Endocrine System

Activities for Students

Note: The following activities are written in language appropriate for sharing with your students.

Glands on Strike!

Objectives:

Students will:

- Gain an understanding of the function of each gland in the endocrine system

Materials:

- Computer with Internet access
- "Glands on Strike!" handout

Class Time:

- 40 minutes

Activity:

(Note to instructor: Students may complete this activity in groups or individually.)

What do we want? APPRECIATION! When do we want it? NOW!

The eight glands of endocrine system are feeling overworked and underappreciated. They do so much to help ensure that so many body processes run smoothly, but they don't get so much as a day off, let alone a measly thank you.

These glands have had enough. Tomorrow, they're going on strike. Using the Glands on Strike! handout, write a list of health problems that would occur if your glands decided to stop working.

Extension:

Of course, glands don't really go on strike, but it is possible for them not to work properly. Take the pancreas, for example. If it doesn't produce enough of the hormone insulin, the result is type 1 diabetes, one of the most common disorders of the endocrine system. Research more about type 1 diabetes, then write a brief report about the disease, including its signs and symptoms and how doctors treat it.

KidsHealth in the Classroom

Grades 6 to 8 • Human Body Series

Endocrine System

The Gland Band

Objectives:

Students will:

- Create a song that will demonstrate their knowledge of the endocrine system

Materials:

- Computer with Internet access
- Paper or pen and paper, or word processing software

Class Time:

- 90 minutes

Activity:

The endocrine system is an incredibly efficient, well-oiled machine. Its eight glands each have a unique job to do. It releases hormones that are so "smart," they only target specific receptors. And it even has a built-in system for sensing the precise levels of hormones in the blood so it knows whether to increase or decrease hormone production. If the endocrine system doesn't deserve a musical tribute, we're not sure what does!

Let's break up into small groups, and then each group will write one stanza of a song celebrating one amazing detail about the endocrine system. You can write about a specific gland or hormone, or about a function like target cell receptors or the negative feedback system. It may be easiest to choose a tune everyone knows, like Yankee Doodle Dandy or Take Me Out to the Ballgame, but a pop or rap song is fine too. Be as creative as you like, but remember to show what you know!

Extensions:

1. Create a music video from the song.

2. Have students complete the How the Body Works activity: Endocrine System Word Find (KidsHealth.org/kid/htbw/_bfs_ESwordsearch.html).

Reproducible Materials

Handout: Glands on Strike!
KidsHealth.org/classroom/6to8/body/systems/endocrine_handout1.pdf

Quiz: Endocrine System
KidsHealth.org/classroom/6to8/body/systems/endocrine_quiz.pdf

Answer Key: Endocrine System
KidsHealth.org/classroom/6to8/body/systems/endocrine_quiz_answers.pdf

KidsHealth in the Classroom

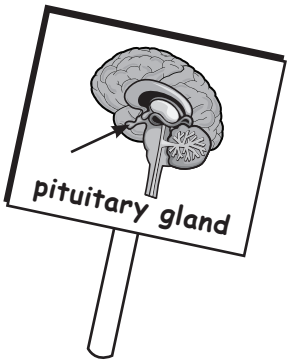
Human Body Series

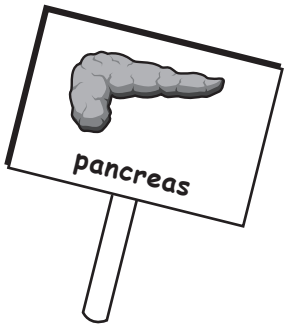
Endocrine System

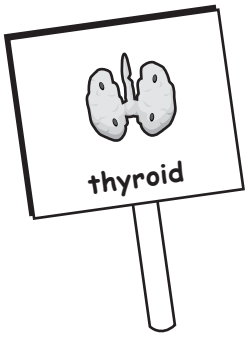
Name: **Date:**

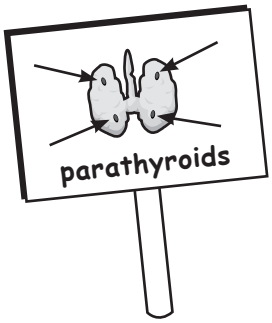
Glands on Strike!

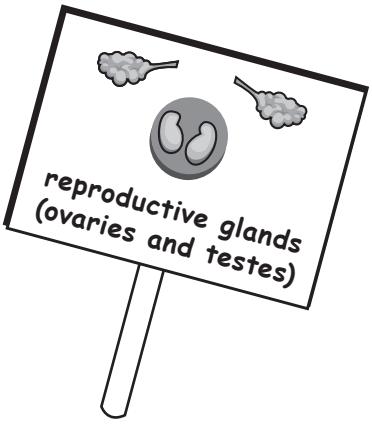
Instructions: Write a list of health problems that might occur if your glands decided to go on strike.











KidsHealth in the Classroom

Human Body Series

Endocrine System

Name: **Date:**

Quiz

Instructions: Answer each question.

1. List four functions of the endocrine system.

   _____
   _____
   _____
   _____

2. In general, the endocrine system is in charge of body processes that happen slowly, such as cell growth. Faster processes like breathing and body movement are controlled by the:
   a. digestive system
   b. respiratory system
   c. nervous system
   d. cardiovascular system

3. _____ are chemical messengers that transfer information and instructions from one set of cells to another.

4. Endocrine glands release more than _____ major hormones directly into the bloodstream.
   a. 20
   b. 100
   c. 200
   d. 1,000

5. The brain contains these three glands: _____

6. The pineal gland secretes:
   a. melatonin
   b. oxytocin
   c. insulin
   d. thyroxine

7. True or false: The thyroid gland is involved in metabolism, the process by which the fuel in the food we eat is converted into cellular energy.

8. A problem with the pancreas's production of insulin can lead to a condition called _____.

9. Once a hormone is secreted, it travels from the endocrine gland that produced it through the bloodstream to the cells designed to receive its message. These cells are called _____.

10. If the pituitary glands release hormones that stimulate the gonads to produce sex hormones too early, some kids may begin to go through puberty at a very young age. This is called:
    a. hyperthyroidism
    b. precocious puberty
    c. gigantism
    d. hypothyroidism

Quiz Answer Key

1. List four functions of the endocrine system.
   Any four of the following: regulating mood, growth and development; tissue function; the fight or flight response; metabolism; blood glucose levels; sexual function and reproductive processes.

2. In general, the endocrine system is in charge of body processes that happen slowly, such as cell growth. Faster processes like breathing and body movement are controlled by the:
   a. digestive system
   b. respiratory system
   c. *nervous system*
   d. cardiovascular system

3. *Hormones* are chemical messengers that transfer information and instructions from one set of cells to another.

4. Endocrine glands release more than *20* major hormones directly into the bloodstream.
   a. *20*
   b. 100
   c. 200
   d. 1,000

5. The brain contains these three glands: *pituitary, hypothalamus, and pineal gland (or pineal body)*

6. The pineal gland secretes:
   a. *melatonin*
   b. oxytocin
   c. insulin
   d. thyroxine

7. True or false: The thyroid gland is involved in metabolism, the process by which the fuel in the food we eat is converted into cellular energy.

8. A problem with the pancreas's production of insulin can lead to a condition called *diabetes*.

9. Once a hormone is secreted, it travels from the endocrine gland that produced it through the bloodstream to the cells designed to receive its message. These cells are called *target cells*.

10. If the pituitary glands release hormones that stimulate the gonads to produce sex hormones too early, some kids may begin to go through puberty at a very young age. This is called:
    a. hyperthyroidism
    b. *precocious puberty*
    c. gigantism
    d. hypothyroidism