

CBL BIOLOGY: LIFE SCIENCE OPTION
BSCS Green Version 10th edition
Biology An Ecological Approach
Lesson Plan for Week 8, Day 1



Outcomes for Today

Standards Focus: 1i 9bcdehi

PREPARE

1. Background knowledge necessary for today's reading.

So many of the activities we do as humans are second nature, which is to say we don't think about the processes and functions that are part of everyday life. The simple act of walking down a path involves a complex coordination of many bodily systems. To begin generating interest and assessing prior knowledge, consider the following discussion prompts:

- Why can you walk?
- What makes this possible?
- What systems are involved?
- What happens if one of these systems experiences problems?
- Do you have to think about walking?
- What is voluntary and involuntary?

Moving students into thinking and questioning can help them to think like the early scientists.

2. Vocabulary Word Wall.

Introduce five important, useful words from today's reading.

coordination

cardiac

body system

creatine

phosphate

- Show, say, explain, expand, explode or buzz about the word briefly.
- Show, say and define the word quickly and add to the word wall.

READ

3. Review the vocabulary and concepts previously covered in this chapter.

Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- Point to the concept chart as you quickly review it.

In order for the body to function, systems must be stable and balanced (homeostasis).

Many systems help with this process. They are:

The circulatory and lymphatic system (heart, arteries, and veins)

The immune system

The respiratory system (lungs, etc.)

The excretory system (kidneys, etc.)

4. Read directions for investigation/activity.

5. Read text. Ch 17, The Human Animal: Coordination, Text Introduction and Section 17.1, pp. 482-485

- Shared Reading RRP: Read, React, Predict every 2-3 pages
 Tape Partner Choral Silent Round Robin Reading

| Setting | Characters | Pages |
|----------------|------------------|-------|
| human body | skeletal muscle | 484 |
| | smooth muscle | 484 |
| muscle systems | cardiac muscle | |
| | actin and myosin | 485 |

RESPOND

6. Fix the facts. Clarify what's important.

Discuss the reading and add 3-5 events to the billboard.

- Discuss the text; clarify the most important facts, concepts, ideas and vocabulary.
- Decide on the 3-5 most important **concepts** and post these on the billboard.

Students might mention:

I never knew there were three types of muscle. I thought muscle was muscle. Muscle movement can be controlled either by our consciousness (voluntary) or on its own (involuntary).

Nerves are like electrical wires or fiber optics which continuously send signals to the muscles.

The ATP – ADP cycle is an important part of muscle movement.

7. Post information on the billboard. Add new information to ongoing class projects on the wall.

- New concept information can be added to the billboard.
- An answer can be added to a question from the KWL Chart.
- New information can be added to ongoing charts and investigations.

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity:

Muscle Identification and Movement

This is a very good website to help students learn about their muscle systems. It has an interactive mode in which students can select various muscles and gain detailed information.

<http://www.innerbody.com/image/musfov.html>

Procedure

Assign small groups of students various muscles in the body. For example, Team 1 could be the arm muscles.

Activity

After students research their muscle group with the aid of this resource link, direct them to present their findings to the class with a little demonstration.

Note: If you have access to an articulated skeleton model, this would be very helpful.

Discussion

After each group has presented, ask students how they would adapt to living if their particular muscle group was somehow inoperable.

This additional web site is also worth exploring:

<http://www.purchon.com/biology/muscles.htm>

Other possible activities for a class group or individual
Bookmark Open Mind Portrait g6 Graphic Organizer
g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
Poster Ad Map Retelling Reader's Theatre Cartoon Rap

Key Questions

What body systems are utilized by a skateboarder completing a jump?
 What are the three types of muscle groups? Give an example and location of each.
 Where does the energy needed for muscle movement come from?
 What imitates and controls muscle movement?

Remember to ask literal structural idea craft author literature life
evaluate and inference questions every day.

Key Paragraph

Humans and vertebrates have three types of muscles. Each of these types has a different structure and function. Skeletal muscle moves the bones of the skeleton in response to conscious control. Because it is controlled by the individual, it is called voluntary muscle. Each skeletal muscle is controlled by muscle tissue, which is made up of numerous individual cells acting together. Skeletal muscle is used in making adjustments to the external environment, such as raising your arm to swat an annoying mosquito.

EXTEND

11. Prompt every student to write a short product tied to today's reading.

The "Arnold Syndrome"

After a short introductory discussion, ask students to write on this topic:
 How do the media, with images of musclebound men (and women), contribute to our belief system of what it means to be fit or even "buff"?

12. Close with a short summary.

Extend the reading to the students' lives or to the world.

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Biology An Ecological Approach
Lesson Plan for Week 8, Day 2



Outcomes for Today

Standards Focus: 1i 9bcdehi

PREPARE

1. Background knowledge necessary for today's reading.

Physical fitness has become a big business in this country as lifestyles have become increasingly sedentary. The news media have been keenly aware of such conditions as childhood obesity as well as related topics such as nutrition. Begin the interest generation process and assessment of attitudes by asking students several questions such as:

- What does fitness mean to you?
- Ask them to give examples.
- Why be fit?
- Who is fit?

This lesson addresses how muscles, bones, and joints work together so that we humans can move about and perform tasks requiring all manner of movement. It is something that is rarely given a second thought until a system in the body fails.

2. Vocabulary Word Wall.

Introduce five important, useful words from today's reading.

vertebrate cartilage ligament joint muscle tone

- Show, say, explain, expand, explode or buzz about the word briefly.
- Show, say and define the word quickly and add to the word wall.

READ

3. Review the vocabulary and concepts previously covered in this chapter.

Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- Point to the concept chart as you quickly review it.

Muscles are responsible for movement in the body.

There are three groups of muscles: skeletal, smooth, and cardiac.

The ATP – ADP cycle produces the energy necessary for muscle movement.

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4. Read directions for investigation/activity.

5. Read text. Ch 17, The Human Animal: Coordination, Text Section 17.2-17.3, pp. 486-488

- Shared Reading RRP: Read, React, Predict every 2-3 pages
 Tape Partner Choral Silent Round Robin Reading

| Setting | Characters | Pages |
|------------|---------------------------------------|-------|
| human body | muscles, bones, joints, and cartilage | 486 |

RESPOND

6. Fix the facts. Clarify what's important.

Discuss the reading and add 3-5 events to the billboard.

- Discuss the text; clarify the most important facts, concepts, ideas and vocabulary.
- Decide on the 3-5 most important **concepts** and post these on the billboard.

Students might mention:

Bodily movement is possible because muscles, bones, joints, and cartilage along with the nervous system work together to make it happen.

A joint is a place where two or more different bones come together and there is movement.

Muscles attach to bones by tendons while ligaments attach bones to other bones.

A muscle is attached to a bone like a rope to a wagon. It can be pulled but not pushed.

Since muscles can't be pushed, another set of muscles must pull the flexed muscle back to its original position.

Fitness is more than losing weight and building muscles.

Cardiovascular fitness means you have a healthy heart and blood system.

7. Post information on the billboard. Add new information to ongoing class projects on the wall.

- New concept information can be added to the billboard.
- An answer can be added to a question from the KWL Chart.
- New information can be added to ongoing charts and investigations.

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity:

Muscles in Motion

Description of activity

Students will understand the following:

- Different muscles are used to perform different body motions.
- Muscles in the upper arm called *biceps* are used to flex the arm.
- Muscles in the upper arm called *triceps* are used to extend the arm.

Materials

The following materials should be distributed to each group:

Five- or six-pound dumbbell

Procedure

- Ask the students to flex their arms by bending their lower arms up from the elbow. Then have them extend their arms by raising their arms straight above their heads. Make sure students understand the terms *flex* and *extend*.
- Ask the students if they know which muscles they used to perform each action. If they are unfamiliar with the terms *biceps* (flex) and *triceps* (extend), introduce the terms now.
- Ask the students to vote on whether the following statement is true: Most people's biceps are stronger than their triceps.
- Tell students they are going to perform an experiment that will test the statement.
- Divide the class into groups, giving each a dumbbell to work with.
- Instruct group members to take turns doing the following exercise: Standing with your back against a wall, hold the dumbbell in your dominant hand while letting the dumbbell hang at your side with your arm fully extended downward. Raise the dumbbell by bending your arm from the elbow toward your face as far as you can. Lower the dumbbell by fully extending the arm downward.
- Have each student repeat the exercise until she or he feels tired. Group members should record the number of repetitions for each student.
- Next, have students take turns doing the following: Standing with your back against a wall, hold the dumbbell in your dominant hand, letting the dumbbell hang at your side with your arm fully extended downward. Bend your arm at the elbow, bringing the dumbbell up toward your face and holding the dumbbell next

to your ear on the same side of the body. Rotate your wrist so your palm is facing away from you. Now push the dumbbell straight up into the air until the arm is fully extended; then return the dumbbell so that it is next to your ear again.

- Have each student repeat the exercise until she or he feels tired. Group members should record the number of repetitions for each student.
- Compute class averages for the “flex” and “extend” exercises.
- Discuss whether the results of the test agree with the vote taken prior to the experiment.
- Continue the discussion by asking students what makes one muscle stronger than another.
- Have each student describe the experiment in a written paragraph, accompanied by a graph representing the results for his or her group.

Discussion

- What makes a person disabled? Is it the limitations of the person or the artificial barriers created in our environment?
- Will machines ever be built that can move and react just like a person? Should they be built?
- For what purposes could people use a computer that simulates human movement? Categorize as positive or negative uses.

Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer
g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
Poster Ad Map Retelling Reader's Theatre Cartoon Rap

Key Questions

What are the similarities between tendons and ligaments?

Describe how bone growth occurs.

Draw a diagram of the human arm showing muscle extensors.

What is cardiovascular fitness?

How can you tell if someone is fit? List the signs.

Remember to ask literal structural idea craft author literature life
evaluate and inference questions every day

Key Paragraph

Vertebrate movement is accomplished through the coordinated interaction of the bones of the animal's skeleton, the joints between the bones, and the contraction of muscles that span the joints. The skeleton, consisting of numerous bones and cartilage, is the internal framework of the vertebrate body. Most bones develop first as cartilage. The cartilage is gradually replaced by bone through growth and further development. The hardness of the bone results, in part, from deposits of calcium and magnesium compounds. In certain places of the body (for example, in a portion of the rib cage and the ends of bones), the cartilage is retained for greater flexibility.

EXTEND

11. Prompt every student to write a short product tied to today's reading.

Am I fit?

Ask students to write a short honest self assessment of their fitness.

12. Close with a short summary.

Extend the reading to the students' lives or to the world.

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Lesson Plan for Week 8, Day 3



Outcomes for Today

Standards Focus: 1i 9bcdehi

PREPARE

1. Background knowledge necessary for today's reading.

Most students have a general concept of nerves and the nervous system. They realize that nerves are somewhat akin to “electrical wires” in the body. We know that it is much more complex than this simple idea. Begin with an introduction into the world of brain studies. Recent research on the human brain, behavior, and learning is adding new information to the knowledge base at a rapid pace. By the time you read this, new discoveries on the brain, learning, and related areas will have been made. Try and impress upon students that this is a vast new area of scientific research.

2. Vocabulary Word Wall.

Introduce five important, useful words from today's reading.

stimulus axon dendrite synapse receptor

- Show, say, explain, expand, explode or buzz about the word briefly.
- Show, say and define the word quickly and add to the word wall.

READ

3. Review the vocabulary and concepts previously covered in this chapter.

Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- Point to the concept chart as you quickly review it.

In order for us humans to move about, several systems must work together.

They are:

The muscles
 The skeleton

Tendons and ligaments

Muscle movement is initiated by signals through the nervous system.

Joints are locations (gaps) between bones to allow movement.

Some muscle movement is voluntary (arms and legs) and some is involuntary (heart).

4. Read directions for investigation/activity.

5. Read text. Ch 17, The Human Animal: Coordination, Text Section 17.4-17.6, pp. 488-494

Shared Reading RRP: Read, React, Predict every 2-3 pages

Tape Partner Choral Silent Round Robin Reading

| Setting | Characters | Pages |
|-----------------|----------------------------|-------|
| the human body | Individual neurons | 488 |
| the human brain | left and right hemispheres | 490 |
| | cerebrum | 490 |
| | cerebellum | 491 |
| | brain stem | 491 |

RESPOND

6. Fix the facts. Clarify what's important.

Discuss the reading and add 3-5 events to the billboard.

- Discuss the text; clarify the most important facts, concepts, ideas and vocabulary.
- Decide on the 3-5 most important **concepts** and post these on the billboard.

Students might mention:

The reason we can make rapid responses to situations is due to our nervous system.

A stimulus is a type of signal picked up by our nervous system and transmitted to the brain.

Neurons are cells with long tentacles that transmit signals throughout parts of the body.

A bunch of neurons working together in a bundle is a nerve.

The brain is the center of learning and memory.

The brain also controls most of the nervous system.

7. Post information on the billboard. Add new information to ongoing class projects on the wall.

- New concept information can be added to the billboard.
- An answer can be added to a question from the KWL Chart.

- New information can be added to ongoing charts and investigations.

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity:

Parts of the Brain

Refer to **Transparency 39** as you review parts and functions of the brain with your students.

Brief Description of Activity

Following an introductory explanation and student discussion about the right and left hemispheres of the brain, students determine whether they are right-brain dominant or left-brain dominant -- and what that means.

Objectives

Students learn that different regions of the brain are responsible for specific tasks and recognize that brain dominance helps determine personality and behavior.

Keywords

human brain, learning, behavior, personality

Procedure

Use the text, on-line, and print resources to provide students with a detailed examination of the two hemispheres of the human brain. Information should cover R-mode and L-mode characteristics and behaviors and discuss how the ways people process knowledge affects personality development. Following the lecture, students should be able to answer the following questions:

- What are the key characteristics of L-mode and R-mode sides of the brain?
- What type of stimuli do typical right-brain people and left-brain people respond to, and how does that affect personality and behavior?
- How can knowing whether he or she is more right-brain dominant or left-brain dominant help a person learn and live?

Activity

Instruct students to take this quiz.

Right Brain/Left Brain Dominance Quiz

1. Are you better at recognizing and remembering names or faces?
Circle one: Names Faces
2. Are you an organized individual or a spontaneous individual?
Circle one: Organized Spontaneous
3. Do you like realistic stories or stories that deal in fantasy?
Circle one: Realistic Fantasy
4. Do you problem-solve using logic or intuition?
Circle one: Logic Intuition
5. Do you like well-structured assignments or open-ended assignments?
Circle one: Well-structured Open-ended
6. Do you remember things easily through language or through pictures?
Circle one: Language Pictures
7. Do you consider yourself to be very creative or not creative?
Circle one: Creative Not creative
8. Do you often produce humorous thoughts and ideas or serious thoughts and ideas?
Circle one: Humorous Serious
9. Do you read for details and facts or for main ideas and overviews?
Circle one: Details/facts Main
idea/overview
10. Do you learn through systematic plans or through exploration?
Circle one: Systematic plans Exploration

Now use the key to help you understand whether you are right-brain dominant or left-brain dominant.

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Discussion

Discuss answers and explain what their brain dominance means:

1. Faces = right-brain behavior. Names = left-brain behavior.
2. Spontaneous = right-brain behavior. Organized = left-brain behavior.

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3. Fantasy = right-brain behavior. Realistic = left-brain behavior.
4. Intuition = right-brain behavior. Logic = left-brain behavior.
5. Open-ended = right-brain behavior. Well-structured = left-brain behavior.
6. Pictures = right-brain behavior. Language = left-brain behavior.
7. Creative = right-brain behavior. Not creative = left brain behavior.
8. Humorous = right-brain behavior. Serious = left-brain behavior.
9. Main idea and overview = right-brain behavior. Details and facts = left-brain behavior.
10. Exploration = right-brain behavior. Systematic plans = left-brain behavior.

Total Score: _____ Right-Brain Responses _____ Left-Brain Responses

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Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer
 g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
 Poster Ad Map Retelling Reader's Theatre Cartoon Rap

Key Questions

What does a stimulus have to do with the nervous system?

Mix and Match 1

- | | |
|----------------|--|
| dendrite _____ | A. special neurons that receive impulses |
| axon _____ | B. the space where neurons meet |
| nerve _____ | C. transmits impulses away from the cell |
| synapse _____ | D. transmits impulses towards the cell |
| receptor _____ | E. bundle of neurons |

Mix and Match 2

- | | |
|------------------------|--|
| cerebrum _____ | A. music and art part of the brain |
| left hemisphere _____ | B. coordinates movement |
| right hemisphere _____ | C. center of personality, learning, memory |
| cerebellum _____ | D. coordinates heart rate, breathing |
| brain stem _____ | E. coordinates movement |

Remember to ask literal structural idea craft author literature life
 evaluate and inference questions every day.

Key Paragraph

An animal's rapid adjustment to the environment is brought about primarily by the nervous system. These adjustments or movements are brought about by an internal or external signal known as a stimulus. The stimulus is carried through the nervous system by cells known as neurons. Each neuron has an enlarged region, the cell body that contains the nucleus and other organelles. Most cell bodies are located in the brain or spinal cord. Two types of fibers, dendrites and axons, extend from the cell body. Dendrites receive stimuli and conduct impulses toward the cell body. For many neurons, a single neuron carries impulses away from the cell body. A nerve is a bundle of fibers surrounded by a sheath of connective tissue. In humans, these fibers may be more than one meter long.

EXTEND

11. Prompt every student to write a short product tied to today's reading.

You get on my nerves!

We have heard this statement many times. Instruct students to write a short paragraph with personal comments on this statement. How might their comments be non-scientific from what we know about the nervous system?

12. Close with a short summary.

Extend the reading to the students' lives or to the world.

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Biology An Ecological Approach
Lesson Plan for Week 8, Day 4



Outcomes for Today

Standards Focus: 1i 9bcdehi

PREPARE

1. Background knowledge necessary for today's reading.

How often have we heard this statement (usually in reference to women and adolescents), "It must be hormones." This is usually a statement in response to some sort of behavior. Ask students to think about the statement. What does this mean anyway? Ask them to recall the last time they have been "under the influence" - of hormones, that is. This can build interest in this lesson on the endocrine system.

2. Vocabulary Word Wall.

Introduce five important, useful words from today's reading.

endocrine glands

hormone

ductless glands

fight or flight

- Show, say, explain, expand, explode or buzz about the word briefly.
- Show, say and define the word quickly and add to the word wall.

READ

3. Review the vocabulary and concepts previously covered in this chapter.

Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- Point to the concept chart as you quickly review it.

In order for the human body to maintain balance (physically and chemically), several systems have developed and work together towards this end.

The muscles provide for movement.

Bones and cartilage provide support.

Ligaments connect bones while tendons connect muscles to bones.

Bones begin development as cartilage and later harden.

The nervous system controls these systems. It consists of the brain, nerves, and individual cells (neurons).

The nervous system is the key communication and transmission system for movement and coordination.

Receptors in the nervous system receive stimuli and transmit these messages throughout the body.

4. Read directions for investigation/activity.

5. Read text. Ch 17, The Human Animal: Coordination, Text Section 17.7-17.9, pp. 494-500

- Shared Reading RRP: Read, React, Predict every 2-3 pages
 Tape Partner Choral Silent Round Robin Reading

| Setting | Characters | Pages |
|------------------------------------|---|-------|
| male and female bodies (head area) | pineal gland hypothalamus pituitary gland | 495 |
| male and female upper body | parathyroid glands thyroid gland thymus gland | 495 |
| male and female mid-body | adrenal glands pancreas | 495 |
| male body | testes | 495 |
| female body | ovaries | 495 |

RESPOND

6. Fix the facts. Clarify what's important.

Discuss the reading and add 3-5 events to the billboard.

- Discuss the text; clarify the most important facts, concepts, ideas and vocabulary.
- Decide on the 3-5 most important **concepts** and post these on the billboard.

Students might mention:

Endocrine glands produce hormones.

The human body's response to hormones is much slower than responses reacting to nervous impulses.

Hormones can be effective from short to long periods of time.

Low blood sugar is known as hypoglycemia. This can cause a person to have low energy or even pass out.

Diabetes is another condition caused by messed up hormones.

The pituitary is the master gland and it controls the other endocrine glands in the body.

The thyroid gland helps control the level of bodily activity.

Chemicals from the adrenal glands produce a "rush" or mental alertness. This readies us for the "fight or flight" syndrome.

7. Post information on the billboard. Add new information to ongoing class projects on the wall.

- New concept information can be added to the billboard.
- An answer can be added to a question from the KWL Chart.
- New information can be added to ongoing charts and investigations.

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity:

Hormones and Me

So what does all this endocrine gland stuff have to do with your individual students? Review the function of the various endocrine glands with students. Refer to Figure 17.13 on page 495 of the text.

Materials Necessary

- Poster paper
- Marking pens
- Magazines for pictures

Procedure

Direct students to draw a large (poster paper) outline (depiction) of themselves. Have them draw and name the various endocrine glands within the proper locations of their outline drawing.

Activity

Using magazine illustrations have students find pictures or illustrations that represent the effects of the various glands. For example, the adrenal glands might be represented by an illustration of a person running away from a police officer or large bear ("fight or flight"). Connect this illustration by a line or arrow to the adrenal glands in the body. When finished, have students share their projects and then post them for future reference.

Discussion

Follow up discussion comparing student work could be used as an effective review.

Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer
 g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
 Poster Ad Map Retelling Reader's Theatre Cartoon Rap

Key Questions

How are hormones transported through the body?

What is meant by the term "chemical messenger"?

How long are the effects of hormones strong in the body?

What is diabetes and how does a person with diabetes adapt and cope?

Select two endocrine glands and write a little summary of the function of each.

What is meant by the fight or flight syndrome?

Remember to ask literal structural idea craft author literature life evaluate and inference questions every day.

Key Paragraph

Although hormones are secreted directly into the bloodstream and carried all through the body, they produce their effects only on specific organs, such as the ovaries or testes of the reproductive system. This specific action is possible because of the cells of the target organs have receptors that fit the shape of the particular hormone. When molecules of the hormone reach the cells of the target organ, they bind to the receptors much in the way an antigen binds to an antibody. This binding begins a series of events that cause the target organ to take particular actions.

EXTEND

11. Prompt every student to write a short product tied to today's reading.

Fight or Flight

Ask students to write a short paragraph to the following prompt:

Think of a time when you had to make a split-second "fight or flight" decision. What did you do? Would you do anything differently if this same situation occurred again? Why or why not?

12. Close with a short summary.

Extend the reading to the students' lives or to the world.

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Lesson Plan for Week 8, Day 5



Outcomes for Today

Standards Focus: 1i 9bcdehi

PREPARE

1. Background knowledge necessary for today's reading.

Stress has recently become a buzzword in many circles. Perhaps this is due to the conditions of modern society, the media and increased pressure in institutions such as schools. Certainly world and local conditions contribute to stress-related conversations just about everywhere. Begin building interest by asking students to share their experiences with stress. List examples of specific stressors and post these on the classroom wall. Work with students to develop some metaphors on the subject of stress. These will make good relatable images to follow.

2. Vocabulary Word Wall.

Introduce five important, useful words from today's reading.

stress tolerance addiction insomnia stressors

- Show, say, explain, expand, explode or buzz about the word briefly.
- Show, say and define the word quickly and add to the word wall.

READ

3. Review the vocabulary and concepts previously covered in this chapter.

Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
 - Point to the concept chart as you quickly review it.
- In the human body, a series of systems have developed and work together to keep the body stable.

The muscular system works with the skeletal system to provide support and movement.

The nervous system sends and receives signals from receptors throughout the body while the brain and central nervous system work to provide command and control.

The endocrine system produces hormones while responding to various bodily needs.

All of these systems working together help to keep our bodies in balance (homeostasis).

4. Read directions for investigation/activity.

5. Read text. Ch 17, The Human Animal: Coordination, Text Section 17.10-17.11, pp. 501-506

- Shared Reading RRP: Read, React, Predict every 2-3 pages
 Tape Partner Choral Silent Round Robin Reading

| Setting | Characters | Pages |
|--|------------|-------|
| day-to-day human life human society | stressors | 501 |
| | addicts | 501 |

RESPOND

6. Fix the facts. Clarify what's important.

Discuss the reading and add 3-5 events to the billboard.

- Discuss the text; clarify the most important facts, concepts, ideas and vocabulary.
- Decide on the 3-5 most important **concepts** and post these on the billboard.

Students might mention:

Stressors include such things as extreme weather, fears, people, and situations.

Stressful situations help prepare the body for vigorous exercise.

Stress can impact the body's immune system.

Drugs are often used as a shortcut in dealing with stress.

Psychoactive drugs can produce short-term feelings of pleasure.

Tolerance means that a person needs more and more of the same drug to produce the same effect.

7. Post information on the billboard. Add new information to ongoing class projects on the wall.

- New concept information can be added to the billboard.
- An answer can be added to a question from the KWL Chart.
- New information can be added to ongoing charts and investigations.

EXPLORE

8. Explore today's investigation with inquiry activities.

9. Explore today's simulation with inquiry activities.

10. Collect data and post.

One possible activity:

My life as an Addict

There is no shortage of stories of students whose lives have been impacted by drug abuse within their own life or that of family and friends. This chapter deals with the physical impact of drugs and gives a basis for understanding in that area.

Activity

This would be a good time to make connections with **Narcotics Anonymous** or **Alcoholics Anonymous** and their guest speaker outreach programs. Part of the 12 step program is giving back. In selecting a guest speaker to speak to your students, try to follow these guidelines:

- The speaker should be one who can relate to your student population.
- The speaker should be recommended. Word of mouth among teaching peers and other schools is very important here.
- The person should not just tell “war stories” and how what they did was bad. Students will see that they are still alive and that can be a misrepresented message. After all, many addicts and abusers are no longer alive and they can’t tell their stories.
- Attention to the physical aspects is the connection for this class.

Discussion

Follow up with an ongoing class discussion on this subject as you move through the remaining chapters.

Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer
g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
Poster Ad Map Retelling Reader’s Theatre Cartoon Rap

Key Questions

What effect does stress have on the body’s immune system?

List some of the ways to manage stress.

What is meant by drug abuse and drug addiction? Distinguish between these two terms.

What are the reasons people begin using drugs?

Why are mind-altering drugs sometimes referred to as shortcuts to the issue?

Remember to ask literal structural idea craft author literature life evaluate and inference questions every day.

Key Paragraph

For some people, the effort to manage stress is difficult and confusing. They seek to escape stress and to find a shortcut to confidence and satisfaction through the use of chemical substances that affect the nervous system. The functions of the nervous system can be modified in a variety of ways, particularly by psychoactive, or mind-altering, drugs. Drugs are nonnutritive substances that change the way the body or brain functions. All drugs have varying degrees of side effects. Used properly, certain drugs are important in maintaining health. Drugs include medicines, such as antibiotics and aspirin, which are used to treat diseases or to relieve minor discomforts. Some psychoactive drugs are prescribed for medical uses. For example, barbiturates are depressant drugs that are used to help people relax and sleep; opiates are sometimes prescribed for hospital patients who are experiencing severe pain.

EXTEND

11. Prompt every student to write a short product tied to today's reading.

What happens to the body under stress?

Have students write a short rap or poem about stress and the body. Instruct them to include the effects of stress on the body as well as ways to cope.

12. Close with a short summary.

Extend the reading to the students' lives or to the world.