



Unit I – Basics of Biology

Chapter 21 The Skeletal System

Lab # 21 The Bones of The Skeletal System

Note to Teacher: While students are engaged in their lab setting, have them listen to the music track to "Who Is Brother Bones" at the beginning of VSU Lecture 21, "Nervous & Skeletal Systems". Brain research indicates that when we listen to something different while we are learning something new, neurons will be connected which will help us remember the information more efficiently.

Reference: Gardner, H. (1991). The unschooled mind: How children think and how schools should teach. New York: Basic.

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Strategy

You will conduct a lab where you will use Professor Paul's Power Point Slides, pages two thru thirty three from VSU Lecture 21 "Nervous & Skeletal Systems". You will disarticulate a human skeletal model and put it back together with each bone labeled. You will work in partners.

Teacher's Note: In this lab exercise, pair up a left brain child with a right brain. This challenges the class to work in a real world scenario. This activity identifying the bones that make up the skeletal system should take approximately two class periods of 50 minutes. For some classes, it may take longer than two class periods.

Reference: McCarthy, B. (1987). The 4Mat system: Teaching to learning styles with right/left mode techniques. Barrington IL: EXCEL.

You will conduct the challenge activity at the end of the lab.

Materials

Note to Teacher: Most of the materials you will need for this lab, you can order them from Carolina Biological Supply.

Model of a Skeleton

Pages two thru thirty three from VSU Lecture 21 "Nervous & Skeletal Systems" Power Point Slides

Skeleton which has been disarticulated

Scotch Tape

100 plus strips of paper (1/4 inch wide by 2 inches long)

106 plus strips of paper (1/4 inch wide by 1 inch long)

Marking Pens (Blue or Black)

All Purpose Glue

At least 50 strips of very thin wire. The wire should be thick enough to hold the hand and feet bones together.

Chart of a Human Skeleton which has all bones labeled or Skeletal System Section of an Anatomy & Physiology Lab Manual or Textbook.



Score: _____

Name: _____

Date: _____

Class/Teacher: _____

School: _____

Procedure

- 1.) Pair up in teams of two as directed by your teacher.
- 2.) Collect bones in a box of a human skeleton that has been disarticulated. When you take all the bones apart, there should be two hundred and six bones.
- 3.) Using the Chart of the Human Skeleton, begin to put together the skeleton. Start with the bones of the skull and work your way down. With the skull, use all purpose glue to connect all the bones together. In certain places like the hyoid bone, you will need to use the thin wire to hold the bone together along with the cervical vertebrae that make up the neck region.
- 4.) Students, when you get stuck, get help from your teacher. In many instances, you and your teacher may have to get creative to have the skeleton to articulate to where the arms and legs can rotate.

Alternative Procedure

Note to Teacher: For some students, this activity may be overwhelming. You make the call. Here is an alternative procedure those students can conduct to obtain the basic objective of this lab.

- 1.) Have your students draw a Human Anatomy Model as a Chart. Have them draw both an anterior and posterior view. Make them label all bones. Have the chart laminated.

Analysis

- 1.) The Bones of the Human Skull consist of the _____ and _____ parietal bone, sphenoid bone, nasal bone, zygomatic bone, vomer bone, maxilla, and mandible.
- 2.) The bones of the ear are the Malleus (Hammer), Incus (Anvil), and _____ (_____).
- 3.) The Human Vertebral Column consists of seven Cervical Vertebrae, twelve Thoracic Vertebrae, and _____ Lumbar Vertebrae.
- 4.) The bones of the arm are the _____, Radius, and Ulna.
- 5.) The bones of the leg are the _____ (largest bone), tibia, and fibula.

Conclusion

- 1.) You should be able to answer all questions related to your Human Skelton Project.

Challenge

1.) You should be able to do a Power Point Presentation on the Human Skeleton. If you aspire to someday be an Orthopedic Surgeon or a Pain Management Specialist, here is your first opportunity to show how much you already know. Be able to discuss your findings from your Human Skeleton Project in such a way that you show you have internalized the information.