

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

Sponsored by



LESSON 3.27

CELL-ebration of Bones and Organs

Unit:
MISCELLANEOUS

PRECEPTS

- A1. Work independently and in groups to get things done
- A5. Communicate effectively with others
- F. Continuous Improvement
- F5. Acquire new knowledge



Lesson Type:
Large Group

NATIONAL STANDARDS

NL-ENG.K-12.12 – Applying Language Skills
NS.K-4.6 – Science in Personal and Social Perspectives

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- Name the major bones in the human body and their location.
- Identify key organs.
- Diagram the major parts of the *cell*.





TIME

Instruction time for this lesson: **45 minutes.**



RESOURCES

Human. (n.d.). Skeleton. Retrieved April 13, 2010, from www.ryedaleandwhitbyssco.co.uk/resources/skeleton.jpg

Human. (n.d.). Body. Retrieved April 14, 2010, from www.eskalaparty.de/wp-content/HumanBody.jpg

Human Heart. (n.d.). Diagram. Retrieved April 12, 2010, from www.heart-health-weightwatcher.com/images/HumanHeartDiagram.jpg

Lipids. (n.d.). Cell Diagram. Retrieved April 15, 2010, from www.concord.org/~btinker/workbench_web/unitIV_revised/lipids/cell_diagram_lipid.jpeg

Medical Respiratory. (n.d.). Lungs Diagram. Retrieved April 15, 2010, from www.arthursclipart.org/medical/respiratory/lungs%20diagram.gif

National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success.



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ **Marshmallows** - 3-4 per student
- ✓ **Toothpicks** - 3-4 per student
- ✓ **Party hat for teacher and all students**
- ✓ **Butcher paper**
- ✓ **Tape**
- ✓ **Markers**
- ✓ **PALS3.27.LG.AS.A** - Large cutouts of major bones from diagram attached for each group
- ✓ **PALS3.27.LG.AS.B** - Large cutouts of major organs from diagrams attached for each group
- ✓ **Clay, buttons, crafts, etc. for each group**
- ✓ **Party horn for teacher**
- ✓ **PALS3.27.LG.ASSESS.A** - one per student

KEY TERMS



The following term is presented in this lesson and appears in ***bold italics***:

Cell



CONTENT OUTLINE

- I. **Objective 1. | Name the major bones in the human body and their location.**
 - A Draw human body
 - B. Add bones
- II. **Objective 2. | Identify key organs.**
 - A. Add organs created earlier to drawing
- III. **Objective 3. | Diagram the major parts of the cell.**
 - A. Create a model of the *cell*

INTEREST APPROACH

Students will utilize marshmallows to create a body without the assistance of toothpicks. Have toothpicks (with ends cut) ready to assist after first attempt.



Welcome to class. I am so thankful that each of you are here today. As you notice on your desk, there are several large marshmallows. These items will be left untouched until directed, which will happen very quickly. When I say CREATE, take the marshmallows and create a human figure. Make a head, chest, stomach, arms and legs. You will have one minute to complete this task. What questions do you have?

CREATE!

Students should begin struggling with the activity very quickly and not be able to create the human figure. Once students seem as though they cannot create arms and legs, etc. begin speaking.



It looks as if we are having difficulties creating legs and arms for the human figure. Let's see if these toothpicks will help in this process.

Distribute toothpicks. Prior to class, cut the sharp point off each end to protect students.



When I say, RECREATE, let's try to make a human body again. Please remember to include a head, chest, stomach, arms and legs. Take a minute and a half to complete this creation. When finished stand up, holding your creation. What questions do you have?

RECREATE!

Monitor students as they progress through this project. Offer assistance, if needed.



Thank you for all the hard work you used while completing this human body. What differences did you notice when creating the second figure than you did while constructing the first figure?

Answers should be, “I could make arms and legs the second time,” “The first time was only a body, no legs and arms,” etc.



Thank you for those responses. They were all correct. What did the toothpicks represent in our figure we just created?

Answer should be, “Bones.”



Absolutely. The toothpicks represented the bones of the body. The human body is made up of more than 200 bones creating the skeletal system. Your skeleton supports your body, protects your internal organs, works with muscles to help create movement and contains **cells** that help keep your body healthy.

Put on party hat.



Today we will discuss various bones of your body, the major organs that help you function each day and the **cells** that make up your entire being. While working through this lesson, we will have a CELL-ebration of the human body, while we discuss the bones, organs and **cells**. Join me in wearing a party hat, while we CELL-ebrate gaining new knowledge.

Give all students a party hat.



This information is extremely important for you to fully understand how your body functions and operates. It is important that we all pay very close attention today to make sure we understand this very important CELL-ebration of the human body. If at any point today you have a question or do not fully understand what we are discussing, please raise your hand and I will clarify.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | Name the major bones in the human body and their location.



- A. Draw human body
- B. Add bones

Assign students to groups of three to five, depending upon class size for this activity. Find an area around the classroom with a large area of open wall space/window to complete the activity. Prior to the beginning of the period, place large sheets of paper on the wall/glass. One sheet per group; make sure each sheet is long enough for a student body to be traced on the sheet. Have markers and tape ready.



Just like our human figure was better with the use of toothpicks, we are stronger and more durable because our body contains bones.

When I say the word PARTY, select the tallest member of your group. That group member should stand with their back up against the middle of the sheet of paper. Group members will begin tracing around their entire body. Please be careful not to mark on our volunteer's clothes. This task will be completed in two minutes; at the end of the two minutes, all students should place their marker on the floor and line up beside their creation. What questions do you have?

PARTY!

Walk around while students are working, ensuring all students are actively involved. Having a stool may be helpful to assist shorter students trace around the head and shoulders of their classmates.



Give a one-minute as well as a 30-second warning.

Great job! We have some very talented artists in class today. Let's all CELL-ebtrate this accomplishment and give each other a round of applause.

Begin clapping and students should join in.



The next step in our human body CELL-ebtration is to help our new human model be stronger. How did we make our marshmallow human stronger?

Answers should be, "toothpicks," or "bones."



Correct, for our new human to be stronger, we must give them bones.

Give each group a folder containing large cutouts of the bones. Make sure doubles are made when needed i.e. - patella, humerus, radius, etc.



Inside the folder you just received, you will soon find large bones. When I say, FIESTA, as a team, tape the bones in your folder onto the human body in their correct region. As a group, this task will be completed in four minutes. What questions do you have?

FIESTA!

Walk around groups and monitor their progress. Assist students that may have a difficult time remembering the exact location of a bone.



Great job class. Let's finish off this FIESTA by a round of applause. Now that our human is drawn, let's move into our next step.



CTIVE 2. | Identify key organs.

a. Add organs created earlier to the drawing

The next activity will challenge students to add the major organs of the body to their traced body. Be sure to have the organ cutouts and tape ready for each group.



Our next step involved in letting this human join our CELL-ebation will be to allow them to have organs. Organs work together to complete various functions of the body. Inside this folder, you will soon find large organs. When I say, HIGH FIVE as a team, paste the organs in your folder onto the human body containing bones. As a group, this task will be completed in four minutes. When the entire group is finished with this activity, all group members should be proudly standing next to their creation.

Give each group a folder containing large organ cutouts.



What questions do you have?

HIGH FIVE!

Walk around groups and monitor their progress. Assist students that may have a difficult time remembering the exact location of an organ.



Awesome effort in completing our task. Let's celebrate by "high-fiving" all the members in your group. We have all now created a very strong human containing bones and organs. There is only one piece that we are missing in the creation of this new human. In the next few days, be watching for where your human may appear!

OBJECTIVE 3. | Diagram the major parts of the *cell*.



A. Create a model of the *cell*

*In the next activity, students will construct a **cell** and all of its parts. Have major components of the **cell** listed on a writing surface for students to see. Have clay and other items ready for student use.*



We are now ready to begin our final portion of our CELL-ebration. This last CELL-ebration will deal with the **CELLS**. All living things are made of **cells**. **Cells** are the basis for organization in all living things. Today, we are going to focus on the major components of a **cell**: the **cell** membrane, cytoplasm, nucleus, organelles, mitochondria, golgi apparatus, rough and smooth endoplasmic reticulum, microvilli and ribosomes.

Have listed on the board and the attached diagram, or one provided by the teacher, in plain sight for students.



Together each group will create a **cell** similar to the one on the board (*or wherever the diagram is located*).

Each **cell** must contain all the major components of the **cell** listed on the board. Each team will have 10 minutes to complete this celebration; at that time the oldest member of each group will bring the **cell** creation to the front of the room. Located on the front desk, we have clay and various craft items. Shortly, your table will create a **cell** using these items. When I say CELL-EBRATE, the shortest person at your table will come to the front of the room and get one container of each color of clay and seven craft items and return to the group. What questions do you have?

CELL-EBRATE!

*Walk around the room assisting students when help is needed. Offer students with other craft items when they may get stuck and need help creating a component of the **cell**.*

Give five-minute, three-minute, one-minute, and 30-second warnings.

Allow students to showcase each team's creation to the class and have student volunteers return to their seats.



Wow, we have some amazing **cell** creators in this class.



REVIEW / SUMMARY

Today's CELL-ebriation has been extremely fun-filled and action packed. Throughout this class period, we have created a human figure that could not stand up, but with the help of toothpicks, or bones, was able to have life. Then we worked to draw a new human and give them bones and organs. Finally, we finished up our CELL-ebriation by creating a **cell**. It is very important that we all know how our body's function and what makes up each portion of our body. I hope even after today's class you will continue to CELL-ebriate the amazing things our bodies can do because of our bones, organs and **cells**.

Blow party horn when bell rings.

APPLICATION



Small Group Idea

Watch the YouTube video, 'The Human Body: Skeletal System (2nd Ed., Rev.).



One-on-One Idea

Together read, I Know My Cells Make Me Grow, by Kate Rowan ISBN: 0744572347.



PALS3.27.LG.ASSESS.A | EVALUATION ANSWER KEY

1. True
2. True
3. False
4. False
5. False

PALS3.27.LG.ASSESS.A

Name: _____

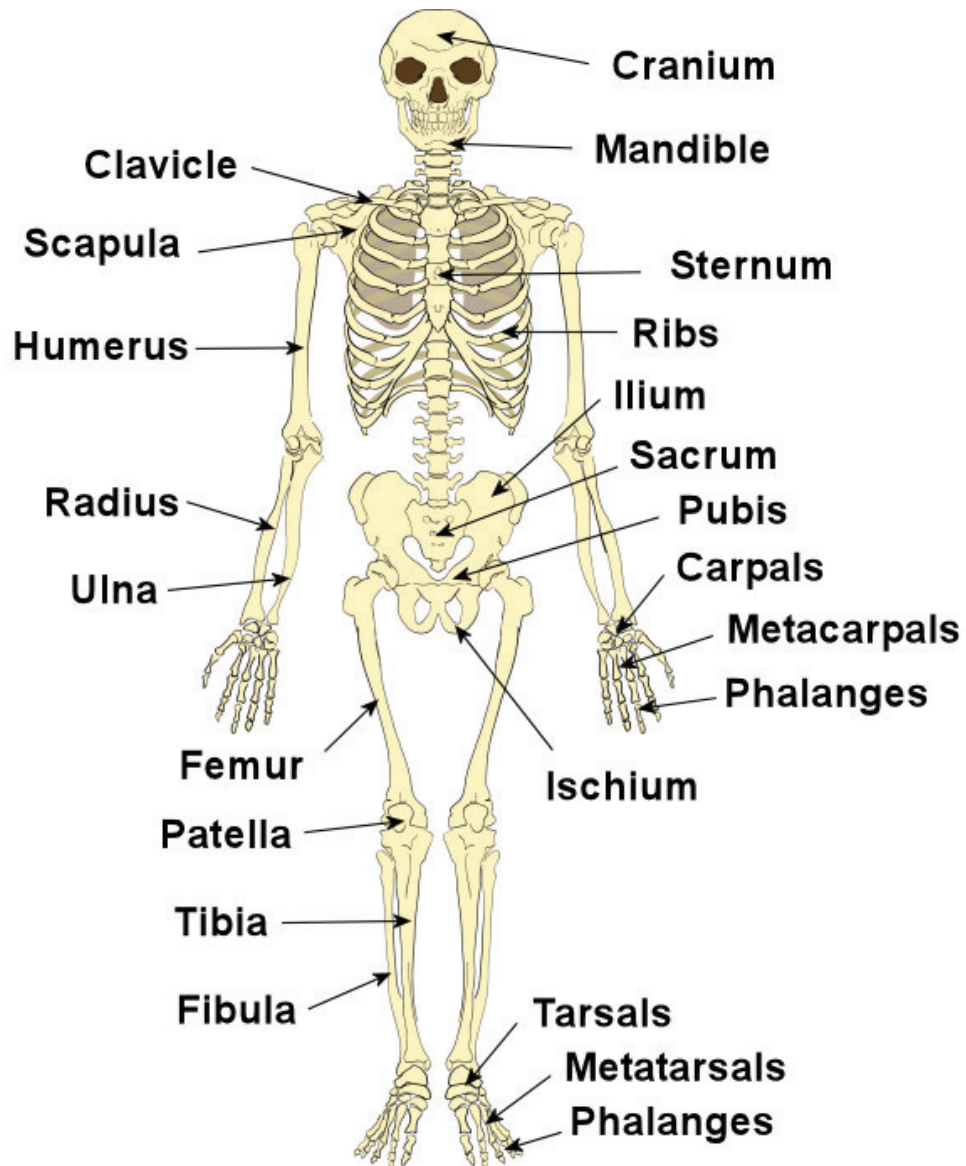
Directions: Please circle the correct answer or circle “A” for True or “B” for False

- | | | |
|-------|----|--|
| A - B | 1. | Cells contain a nucleus. |
| A - B | 2. | Organs work together to complete functions of the body. |
| A - B | 3. | A cell is a bone. |
| A - B | 4. | Bones are the basis for life in all living things. |
| A - B | 5. | The marshmallow was able to stand up without toothpicks. |

PALS3.27.LG.AS.A

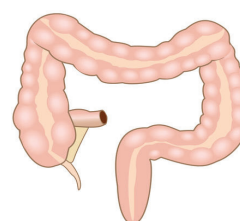
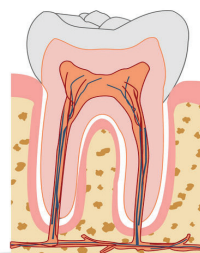
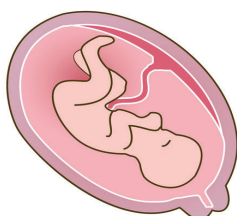
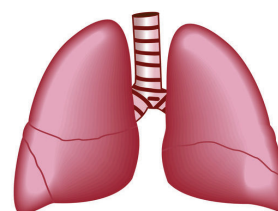
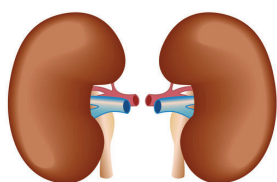
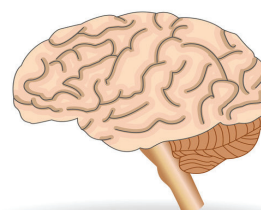
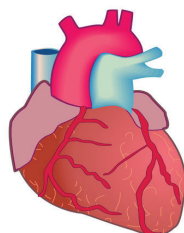
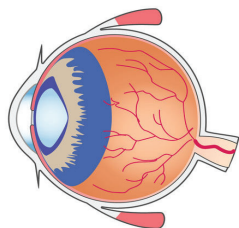
Teacher Resources/Guides for activity materials.

Bone Images for Objective 1:



PALS3.27.LG.AS.B

Organ Images for Objective 2:



PALS3.27.LG.AS.C

Cell Diagram for Objective 3:

