

Human Bodyworks

Introduction:

- Using this unit, girls will explore the various systems of the human body. They will become familiar with the structure of each body system as they learn the organs and tissues that make up each system. They will discover how the systems work together to achieve the common goal of sustaining an organism.

Age Level:

- Daisy, Brownie, Juniors, and Cadettes

Activity Summaries:

- Activity 1: X-Ray Vision
 - Scouts will examine human skeleton X-Rays. In groups, they will be given the opportunity to study each X-Ray and identify the images of the bones. As a group, they will then create a complete, 5-foot skeleton by arranging the X-rays properly. The activity concludes with the girls creating their own X-ray replicas.
- Activity 2: Skeletons
 - Girls will identify individual bones as they construct 20-cm plastic skeletons. They will then use the skeletons to discover and distinguish between the different types of joints.
- Activity 3: How Strong Are You?
 - Through simple exercise and actions, girls will learn more about their muscles. They will study the correlation between the skeletal and muscular systems, as well as the need for both systems to function together to produce movement. Muscle fatigue will also be addressed.
- Activity 4: Make a Move
 - Girls will construct a miniature model of the human arm, including the biceps brachii and triceps brachii muscles. The model will illustrate, in a simplified manner, the concept of agonist and antagonist muscles.
- Activity 5: Sweet Saliva
 - Girls will demonstrate how the enzyme amylase in saliva can convert starches into sugars. After chewing several pieces of an unsalted cracker, they will hold the crackers in their mouths. Within 5 minutes, they should detect a sweet taste.
- Activity 6: That's a Spicy Meatball
 - Scouts will investigate how meat tenderizer containing the enzyme papain will break down the protein in raw ground beef. This action is similar to the enzymatic digestion that occurs in the stomach.
- Activity 7: The Good, the Bad, and the Urinary

- Girls will model the kidney function, allowing them to simulate how the kidney filters blood.
- Activity 8: Take a Deep Breath
 - Girls will construct lung-function models using balloons and plastic bottles. They will then observe the physiology of respiration.
- Activity 9: Have a Heart
 - Scouts will construct a three-dimensional model of the heart, including the chambers, arteries, and veins.
- Activity 10: The Highway of Blood
 - Girls will demonstrate the concept of oxygenated and deoxygenated blood flowing through the body using red and blue threads on a human outline. They will also focus on the direction of blood flow in arteries and veins.
- Activity 11: Eye Wonder How That Works
 - Girls will model how the lens of the eye produces an inverted image on the retina, and measure the focal length of their eye model.
- Activity 12: Do You See What I Hear?
 - Girls build a replica of the human eardrum and demonstrate how sound waves from a radio, tape player, or CD player can make the artificial eardrum vibrate, causing salt grains to “dance” to musical vibrations.