

☐ **Activity 1: Homeostasis**

Many different organs and systems are involved in maintaining homeostasis. If there is a disruption in one of these systems, it can cause an imbalance in the body. This imbalance can lead to a disease like diabetes, an illness like pneumonia, or even death in extreme cases. In this activity you will match elements of homeostasis to the organs involved. NOTE: The hypothalamus is sometimes called the "homeostasis organ." Also, remember that the endocrine system includes the pituitary gland, which helps the body regulate water availability and growth hormones.

First read pages 21-23 in *The Concise Human Body Book*. Use the reading and the information found at the following web links to complete the "Homeostasis" page.

Homeostasis
www.movingbeyondthepage.com/link/8933/ Use the information from these sources to help you complete the "Homeostasis" activity page.
The Brain
www.movingbeyondthepage.com/link/9023/ Use this link to read about the hypothalamus.
What is Homeostasis
www.movingbeyondthepage.com/link/9024/

HOMEOSTASIS

ORGANS	Identify what each organ regulates in order to maintain homeostasis in the body.	Identify the human body system that each organ and regulatory process belongs to.
hypothalamus — 		
pituitary gland 		
heart 		
lungs 		
liver 		
muscle 		
kidney 		
pancreas 		

Lesson 12: Balance in the Body

Getting Started

? Big Ideas

- What systems do you think are involved in maintaining a stable temperature?
- How do the different systems of the body work to ensure homeostasis?



Facts and Definitions

- **Homeostasis** is the process of ensuring internal balance in the body systems. It can also describe the state of being in balance or equilibrium.
- **Thermoregulation** is the process of maintaining a stable temperature.
- **Feedback mechanisms** are ways the body signals imbalances and the restoration of homeostasis.



Skills

- Evaluate how systems in the human body help regulate the internal environment. (S)
- Analyze how an imbalance in homeostasis may result from a disruption in any human system. (S)

Introducing the Lesson

Your child will learn how the different body systems work in concert to maintain homeostasis or equilibrium within the body.

Activities

Activity 1: Homeostasis

Your child learned about different means of maintaining homeostasis and matched them with the organs involved and the body systems they are part of.

Answer Key:

Your child's answers may differ somewhat. As long as the main organs and systems are noted, that is fine for this activity.

- Hypothalamus: regulates blood pressure, temperature, blood glucose levels, water availability, carbon dioxide: belongs to the endocrine system
- Pituitary gland: regulates water availability: belongs to the endocrine system
- Heart: regulates blood pressure: belongs to the cardiovascular and circulatory systems
- Lungs: regulates carbon dioxide: belongs to the respiratory system
- Liver: regulates temperature: belongs to the digestive system
- Muscle: regulates temperature and blood glucose levels: belongs to the cardiovascular system
- Kidney: regulates blood pressure and water availability: belongs to the urinary system
- Pancreas: regulates blood glucose levels: belongs to the endocrine and digestive systems