



LESSON 7

Lesson Plan Title: Bone Fractures		Instructor:
Suggested Total Time for Lesson (minutes): 35 minutes (1 day)		
Content Focus - What Will Students Learn? (Content Skill Sets)		
Health Sciences 0972.HE.0732.415 Identify types of fractures 0972.HE.0732.419 Define open and closed extremity injuries		
Materials and Resources- What do you need to assemble and prepare before the lesson?		
Materials: <ul style="list-style-type: none">• Head of celery• Knife• Cutting board (optional)• Small paper bags (optional)		Resources: <ul style="list-style-type: none">• Bone Fractures Images and Descriptions
Lesson Outline: What learning activities will your students do?		
Time	Sequence/Description of Learning Activity	
5 minutes	Get Started/Explain: Prior to the lesson: <ul style="list-style-type: none">• Gather enough celery for each student to have a minimum of one stalk.• Separate the celery into stalks and cut off the ends.• Cut off the rounded bottom and leafy top of a head of celery and separate the stalks• Provide students with the bone fracture images and descriptions located in resources Ask students if they have ever broken a bone or know someone who has. If so, ask if they know the type of break it was. Most people break at least two bones in their lifetime. What are the different ways bones break? Using celery stalks we will model many different ways that bones can fracture. Not all fractures are alike. There are many ways that bones break and many ways to describe the characteristics of a break.	

20 minutes

Discover/Engage/Practice:

Break celery stalks in different ways, like snapping with two hands, striking against a firm surface, twisting, or crushing, so that each break pattern that results is unique in some way. Use the images to see the variety of ways to describe a bone break and see if the celery stalks you broke match any of the images. If not, break a stalk to match one of the examples.

- **Orientation:** Not all fractures are alike. There are many ways that bones break and many ways to describe the characteristics of a break. In transverse fracture, the break is at a right angle to the length of a bone. In an oblique fracture, the break is diagonal to the length of the bone. In a spiral fracture, one part of the bone has been twisted.
- **Number of pieces:** when a bone breaks completely into two separate pieces, this is called a simple fracture. When a bone breaks into three or more pieces, this is called a comminuted fracture.
- **Displacement:** sometimes when a bone breaks, it moves from its original location in the body. Bones that have moved after a fracture are called displaced and bones that do not move are called non-displaced.
- **Closed/Open:** If the force that breaks a bone is large enough, part of the bone can pierce the skin. This is called an open or compound fracture. To model this, poke a celery stalk through a hole in a paper bag. Bones that do not pierce the skin are called closed fractures.
- **Completeness:** sometimes a bone breaks, but not completely into two pieces. This is called an incomplete fracture. If the bone breaks all the way into separate pieces, this is called a complete fracture.
- **Location:** A bone can break at various places. Most long bones have three regions. The rounded end, where one bone meets another at a joint is called the epiphysis. The long middle region is called the diaphysis. The area between the end and the middle, where the bone comes wider, is called metaphysis.
- **Special cases:** There are many kinds of bone fractures, both the common types and categories you saw, and others. Sometimes, multiple kinds of bone fractures happen together. Bone is living tissue and can heal itself, but often it needs help. Doctors take an X-ray picture of the fracture, then may need to set the bone by moving broken pieces back where they belong. Casts and splints keep bones in the right position, making it easier for bones to heal correctly.
- **What's going on?** There are many kinds of bone fractures. Sometimes, multiple kinds of bone fractures happen together. Bone is living tissue and can heal itself, but often it needs help. Doctors take an X-ray picture of the fracture, then may need to set the bone by moving broken pieces back where they belong. Casts and splints keep bones in the right position, making it easier for bones to heal correctly.
- **Healing bones:** Bones heal in several stages. First a blood clot forms around the break. Your immune system cleans the area. Next a soft collagen cover forms over the break in a few days. This cover eventually hardens, as cells that create new bone add minerals like calcium to the bone. Finally, special cells trim the hard cover down to the size of the original bone.
- Have students compare their celery stalk "fractures" with other students and discuss.

Check for Understanding/Summarize/Close:

- Were students able to correctly identify the different types of bone fractures based on the celery stick breaks?
- Can students differentiate between open and closed extremity fractures?

Modifications, Support, and Extensions (for those students with IEP)

Reflection- Did the students learn the content outlined in the lesson focus? Why or why not?