

# The Skeletal System

## Purpose

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Students will compare the structure and function of the mammalian skeletal systems of horses to humans and demonstrate the organization of the vertebrate skeletal system, showing the relationship of the structure of bones to their function.

## Materials

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*For the teacher:* horse skeleton pictures, *Atlas of Body Systems*, boxes, articulated human skeleton, (l.s & c.s. Compact bone optional)

*For each student:* lab worksheet, markers, writing utensils, paper.

*Optional:* computer with Internet access, HyperStudio, Inspiration

## Standards

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*Science 3:* 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.2.5, 3.4.1, 3.4.2, 3.4.5, 3.5.1, 3.5.2, 3.6.1, 3.6.2

*Science 4:* 4.1.4, 4.1.5, 4.2.1, 4.2.5, 4.2.6, 4.6.1, 4.6.2

*Science 5:* 5.1.1, 5.1.3, 5.1., 5.2.7, 5.2.7, 5.2.8, 5.4.8, 5.5.1, 5.5.6, 5.5.7

*Science 6:* 6.1.2, 6.1.5, 6.2.3, 6.2.4, 6.2.8, 6.4.11, 6.7.1

## Activity

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### A. Pre-Activity Discussion

1. Ask students, "What would happen if humans didn't have bones?"
2. Tell them that they would be floppy like a beanbag. Continue discussion.
3. Ask students, "Could you stand up? Could you walk?"
4. Explain to students that without bones you'd be just a puddle of skin with organs on the floor.
5. Give information: There are about 206 bones in the human body. Bones have the function of protecting and preserving the shape of soft tissues. The skeleton provides a framework for the muscles, it controls and directs internal pressure and provides stability anchoring points for other soft tissues.
6. Tell students that the lesson today is "The Skeleton System" and groups will be exploring the bones of the horse skull (cranium) and limbs, comparing them to the human bones.

Note: Teacher will sort out bones in a box for each group.

- a. Sort bones of the horse appendages (limbs): front and back legs
- b. Sort skull (cranium) of horse and skull (cranium) of human
- c. Sort bones of the human appendages (limbs) arms and legs
- d. Put bones in box for each student group

### B. Student Activity

1. Assign group of students (3-4 students per group).
2. Have each group work on a different box of sorted bones.