Western Upper Peninsula Center
for Science, Mathematics and Environmental Education

FAMILY SCIENCE/MATH NIGHT LESSON PLAN

Family Math & Science Lesson Plan from students in ED 3510 Communicating Science course (2-credits)
Western Upper Peninsula Center for Science, Mathematics & Environmental Education at Michigan Technological University
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Our Amazing Body!

Presenter's name: Megan Ballard, MTU Dept. of Biomedical Engineering
Age Group: K-2
Topic: The Human Body
Michigan Content Standards

- Explain characteristics and functions of observable body parts. (SCI III.2. Elem.1)

Sources Consulted:

1. http://askeric.org
2. http://www.jdenuno.com/Bones/Bones.htm
3. Parker, Steve. ***How the Body Works.*** Reader's Digest Young Families. 1994. New York.

Objectives

After this presentation, students will be able to:
1. Identify major bones in the body (such as the ribs, skull, leg bone, arm bone).
2. List three major systems of the body.
3. Locate various bones, systems, and organs of the body.

List of All Materials Needed (include quantities):

- Plastic bendable Q-tips (some cut in half, some with just the tips, and a few that are whole)
- Diagram of a skeleton (either on poster board or overhead)
- Construction paper
- Glue
- Large sheets of newsprint for tracing students' bodies
- Crayons or Markers
- Body parts (heart, lungs, brain, stomach, eyes, mouth) on overhead. Information as needed.
- Bingo cards (with various body parts in the squares)
- Bingo chips (made out of construction paper)
- Various bones to show as examples (optional)

Room Arrangement or Special Needs: Put desks in groups of four. Make sure that the parents sit with their children and not with other parents.

Procedure

Introduction
Welcome to Family Science Night! The Western U.P. Math and Science Center sponsor the Family Science Night program. Each year, science nights are conducted at 20 elementary schools throughout Houghton, Baraga, Gogebic and Ontonagon counties). Michigan Tech University students from a variety of departments---education, biology, engineering, forestry and others, conduct the activities.

My name is Megan Ballard and I am a student at Michigan Technological University. I am in the biomedical engineering department. When I finish my degree this spring, I hope to enter graduate school for physical therapy. As a physical therapist I will be able to help people recover from and prevent various injuries.

The goal of family science night is for parents and students to have fun doing science together. We can all be scientists---because science is making observations, asking questions and figuring out the answers. Parents, please sit next to your child and participate in the activities. Thank you for coming tonight and have fun!

Attention-getter: What would your body look like without any bones? Kind of like this pillowcase in a heap on the floor?

Procedure

A. What makes up our body?

- What is inside of our bodies?
  - ✓ Write down what the students say on the board
- Show pictures of different organs and explain a bit about them (such as where they are located and what they do---very short and simple).

B. Q-Tip (or toothpick) Skeleton

- What hold us up and makes us able to walk and run?
- What are some the bones that we have? (write on the board)
  Optional: Hold up and pass around the samples of the bones (labeled); when the bones are held up, ask students where in the body they think the bone came from.
- How would everyone like to make a skeleton of their own? Pass out construction paper and Q-tips/toothpicks. Explain that we are going to create skeletons of our own body.
- Go through how to build it as the students are building it with their parents. We will first start with the spine and then add a skull. Next we will move on to the arms (remember there is more than one bone!) and legs. Finally we will add the fingers and toes with a crayon. If they would like, the students can draw a face on their skeleton. (**Inquiry-oriented alternative** – let students feel their own bodies to determine where the bones are as they make their own skeleton. When they are done, compare to the overhead of the skeleton.)

C. Human Body Tracing

Hand out a large sheet of newsprint paper to each student. Explain that students will lie down on the paper and their parent(s) will trace their body outline.

- Hold up (or put up on the over head) pictures of the various organs/components of the human body.

- With each organ, explain a few simple facts about it.
- For each organ, have children and parents draw and color that organ on their traced body (in the correct place).
- Ask the children to point out various organs on their paper body to their parents as the teacher calls them out.

D. Body Bingo

- Every student will be handed a bingo card and some bingo chips.
  - ✓ Each bingo card will be divided into various sections (it will be a grid). In each section there will be a picture of a different body part. Below each picture will be the name of the body part.
- Explain to the students that I am going to give them a clue, such as "this is located in your head and it helps you think," and they (along with help from their parents) will have to figure out what body part I am talking about. They will then put a bingo chip on that body part.
  - ✓ Make sure to explain what qualifies as "BINGO!"
- Whoever gets a "BINGO!" first will receive a prize….

Summary:

The human body is very complex and made of many different systems and organs.

- What does our heart do? Our heart helps move blood around our body.
- What does our stomach do? Our stomach and intestines help digest food so that we can have energy to run around and play.
- What does our brain do? Our brain helps us think. It also runs all the other systems of our body.
- What does our skin do? Our skin keeps everything contained inside our body.
- What does our skeleton do? Our skeletal system is composed of our bones. This system helps us move around and helps us to stand up.
- **Isn't the human body amazing?**

Cleanup:

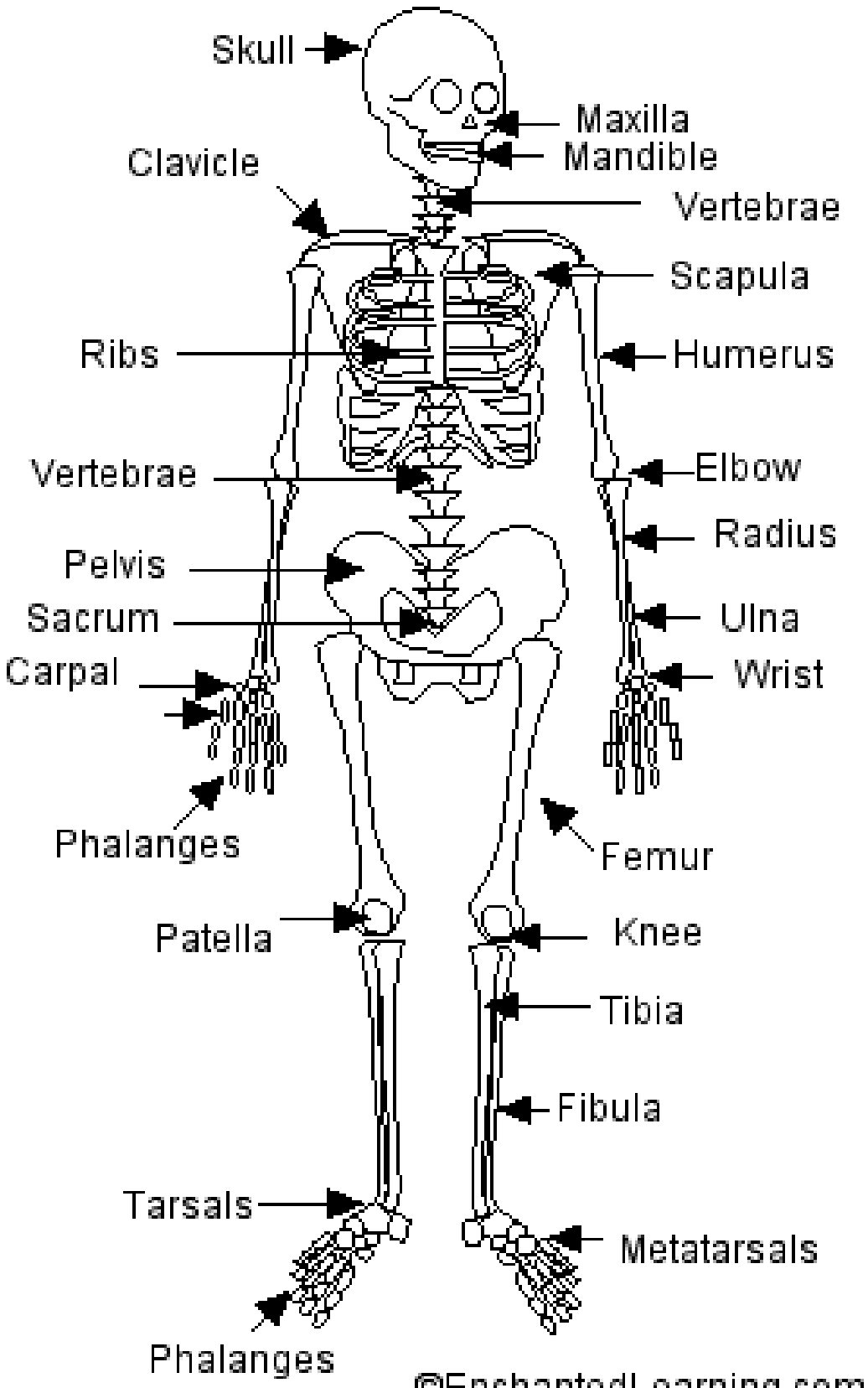
- Pick up scraps of construction paper and other trash.
- Put away glue, crayons, and markers.
- Erase anything left up on the board.

Safety Considerations:

- Make sure that nothing goes into a child's mouth.

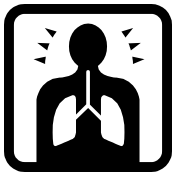
Filler: Play more rounds of *Body Bingo*!

Human Skeleton



Body Bingo

HEART	**NOSE**	**MOUTH**	**EYE**
LUNGS	**BRAIN**	**EAR**	**STOMACH**
SKELETON	**HAND**	**FOOT**	**TEETH**
MUSCLE	**ARM**	**TONGUE**	**LEG**





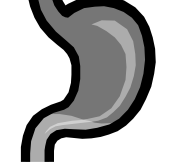










Our Amazing Body!!

B K T M P M X N D D T L J B S
Y R R B C Q G C C L S O E J K
R W A F Y D J H X P T U O G E
T L E I K N H R N A N M Z F L
L G H N N A S E W A G D Y D E
E X X Y N T O N R O M P U B T
J U B D O E S M E P W U Q H O
V G G M E A R L K C V C U I N
D D A N A V I Q F J X Y U P T
M C E L O S M O U T H T J Z E
H W Y I V T E P F A F T B S E
Y T E S S E S O N P C V G Y T
F E L C S U M I T S A N W D H
M W S J H R K A R H U F Y O O
W Z G W I S S G U L X C Y B L

ARM
BODY
BRAIN
EAR
EYE
FOOT
HAND
HEART
LEG
LUNGS
MOUTH
MUSCLE
NOSE
SKELETON
SKIN
STOMACH
TEETH
TONGUE