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| **Activity 1.2.2: Skeleton Scavenger Hunt** |

Introduction

Throughout the Human Body Systems course, you will explore the many functions of the skeletal system. Bones, cartilage, ligaments and tendons are all types of connective tissue that support your frame. The human skeleton is a wonder of design and engineering. It is incredibly strong and affords us great protection, but it is also incredibly light, giving us a great range of mobility. As you go on to explore the human body, knowledge of bone names will help you navigate the world of muscles and joints as well as other body systems.

Before you learn about the role bones play in identifying who you are, you must learn to identify the major bones of the body. As you worked to create the face of your Maniken®, you learned about the bones and bony landmarks of the skull. In this activity, you will work with a partner to identify key bones in the rest of the skeletal system and complete a series of tasks to “tour” the human skeleton.

Equipment

* Computer with Internet access
* Anatomy in Clay® Maniken®
* Body system graphic organizer (Skeletal View)
* Colored pencils
* Reference textbook (optional)

Procedure

1. Take out the Skeletal System graphic organizer that you started in Activity 1.2.1. You will work with a partner to complete a series of tasks in a Skeleton Scavenger Hunt.
2. Use reference textbooks, the websites listed below, or other reliable Internet sources you might find to explore the human skeletal system.

* Human Anatomy Online <http://www.innerbody.com/htm/body.html>
* Bones: Tissues and Types – The University of British Columbia <http://www.zoology.ubc.ca/~biomania/tutorial/bonesk/outline.htm>

1. Using your prior knowledge and information you find on the computer, label and identify the following bones. Continue the numbering system you started in Activity 1.2.1. Write the identifying number on the Maniken® in pencil and then write the corresponding number and label on your graphic organizer. Those marked with an asterisk (\*) should already be labeled.

* Skull (\*)
* Mandible (\*)
* Sternum
* Radius
* Phalanges
* Rib Cage
* Tibia
* Fibula
* Vertebral Column (cervical, thoracic, lumbar, sacral and coccyx)
* Scapula
* Carpals
* Metacarpals
* Pelvic Girdle
* Femur
* Tarsals
* Metatarsals
* Patella
* Clavicle
* Humerus
* Ulna

1. When you are finished labeling your Maniken® and you are comfortable with the location of each of the bones, trade models with another group.
2. Take out a sheet of paper and number the left hand side with the numbers the group has added in today’s activity.
3. From memory, write the appropriate bone name next to each number.
4. Give your paper to the other group and allow them to check your work. Work together to correct any mistakes and to correctly label the Maniken®.
5. Work with your partner to complete the following tasks/questions. You may need to do additional research. Refer to the websites listed in Step 2.

* Draw **sutures** on the skull.
* List the number of vertebrae in each section of the vertebral column. Find each section on your Maniken® and lightly shade each one using colored pencils. Use a different color for each section.
* Show the divisions of the three parts of the sternum on your Maniken® and list their names below.
* We refer to many bones of the human skeleton by common names rather than by the scientific term. Write an alternate name for the sternum, the scapula, the patella and the carpals. Sternum=Breast Bone, Scapula= Breast bone, Patella=Knee cap, Lower arm bone
* Color in the **floating ribs** lightly with your pencil.
* Draw a star on the lateral edge of the clavicle.
* How many bones do you have in one of your hands (including your wrist)? Explain your answer. There are 27 bones in one hand. 8 in the wrist.
* You did not label the smallest bones of the body on your model. Where are these bones found? The smallest bones are located in your ear. They are called the stapes, incas, and malleus.
* Which bone(s) of the human body differ in males and females? Label one with a square. The pelvis.
* The human skeleton is composed of two divisions- the axial skeleton and the appendicular skeleton. What defines the difference between these two? The appendiccular skeleton is on the sides or peripheral where as the axial structures are located towards the middle.
* On the list of bones in Step 3, write AP next to a bone if it is part of the appendicular skeleton and AX next to a bone if it is part of the axial skeleton.

1. When you have completed the scavenger hunt, go over your findings with your teacher.
2. Complete the conclusion questions.

Conclusion

1. Why are there sutures on the human skull? What does this tell you about the actual structure of the skull?

This tells that they grow and fuse together from birth.

1. Think about the structure and function of your backbone. Why do you think there are discs of cartilage between the bones in the vertebral column?

To cushion the plates from scraping against each other.

1. What is the difference between a true rib, a false rib and a floating rib?

True ribs attach with cartilage that is a direct bridge to the sternum. The false rib connects to one bridge that connects to the sternum. The floating rib doesn’t attach to anything.

1. A man was in a car accident and fractured cervical vertebrae, his femur and his 5th metatarsal. Explain his injuries to a “non-science” person.

He has fractured his spine, arm and part of his hand.

1. What are the main functions of the human skeletal system?

Support and protection.

1. Describe how differences in our skeleton can contribute to our identity.

They will determine our height, facial structure, and ability to do things.