the students try to locate it with a stethoscope. The heart is a hollow organ slightly larger than a clenched fist. The heart is on the left side toward the center in a space between the lungs.

STOMACH - The stomach lies just below the lungs, and is a reservoir for food.

LUNGS - The lungs lie on either side of the heart and both are cone-shaped. The lungs lie against the ribs. When you breathe you can see your chest move where the lungs are.

FEMUR - The femur is the heaviest, longest, and strongest bone in your body. It

is anchored to the pelvis.

PELVIS - Protects the bladder which gets rid of wastes (urine). It serves as a base by which the trunk of your body rests. The legs are anchored to the pelvis.

KIDNEY - There are 2 kidneys below the stomach which are bean-shaped. Kidneys are not fixed in rigid positions, they move as you breathe. The kidneys remove water with waste products from other systems.

PROCEDURE:

1. Locating organs on your own body by examining a model is not easy. In this exercise the students learn about 6 different body parts and then locate them on their own bodies.

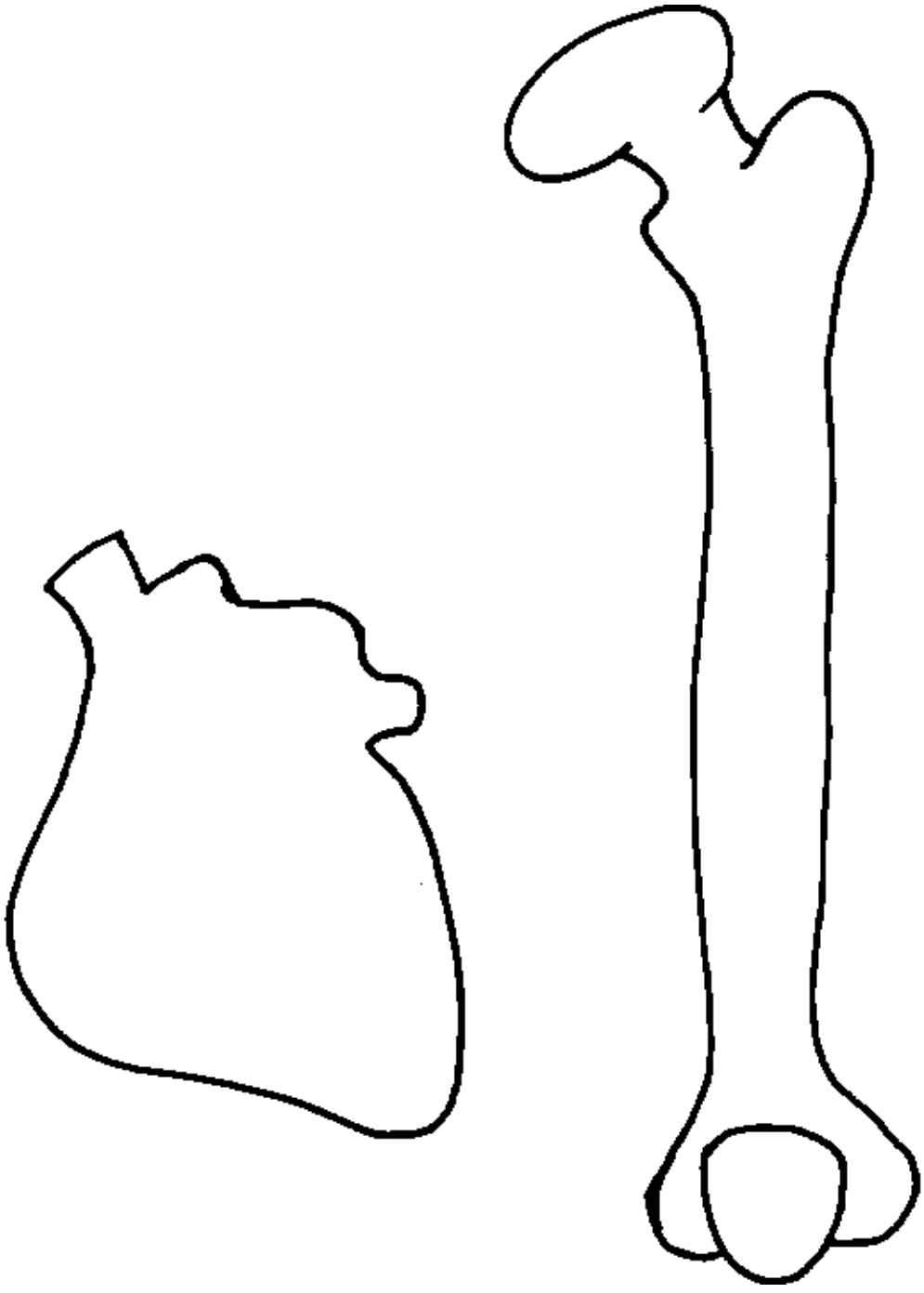
Students should color their body parts. Although it would be nice to have the students color the organs realistically, imagination at this age may prevent it!

2. Trace the outline of a child on butcher paper and cut it out. A parent's help can be very useful in this activity.

3. Discuss the functions of each of the body parts included with this activity. Have the students color the parts and then cut them out. The students are then to locate where they think the various body parts belong on their body masks. Make sure that you give the students a major "clue" in your discussion (listed below). Remember that it is difficult for students to find where the parts are located. Give the students clues to help locate the part by themselves. Try not to point out the locations directly.

LIFE CYCLE - HUMAN BIOLOGY (KA)

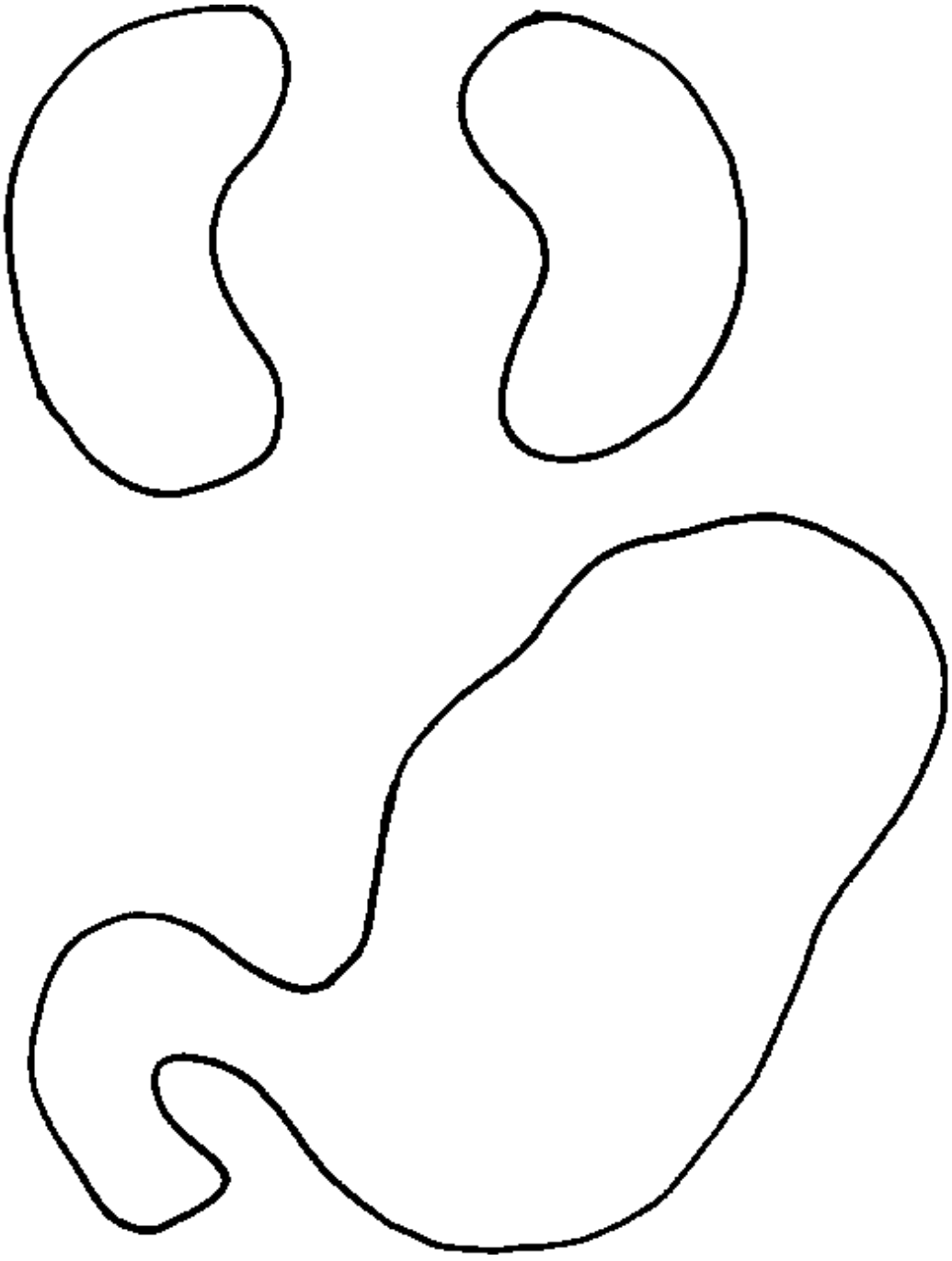
LAB



Heart (left) and Femur (right)

LIFE CYCLE - HUMAN BIOLOGY (KA)

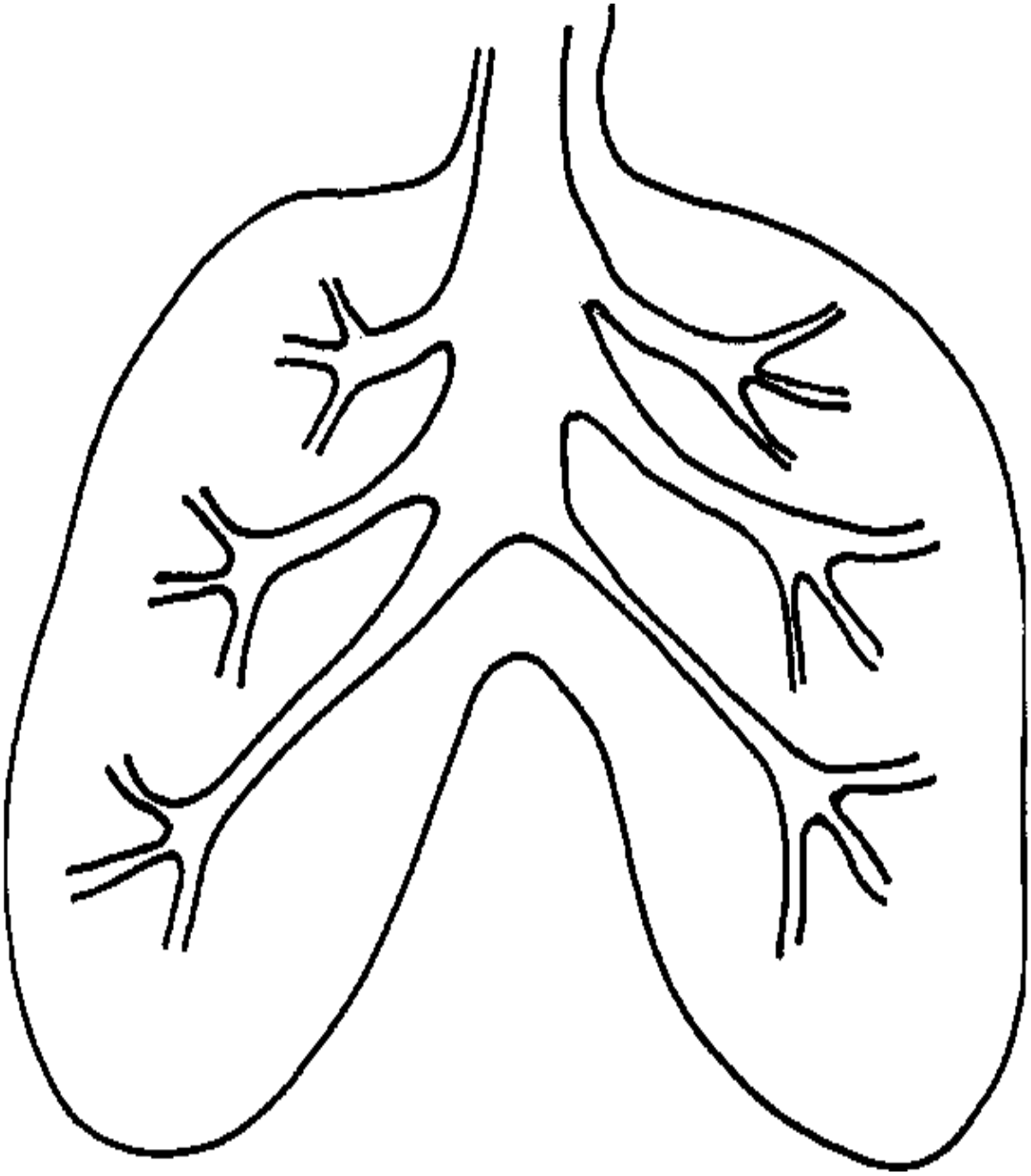
LAB



Kidneys (top) and stomach (bottom)

LIFE CYCLE - HUMAN BIOLOGY (KA)

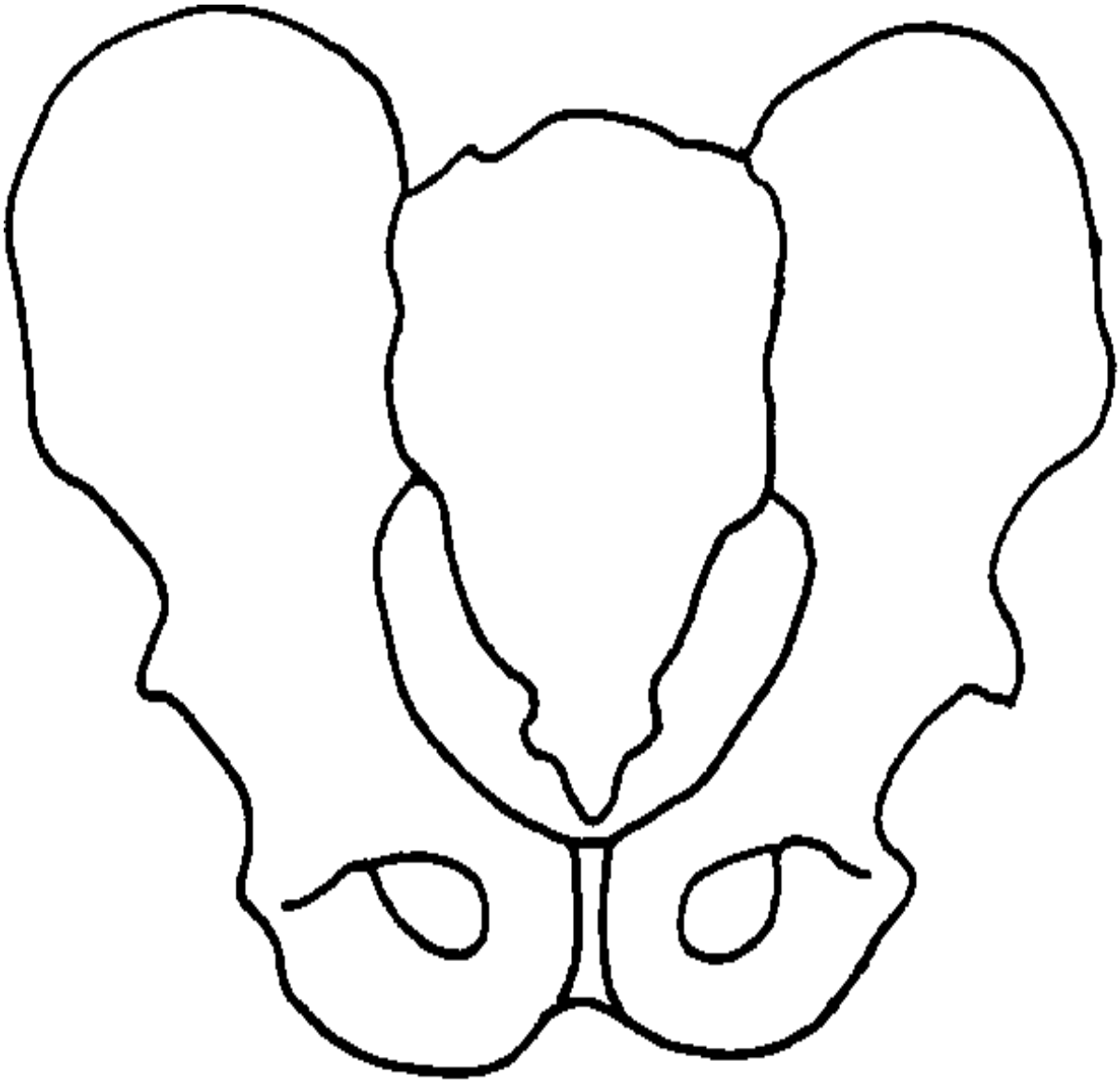
LAB



Lung

LIFE CYCLE - HUMAN BIOLOGY (KA)

LAB



Pelvis

LIFE CYCLE - HUMAN BIOLOGY (KA)

POST LAB

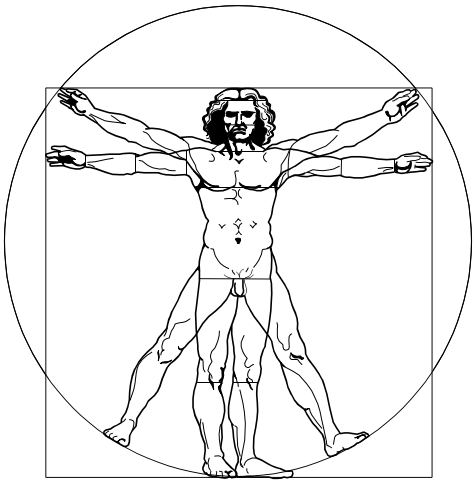
Students identify body parts.

OBJECTIVES:

1. Comparing external body parts.
2. Distinguishing the functions of external body parts.

VOCABULARY:

arm
foot
hand
head
leg
trunk



MATERIALS:

worksheet

BACKGROUND:

On the outside, our bodies are separated into the following obvious parts, head, torso, arms, and legs. Each major part has a specific function. The legs are used for locomotion like walking, running, jumping, and swimming. The arms are used for holding things, lifting, pushing and pressing. The torso or body trunk (the area between the head and legs) is used to bend and twist our bodies around. The head contains the brain which is the "control center" of the body. It tells us what we see, hear, smell, taste, and touch

Students have looked at what is inside their bodies, unfortunately, we cannot see these parts because of the skin. All of the internal body parts provide the "energy" needed to make the outside body parts work. Without muscles and bones we could not walk, sit or have any movement. Without the stomach system we could not digest food. Without the lungs we cold not get the oxygen which we need. Without the brain we could not have the "directions" to make everything else work.

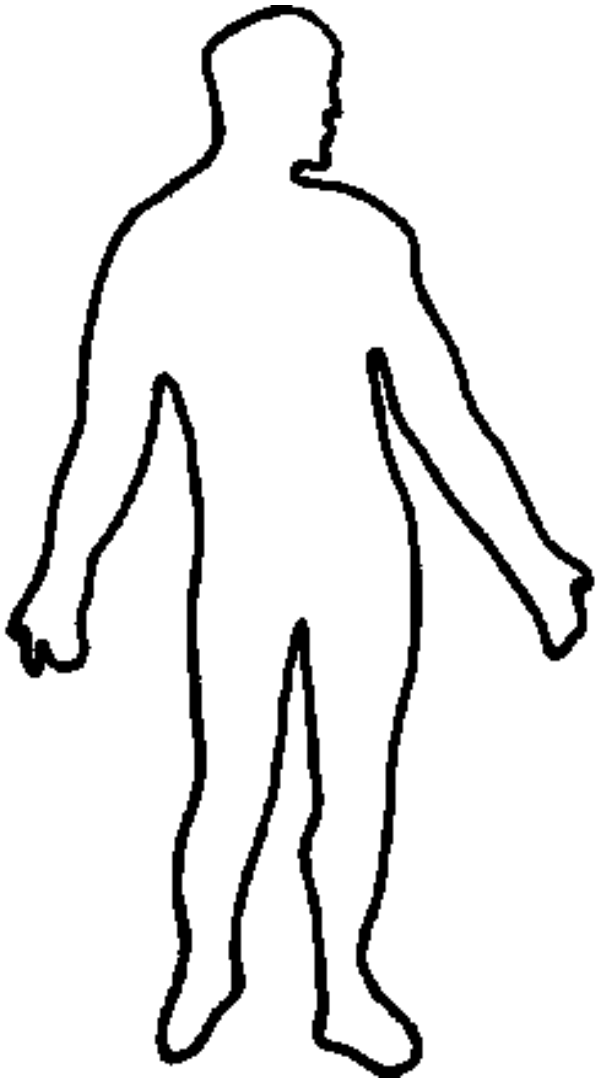
PROCEDURE:

1. Distinguish for students the difference between internal and external body parts.

2. Use the worksheet to have the students write the body part next to the part in the corresponding diagram. Discuss the function of each of the body part.

LIFE CYCLE - HUMAN BIOLOGY (KA)

POST



LABEL THE FOLLOWING PARTS: HEAD, ARM, TORSO, HAND, LEG, FOOT

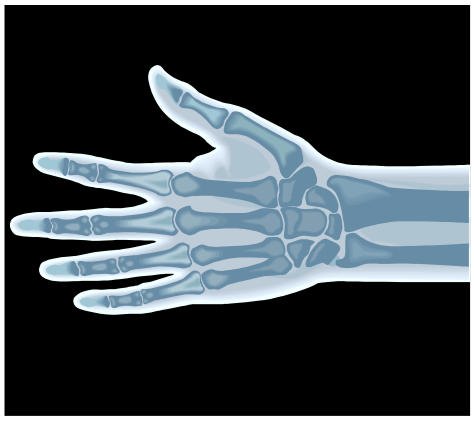
LIFE CYCLE - HUMAN BIOLOGY (KB)

PRE LAB

Students discover that humans have an internal skeleton.

OBJECTIVES:

1. Exploring the skeletal system.
2. Discovering why bones are important.



VOCABULARY:

backbone
finger
foot
jaw
lower leg
pelvis
skull
tail bone
upper leg
wrist

MATERIALS:

The Skeleton Inside You by Philip Balestrino (Harper Trophy)
clay
Human Body Placemats (vinyl)

BACKGROUND:

The skeleton allows humans to stand, sit, run, roll, walk, and perform almost every other motion. It gives our body the strength to stand up and if we did not have a skeleton, we would be like a jellyfish, or just a glob of jelly.

Students have seen skeletons but many of them do not realize how it relates to their own body. They are not sure if there is one big bone or many little ones. They don't realize how they stay connected, many believe that we are glued together.

PROCEDURE:

1. Read the recommended book, *The Skeleton Inside You* by P. Balestrino. It can help you introduce the human skeleton to your students. Other books can be substituted.

2. Ask students if their bones are hard or soft. To prove to them that bones are hard, have them knock their clenched fists together at the knuckles. They can hear a strong tap which is the sound of bones. If you have any bones, make a display so students can see what bones look like.

3. Give each child a ball of clay and ask them to make a figure of a person. After they make the figure, ask them if the figure has a skeleton. Many will say yes. Well, if the figure had a skeleton and you tried to squash the figure it should not have flattened. Have the students determine for themselves if the figure has a skeleton. Since the figure can be squashed, it has no skeleton.

4. Ask your doctor if he or she can “donate” an x-ray from their medical files. It is amazing to students to see that we can actually “see” through our skin.

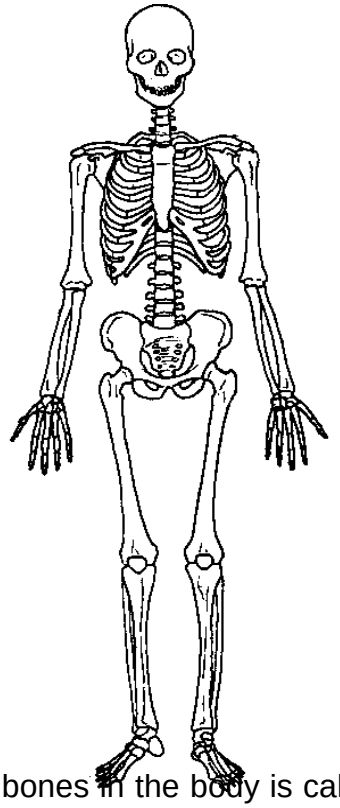
LIFE CYCLE - HUMAN BIOLOGY (KB)

LAB

Students discover how many bones are in a human skeleton.

OBJECTIVES:

1. Comparing different models of skeletons.
2. Counting bones in the human body.



VOCABULARY:

backbone
finger
foot
jaw
leg
pelvis
skull
tail bone
wrist

MATERIALS:

Skeletons (Halloween type)

BACKGROUND:

The common name for the combination of all the bones in the body is called the skeleton. The skeleton has several important functions: a) a framework that provides a shape for the body; b) a solid anchor for attachment of muscles; c) production of blood; and d) protection of the brain, spinal cord and other vital organs.

Bone tissue varies in hardness. The outside of most bones is very hard. Minerals give bone tissue its hardness. Inside the bones is a soft material called marrow. Cartilage is generally found at the ends of bones that move against one another. Cartilage is a smooth, flexible material that is tissue. Ligaments are tissues that may be found at the ends of bones if the bones are still held together. There are 206 bones in an adult skeletal system.

Bones articulate at joints and are held together there and allowed to move with the help of ligaments. Bones and muscles are attached to each other by means of tendons. This combination of muscle and bone provides an extraordinarily effective means of movement.

PROCEDURE:

1. Give groups of students a skeleton. Ask students to compare the skeletal model with their own body. They can compare by counting the bones of each of the models and see if they have the same number.

2. Give students either the Human Body Placemat or the worksheet of a skeleton, to count how many bones there really are. As they will find out, most skeletal models are incorrect in one way or another. Note that some books have varying numbers, because different numbers of bones appear at different growth stages. Younger children have more bones because some of them will fuse in later life.

LIFE CYCLE - HUMAN BIOLOGY (KB)

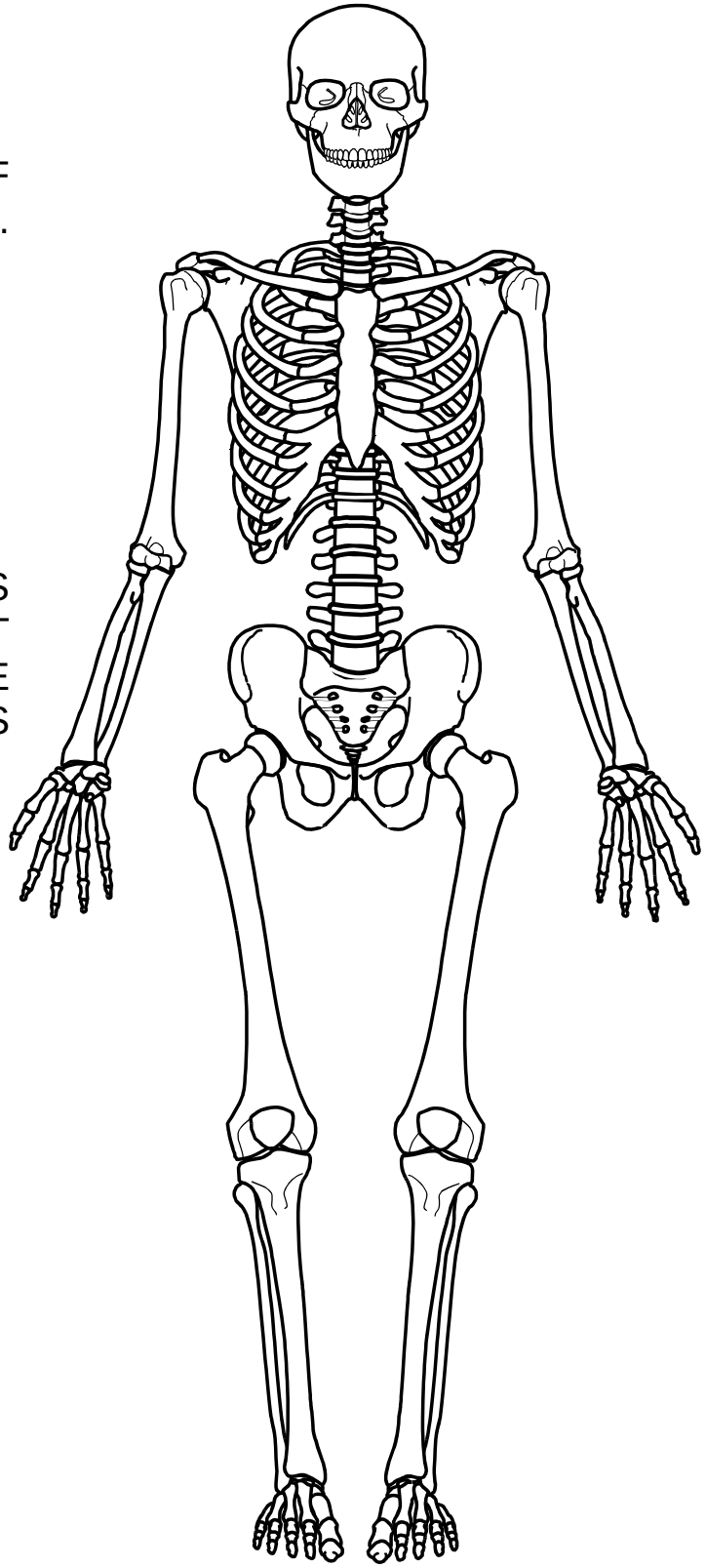
LAB

1. COUNT THE NUMBER OF BONES ON YOUR SKELETON. HOW MANY DO YOU HAVE?

_____

2. WHICH HAS MORE BONES THE SKELETON YOU JUST COUNTED, OR THE PICTURE OF THE SKELETON ON THIS PAGE.

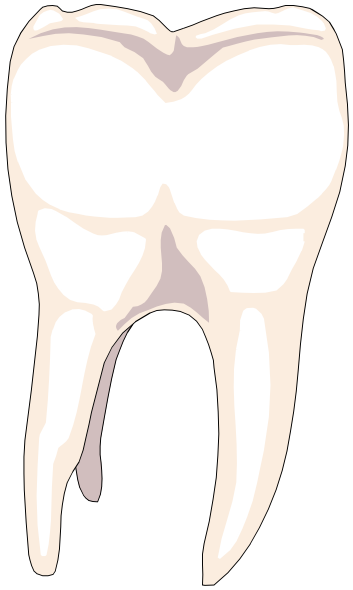
_____



LIFE CYCLE - HUMAN BIOLOGY (KB)

POST LAB

Students look at their teeth.



OBJECTIVES:

1. Investigating body growth.
2. Exploring how teeth grow.

VOCABULARY:

growth
teeth

MATERIALS:

worksheet
examples of teeth
How many Teeth? by P. Showers (Harper Trophy)

BACKGROUND:

Each person has two sets of teeth during his lifetime. The first set (baby teeth) is called the milk or deciduous teeth. They begin to erupt at six months and one appears about each month thereafter until all twenty have erupted. The deciduous teeth are lost between the ages of 6-13.

The second set of teeth is called the permanent set. These appear between the ages of 6 and 17 with the exception of the wisdom teeth. There are 32 teeth in the permanent set. They are named according to their shape and function. The incisors are shaped like chisels and serve to cut food. The canines are pointed and used to tear and shred food. The premolars crush and tear food. The molars crush and grind food. The last molar tooth in each side of the jaw is called a wisdom tooth, which erupts between the ages of 17 and 25 or in some cases may never erupt.

The teeth are part of the digestive system. They begin the breakdown of food. The teeth are considered an accessory organ, because one can live without teeth.

PROCEDURE:

1. Read the recommended book or other appropriate book.

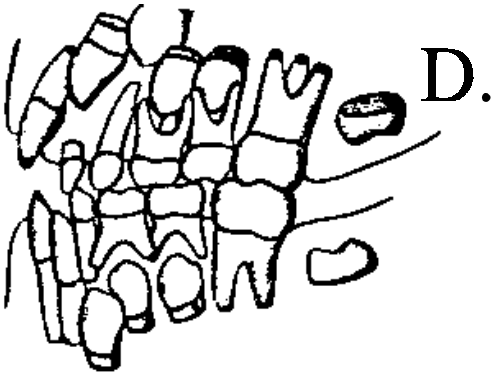
2. Hand out the worksheet and see if students can find which picture is reflected of their teeth. ANSWERS: A = 6 months; B = 3 years; C= 5 years; D = 7 years; F = 9 years; and G = 15 years

LIFE CYCLE - HUMAN BIOLOGY (KB)

POST

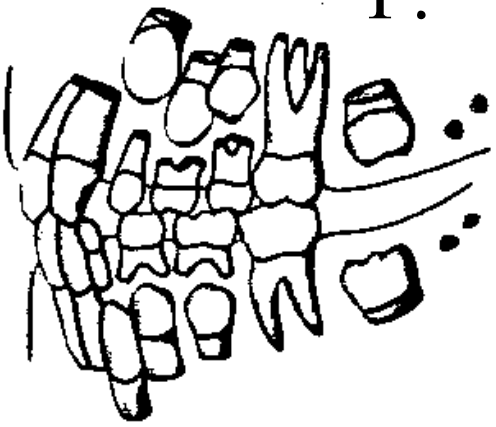
A.

D.

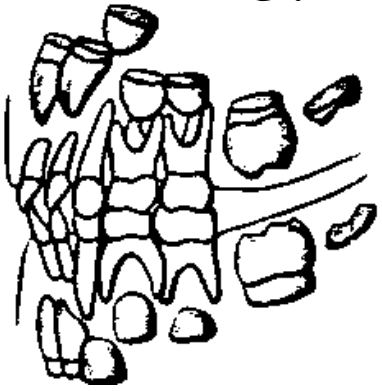


B.

F.



C.



G.