



Growing and Changing



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▲ Working with the Photo

Siblings often look similar to each other. **What physical traits do you share with other members of your family?**

Start-Up Activities

Before You Read

What do you know about how people grow and change? Take the short quiz below. Keep a record of your answers.

HEALTH QUIZ Choose the best answer for each of the following:

- When children go through puberty, they experience emotional changes.
(a) always (b) sometimes (c) never
- It is important to care for the reproductive system even if you don't plan to have children.
(a) always (b) sometimes (c) never
- Members of the same family look alike.
(a) always (b) sometimes (c) never

ANSWERS: 1. a; 2. a; 3. b.

FOLDABLES® Study Organizer

As You Read

Make this Foldable® to help you organize what you learn in Lesson 1 about the changes of adolescence. Begin with a plain sheet of 8½" × 11" paper.

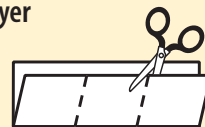
- 1 Fold the sheet of paper along the long axis, leaving a 2" tab along the side.



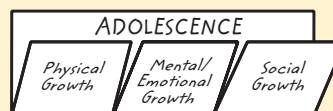
- 2 Turn the paper and fold it into thirds.



- 3 Unfold and cut the top layer along both fold lines. This makes three tabs.



- 4 Label the tabs as shown.



As you read the lesson, record what you learn about the changes of adolescence.

Go Online

Visit glencoe.com and complete the Chapter 12 crossword puzzle.

Lesson 1

Changes During Adolescence

Guide to Reading

Building Vocabulary

Write definitions of the vocabulary terms below in your own words. As you read the lesson, revise or add to your definitions.

- adolescence (p. 364)
- puberty (p. 365)

Focusing on the Main Ideas

In this lesson, you will learn to

- **identify** the physical, mental, emotional, and social changes that occur during adolescence.
- **describe** healthy ways of expressing your emotions.
- **develop** ways to manage strong emotions.

Reading Strategy

Predicting Skim the headings, photos, and captions in this lesson. Write down three pieces of information you think will be covered in this lesson.

FOLDABLES Study Organizer Use the Foldable® on p. 363 as you read this lesson.

Quick Write

Make a list of four ways that you are different now than you were five years ago.

What Happens During Adolescence?

You grew rapidly as a child. You got taller, you outgrew your clothing and shoes, and before you knew it, you were almost a teen.

During your teen years, your body will continue to grow and change. So will your interests. This is a normal part of **adolescence**, *the stage of life between childhood and adulthood, usually beginning somewhere between the ages of 11 and 15*. During adolescence, you experience many physical, mental, emotional, and social changes. These changes prepare you to be an adult.

Reading Check

Define What is adolescence?

- Many people become more interested in sports during the teen years. **Which activities that you enjoy now do you think you will enjoy throughout your life?**





Physical Growth

Gary has grown taller and speaks in a deeper voice than he used to. These physical changes are a sign that he is going through the development stage called puberty. **Puberty** is the time when you develop physical characteristics of adults of your own *gender*. During puberty, males' and females' bodies begin to change. These changes are a normal part of becoming a healthy adult. **Figure 12.1** describes how male and female bodies change during puberty.

Teens go through puberty at different rates. Your body may change faster or slower than your friends' and peers' bodies. Most females start puberty between the ages of 8 and 13. Most males start between the ages of 9 and 14.

With so many changes happening at different times for different people, teens can vary widely in shape and size. You don't need to be worried about these differences. Accept them; that's how puberty is. You may be developing physically at a different rate than your friends and peers, but just remember that all teens are going through similar mental, emotional, and social changes.

Academic Vocabulary

gender (JEN der) (noun)
male or female sex. *The amount of food you need each day depends on your age, gender, and level of physical activity.*

FIGURE 12.1

YOUR CHANGING BODY

Your body goes through many physical changes during puberty.

What is one change that happens to both males and females during puberty?

MALES

- Male hormone production increases.
- Sudden, rapid growth occurs.
- All permanent teeth come into place.
- Acne may appear.
- Underarm hair appears.
- Pubic hair appears.
- Perspiration increases.
- External genitals grow.
- Shoulders broaden.
- Muscles develop.
- Sperm production starts.
- Facial hair appears.
- Larynx gets larger, and voice deepens.

FEMALES

- Female hormone production increases.
- Sudden, rapid growth occurs.
- All permanent teeth come into place.
- Acne may appear.
- Underarm hair appears.
- Pubic hair appears.
- Perspiration increases.
- Uterus and ovaries enlarge.
- Breasts develop.
- Hips become wider.
- Body fat increases.
- Ovulation occurs.
- Menstruation starts.



Connect To... Science



Depression

It's common for teens to feel sad from time to time. For some teens, however, these feelings may be a sign of depression. Signs of depression include long periods of sadness, sleeping or eating problems, and an inability to enjoy favorite activities. Depression can be treated.

Use reliable resources to research two types of treatments for depression. Make a list of the benefits of each.

Try not to compare yourself with other teens. If a person hasn't started growing or is not going through the same stage that you are, there is nothing wrong with him or her, or you. Every teen develops at a rate that is just right for him or her.

Mental Growth

It's not just your body that changes during adolescence. You also change mentally and emotionally. That's partly because as your brain grows, its ability increases to do complex reasoning and problem solving. You learn to be more responsible for your actions. You begin to make more decisions on your own and see the consequences of those decisions. You are able to work independently for various periods of time.

You start to think in a more complex way during adolescence. Soon, your opinions about social issues and politics may start to change. That's because you start to understand that many questions don't have simple answers. Also, you begin to see that other people have different points of view from your own. You start to make decisions based on your values and beliefs. Like the physical changes that teens experience, these mental and emotional changes happen at different rates, too.



Reading Check

Describe What two tasks does the brain become more capable of performing during adolescence?

- ▼ Friends become very important during adolescence. **What qualities do you look for in a friend?**





Emotional Growth

Carlos is acting a little different these days. He gets mad at his mother very quickly and doesn't want to listen to her. Carlos' mother doesn't get too upset, though. She knows that this behavior is normal for people during adolescence.

Like Carlos, you will likely experience a lot of emotional changes during adolescence. You might start to feel differently about your peers, your parents, and other adults. You might become closer to your friends and feel less connected to your parents. In time, you may begin to experience a physical attraction toward another person. Being attracted to someone and feeling close to him or her emotionally is an important part of healthy adult relationships. All these new feelings, however, can be difficult to handle. Just know that as you mature, you will learn to manage your emotions in a positive way.



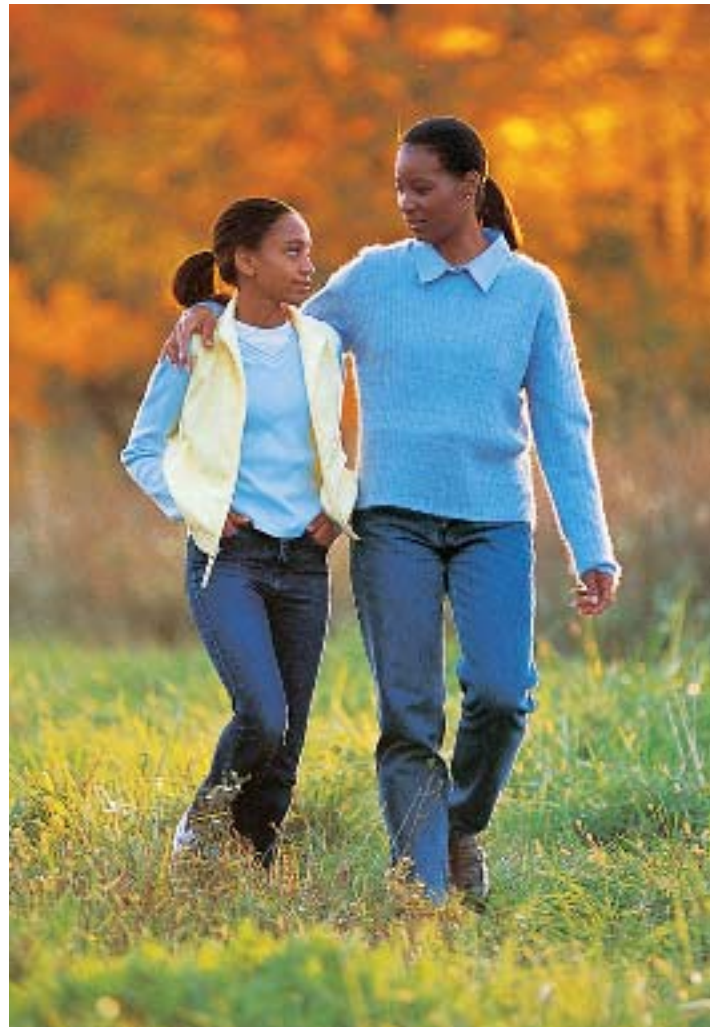
Expressing Emotions

During adolescence, you may feel many different emotions in a short period of time. For example, in one day, you may feel angry, sad, happy, scared, and excited. You don't need to worry because mood swings like this are a normal part of adolescence.

When you try to manage many strong feelings at once, it can feel overwhelming. You might feel like lashing out at others or keeping your feelings hidden. Neither of these approaches is the best way to handle strong emotions.

Instead, you need some healthy ways to express your feelings. There are many ways to do this. You can write in a journal, draw, or play music. Some people think about their problems while exercising or participating in a hobby. You can also get help by talking with your friends, a sibling, your parents, a counselor, or another adult you trust.

- ▶ Talking to someone you trust can help you cope with strong feelings. **What are two other healthful ways to express your emotions?**





Health Skills Activity

Stress Management

Managing Anger

You're very focused studying for an important math test. Then your younger sister interrupts you with questions about her homework. An interruption is the last thing you need right now. You feel angry, but you know that yelling at your sister isn't likely to make you feel better. When you're feeling a strong emotion such as anger or frustration, it can be hard to know how to react.

One thing you can always do when you feel really angry is to take a moment to cool off. In your mind, try making a list of what makes you angry. The math test and interruptions might be at the top of the list right now. Then think about what other factors might be stressing you out enough to make you angry. Make a plan to relieve some of those stresses. It often helps to deal with your problems one at a time.

On Your Own

Create a list of situations that make you angry. Then think about some ways to relieve stress in your life. Make a weekly plan that helps keep you better prepared to handle problems without getting angry.

Social Growth

Adolescence is a time to find out more about yourself and those around you. Many teens participate in different social activities such as volunteer groups, sports teams, or special-interest clubs. Do any of these interest you? Your interests have changed since you were a child. They may change again as you become an adult.

The social growth experienced as a teen is very important. It can help you find your place in society. The social connections that you make as a teen can help you develop friendships, find job opportunities, and get emotional support. These connections also shape your values and help you discover who you are.

During adolescence, you may begin spending more time with friends. Friends can influence many of the decisions you make as a teen. It is important to choose friends who will support and influence you in a positive way. This will help you make good choices during your teen years.



Reading Check

List Name three types of social organizations available to teens.



Richard Anderson



- ▲ What's important to you? Being involved in social activities can help you answer this question. **What activities might help you develop socially?**

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 1.

Lesson 1 Review

After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Identify** Name three ways that females' and males' bodies change during puberty.
2. **Vocabulary** Define *puberty*.
3. **Give Examples** Give three examples of how to express strong emotions in a healthy way.
4. **Identify** Identify two ways teens grow emotionally during adolescence.

Thinking Critically

5. **Analyze** How can after-school activities help you discover who you will be as an adult?

6. **Analyze** Teens face a lot of challenges. Which do you think are hardest, and why?

Applying Health Skills

7. **Practicing Healthful Behaviors** Travis has been having trouble in math class. To relieve stress, he often goes running in his neighborhood. He has considered joining the track team, but he worries that he isn't fast enough. He also doesn't have a lot of extra time. Travis knows that the members of the track team often help each other with their homework. What advice would you give Travis? Explain your reasoning.

Lesson 2

The Endocrine System

Guide to Reading

Building Vocabulary

The ancient Greek word *metabolē* means “change.” Look up the meaning of the word *metabolism*. Explain what you think the word *metabolism* has to do with change.

- hormones (p. 370)
- endocrine system (p. 370)
- metabolism (p. 371)

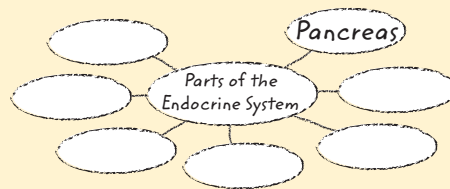
Focusing on the Main Ideas

In this lesson, you will learn to

- **describe** how the endocrine system affects growth and development.
- **identify** two disorders of the endocrine system and how to treat them.
- **find** information about managing diabetes.

Reading Strategy

Analyzing a Graphic Use the diagram shown here to create a concept map about the endocrine system. Fill in the map as you read the lesson.



Quick Write

Write down three things you know about hormones. Revisit this list after you have read the lesson.

Parts of the Endocrine System

Hormones are one of the things that make your body change during puberty. **Hormones** are *chemical substances produced in certain glands that help to regulate the way your body functions*. They are produced by the organs of the endocrine system. The **endocrine system** is *the system of glands throughout the body that regulate body functions*. **Figure 12.2** shows the parts of the endocrine system.

Glands and Hormones

Each gland of the endocrine system makes one or more specific hormones. Hormones act like chemical signals that tell your organs and tissues what to do. For example, the pancreas makes the hormones insulin and glucagon. When the pancreas releases insulin into the blood, it lowers the level of sugar in the blood. When the pancreas releases glucagon, it raises the blood sugar level. If blood sugar is too low, you feel weak and light-headed. If it's too high, you can feel nauseated.

Reading Check

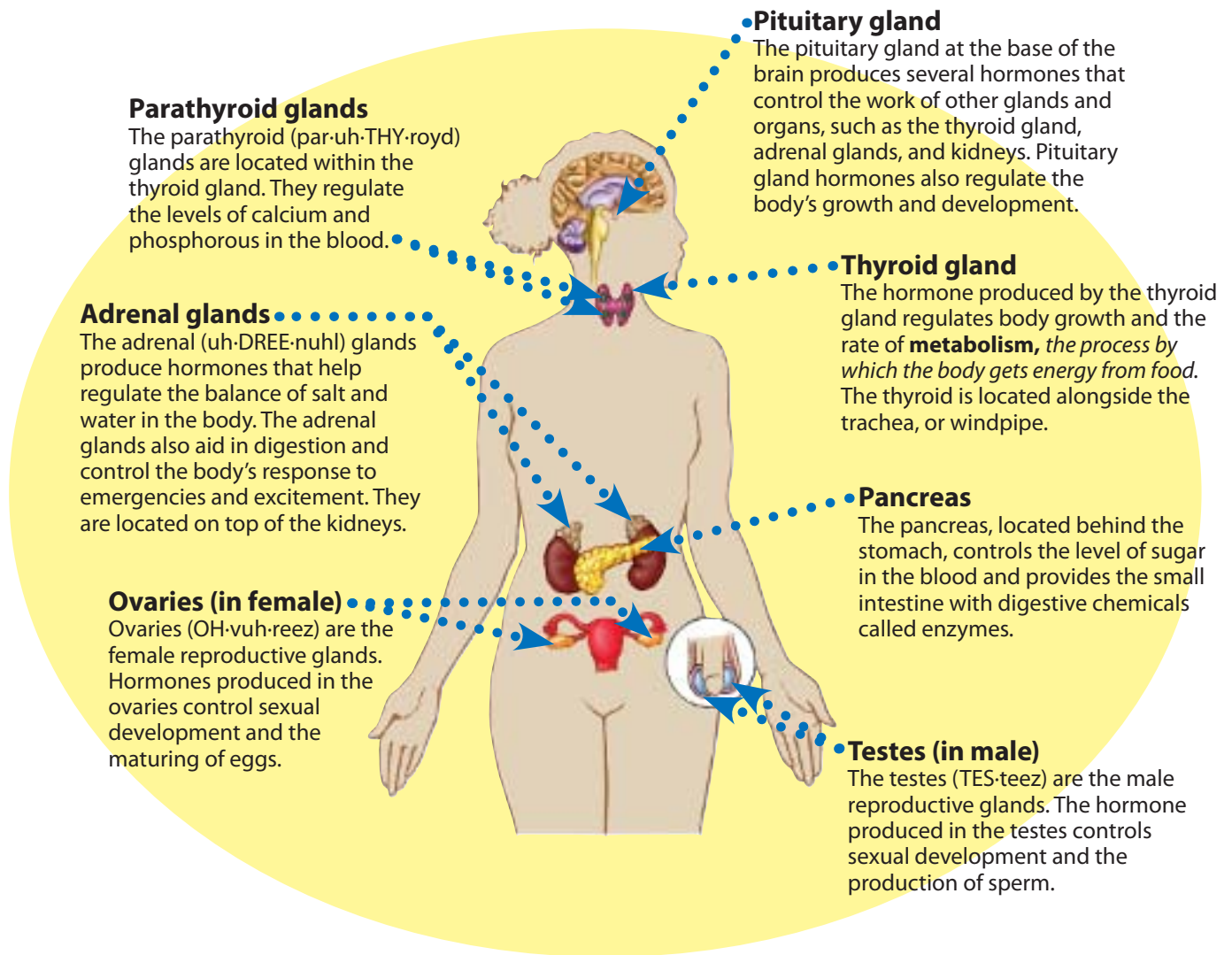
Identify What are two hormones produced by the pancreas?



FIGURE 12.2

PARTS OF THE ENDOCRINE SYSTEM

The endocrine system controls many of the changes that happen during puberty. **What does the pituitary gland do?**



One major role of the endocrine system is to control the body's metabolism. **Metabolism** is *the process by which the body gets energy from food*. It is regulated by hormones made by the thyroid gland.

Diseases of the Endocrine System

Remember, some organs are controlled by endocrine glands. These organs can't do their job unless they receive the hormones they need. If there are problems with one or more glands in the endocrine system, these organs don't function properly. Diseases of the endocrine system can develop when either too much or too little of a hormone is produced.



Health Skills Activity

Advocacy

Managing Diabetes

People with diabetes must carefully keep track of the types and amounts of foods they eat. If they eat foods with too much sugar, they can become ill. If they don't eat enough food, or wait too long to eat, their blood sugar levels can become dangerously low.

On Your Own

Go to the library or search the Internet for valid information about diabetes. Create a brochure that encourages teens who have diabetes to manage their condition carefully. Be sure to include information that explains why managing diabetes is so important.

Diabetes

Diabetes is an endocrine disorder. It occurs when the body doesn't produce enough of the hormone called insulin or doesn't respond properly to the insulin that is produced. Insulin lowers the amount of sugar in the blood. People with diabetes have too much sugar in their blood. There are two types of diabetes: type 1 and type 2.

Some people are born with type 1 diabetes. In type 1 diabetes, germ-fighting cells in the body attack the cells of the pancreas that produce insulin. The body doesn't produce enough insulin, and there is too much sugar in the blood. If not treated, a person with type 1 diabetes can fall into a coma. People with type 1 diabetes must regularly inject themselves with insulin to keep their blood sugar at the right level.

People with type 2 diabetes produce a normal amount of insulin, but their bodies can't use it well. This kind of diabetes often develops in adulthood, but people of all ages, including children, can develop it. It's more common in people who are overweight. People with this disorder may feel tired a lot and often sick to their stomachs. They may



◀ This teen, like others with type 1 diabetes, has learned to monitor her blood sugar and give herself insulin injections. **Why do people with diabetes have to be careful of what they eat?**

also have infections and wounds that do not heal. People with type 2 diabetes have to carefully control their diets and engage in regular physical activity. They also sometimes need medication.

If diabetes is not managed well, there can be long-term harmful effects. People may suffer from poor circulation, nerve damage, heart disease, kidney failure, or blindness. Poor circulation and nerve damage can result in the need to amputate, or remove through surgery, a body part such as a toe, foot, or leg.

Thyroid Diseases

Metabolism can be affected by diseases of the thyroid gland. If the gland doesn't make enough hormones to regulate metabolism, a person can develop a condition called hypothyroidism. A person with hypothyroidism may feel tired and cold, have dry skin, and gain extra weight. In teens, hypothyroidism can also delay growth. Fortunately, hypothyroidism can be treated with a thyroid replacement hormone.

Hyperthyroidism is the opposite of hypothyroidism. In hyperthyroidism, the thyroid produces *too many* hormones. This leads to a very high metabolism. A high metabolism can lead to sweating, excessive eating, weight loss, tremors, and muscle weakness. Hyperthyroidism can be treated with medication.

 **Reading Check** **Explain** What is hyperthyroidism?

 **Go Online**

Visit glencoe.com and complete the Interactive Study Guide for Lesson 2.

Lesson 2 Review

 **After You Read**

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** What is *metabolism*?
2. **List** What are three functions of the hormones produced by the thyroid gland?
3. **Explain** How are type 1 and type 2 diabetes usually treated?
4. **Explain** How is hypothyroidism treated?

Thinking Critically

5. **Infer** Why might a disease that affects an endocrine gland have effects on other parts of the body?

6. **Apply** Some drugs are synthetic, or artificial, hormones. Why is it necessary to consult a doctor before taking this kind of medication to treat a disease?

Applying Health Skills

7. **Communication Skills** Imagine that your friend has diabetes. You notice that your friend is not managing the condition properly. What advice would you give him or her?

Lesson 3

The Male Reproductive System

Guide to Reading

Building Vocabulary

Write each of the terms below. As you read this lesson, write the definition next to each term.

- reproduction (p. 374)
- reproductive system (p. 374)
- sperm (p. 375)
- testes (p. 375)
- semen (p. 375)

Focusing on the Main Ideas

In this lesson, you will learn to

- **describe** the function of the male reproductive system.
- **identify** the organs and structures of the male reproductive system.
- **identify** common problems of the male reproductive system.
- **explain** how to care for the male reproductive system.
- **identify** ways of detecting testicular cancer.

Reading Strategy

Sequencing Take a look at Figure 12.3. Using this figure, trace the path of sperm from where they are produced to the outside of the body. Make a list of the structures that sperm pass through.

Quick Write

Do you plan to have children when you become an adult? How do you picture your family life when you are older?

Reproduction

All forms of life on earth reproduce. **Reproduction** is the process by which living organisms produce others of their own kind. Each human results from the joining of two cells that come from the reproductive systems of a female and a male. The **reproductive system** consists of the body organs and structures that make it possible to produce children.

Reading Check

Define What is the reproductive system?

- ▶ The male and female reproductive systems make it possible for people to have children. **What process allows living things to produce others of their own kind?**





Patrick Ramsey/ImageState

Parts of the Male Reproductive System

The male reproductive system's main job is to produce sperm. **Sperm** are *male reproductive cells*. Each sperm can join with a female reproductive cell and make another human.

The **testes** are *the pair of glands that produce sperm*. The testes are located in the scrotum. The scrotum keeps the testes at the right temperature to produce sperm. Sperm leave the testes and travel to the urethra.

Semen (SEE-muhn) is *a mixture of sperm and fluids that protect sperm and carry them through the tubes of the male reproductive system*. The semen is released from the urethra through the penis. The body's release of semen is called ejaculation (i-ja-kyuh-LAY-shun). There are 3 to 4 million sperm cells in each ejaculation. The parts of the male reproductive system are shown in **Figure 12.3**.



▲ Visit a doctor for a yearly checkup to prevent health problems. **What are some issues that a male might discuss with a health care provider?**

▼ **FIGURE 12.3**

PARTS OF THE MALE REPRODUCTIVE SYSTEM

Each part of the male reproductive system has a job to do.

What part produces sperm?

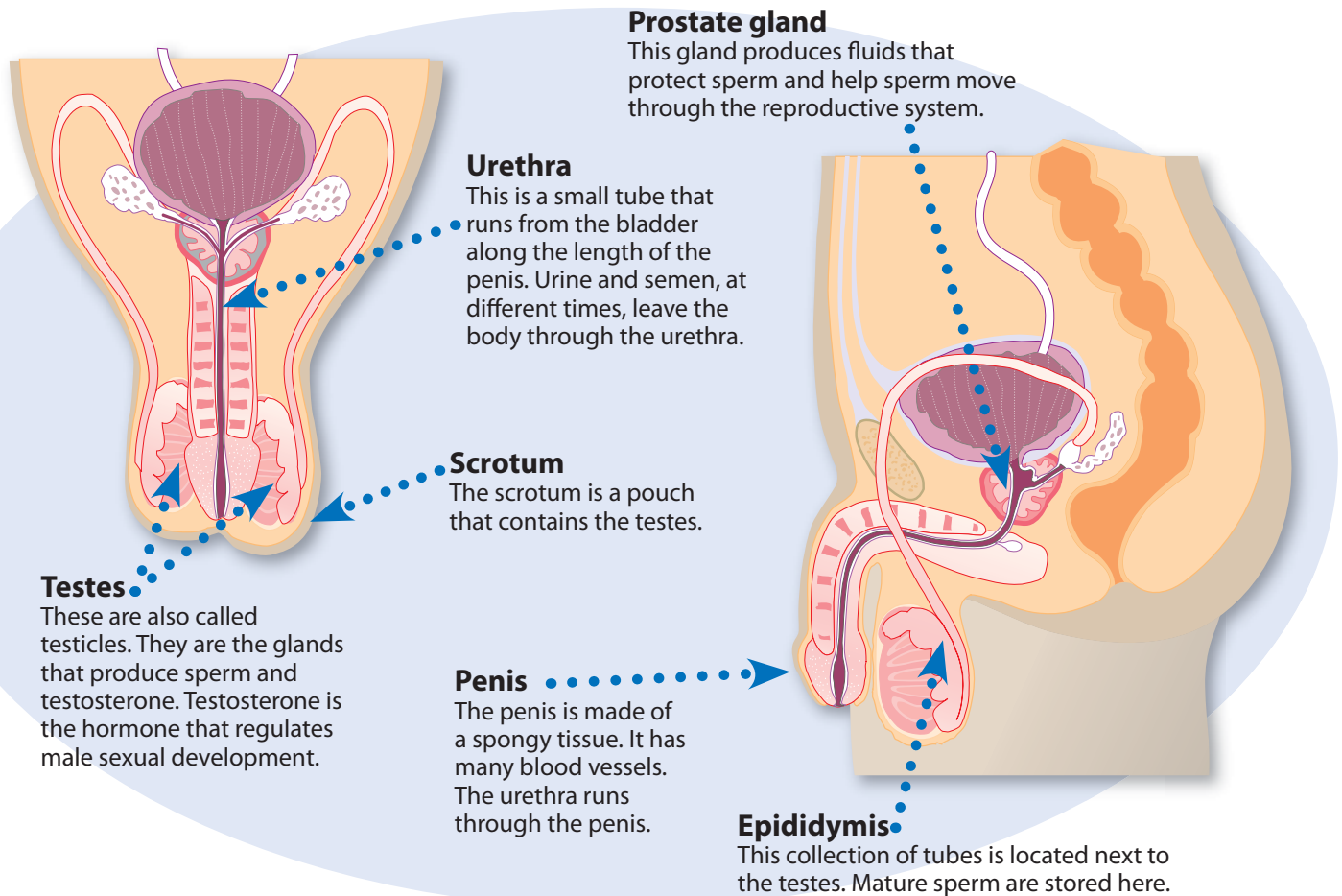




FIGURE 12.4

PROBLEMS OF THE MALE REPRODUCTIVE SYSTEM

An inguinal hernia can form when a male strains his abdominal muscles. **How can an inguinal hernia be repaired?**

Inguinal hernia

The intestines are held in place by a layer of muscles. Sometimes these muscles have a weak spot due to muscle strain or other injuries. A part of the intestine may push through the weak spot into the scrotum or into the area above the inner thigh. This is called an inguinal hernia. A hernia can be treated through surgery.

Testicular cancer

Cancer is the uncontrolled growth of abnormal cells. A lump or swelling of the testicles, and pain or tenderness in the testicles, abdomen, or groin, may be signs of testicular cancer. It is the most common cancer of males aged 14 to 34. If it is detected early enough, many of the serious complications can be prevented.

Testicular torsion

Within the scrotum, the testicles are held in place by a structure called the spermatic cord. Sometimes, the cord becomes twisted around a testicle. Blood flow is cut off to the testicle, causing pain, swelling, or tenderness. Immediate treatment is necessary.

Prostate cancer

The tissue of the prostate gland can become cancerous. This condition is more common in older men. This cancer can be treated through surgery, radiation treatment, or chemotherapy.

Sterility

Males who produce no sperm are sterile. Sterility can be caused by untreated STDs or exposure to pesticides, lead, or dangerous amounts of radiation, such as X rays. Certain drugs can also cause sterility. Some types of sterility can be treated by medications or surgery.

Male Health Problems

The male reproductive system can sometimes not work properly. Most problems can be prevented or treated. Otherwise, they can lead to pain, injury, the inability to produce children, or even death. Some common problems are described in **Figure 12.4**.

Caring for the Male Reproductive System

Changes in health and hygiene needs related to adolescence include caring for the reproductive system. Males can take the following steps to help keep their reproductive systems healthy.

- Do a testicular self-examination every month after a warm shower or bath.
- Shower or bathe regularly.
- Wear protective gear, such as an athletic supporter or cup, when participating in contact sports.
- Visit a health care provider for regular physical checkups.

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 3.



Health Skills Activity

Practicing Healthful Behaviors

How to Do a Testicular Self-Examination

When a male goes for his yearly physical checkup, the doctor will usually examine him for testicular cancer. This can help detect the disease before it becomes very serious or difficult to treat. Testicular cancer can grow and spread very quickly if it is not detected. So it is important for males to do a testicular self-examination every month.

On Your Own

Go to the library or use the Internet to find instructions for how to do a testicular self-examination. Write out the instructions. Make a list of at least four signs of testicular cancer to watch out for. Then write two questions that a male might have for a health care provider about testicular self-examinations.

Lesson 3 Review



After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define *reproduction*.
2. **List** What are four problems of the male reproductive system?
3. **Name** What are two types of gear that protect the reproductive system of a male athlete?
4. **Explain** How do regular visits to the doctor help prevent male reproductive problems?

Thinking Critically

5. **Evaluate** Why is it important to take care of the male reproductive system?

6. **Apply** Tim has noticed a swelling in one of his testes. He is uncomfortable discussing this problem with his parents, but it is not going away. What steps should Tim take to prevent a serious problem?

Applying Health Skills

7. **Accessing Information** Some teens and adults use anabolic steroids to change the shape of their body or improve athletic performance. Use the Internet to find valid information about anabolic steroids. Include the information that you find in an informative brochure that warns against the use of these illegal substances.

Lesson 4

The Female Reproductive System

Guide to Reading

Building Vocabulary

The uterus is also called the womb. The word *womb* can mean “a protective space.” Relate this meaning to the definition in the text.

- ovaries (p. 378)
- uterus (p. 378)
- ovulation (p. 379)
- menstruation (p. 379)
- fertilization (p. 380)
- gynecologist (p. 382)

Focusing on the Main Ideas

In this lesson, you will learn to

- **describe** the functions of the female reproductive system.
- **identify** the organs and structures of the female reproductive system.
- **explain** how to care for the female reproductive system.
- **apply** the skill of advocacy to promote breast self-examinations.

Reading Strategy

Predicting Before you read this lesson, take a look at the major headings, figures, and photo captions. Then write down two questions that you think might be answered by reading this lesson.

Quick Write

Why is it important to know about the reproductive system?

Parts of the Female Reproductive System

The female reproduction system has three main functions: to produce egg cells, to create a new life, and to give birth. Eggs are the female reproductive cells. The **ovaries** are *the female endocrine glands that release mature eggs and produce the hormones estrogen and progesterone*. These hormones control female sexual development and the other organs in the female reproductive system.

The female reproductive system also includes the uterus. The **uterus** is *a pear-shaped organ, located within the pelvis, in which the developing baby is nourished and protected*. **Figure 12.5** lists the parts of the female reproductive system and describes what they do.

Academic Vocabulary

cycle (SY kel) (*noun*) a period of time taken up by a series of events or actions that repeat themselves regularly and in the same order. *The police detectives looked at the cycle of events that led to Mark's death.*

The Menstrual Cycle

You may have heard of a female having a “period.” This refers to her menstrual **cycle**. The menstrual cycle is the series of events that prepares the female reproductive system for reproduction. Menstrual cycles begin when a female’s hormone production increases and she reaches full puberty. Most complete menstrual cycles last about 28 days. However, the length of a menstrual cycle varies from female to female. For the first year or two, menstrual cycles are often irregular.

▼ **FIGURE 12.5**

PARTS OF THE FEMALE REPRODUCTIVE SYSTEM

This diagram shows the parts of the female reproductive system.

Where are eggs stored?

Ovaries

The ovaries hold the female's eggs. The ovaries also make the hormones estrogen and progesterone. These control female sexual development and other reproductive organs.

Cervix

This is the narrow part of the bottom of the uterus. The opening of the cervix enlarges to allow a baby to leave the uterus during birth.

Labia

Labia are folds of skin that cover the opening of the vagina.

Fallopian tubes

Eggs travel from the ovaries to the uterus through the fallopian tubes. Eggs are usually fertilized in these tubes.

Uterus

The uterus is the organ in which a developing child is nourished.

Vagina

The vagina is the passageway that leads from the cervix to the outside of the body. Menstrual flow leaves the body through the vagina. Sperm enter the female reproductive system through the vagina. During birth, a baby leaves the mother's body through the vagina.

In the first stage of the menstrual cycle, hormones cause the lining of the uterus to build up with a cushion of blood, tissue, and fluid. Next, the level of the hormone estrogen reaches its highest point during the cycle. This causes **ovulation**, the process by which the ovaries release mature eggs, usually one each menstrual cycle. The egg is released from the ovary. It travels through the fallopian tube toward the uterus.

If the egg is not fertilized, the lining of the uterus begins to break down. **Menstruation** is the flow from the body of blood, tissues, and fluids that results from the breakdown of the lining of the uterus. The period of time in which menstruation takes place is called the menstrual period. It can last from two to seven days. After menstruation, the cycle begins again. The lining of the uterus once again begins to thicken. A complete menstrual cycle is shown in **Figure 12.6** on page 380.

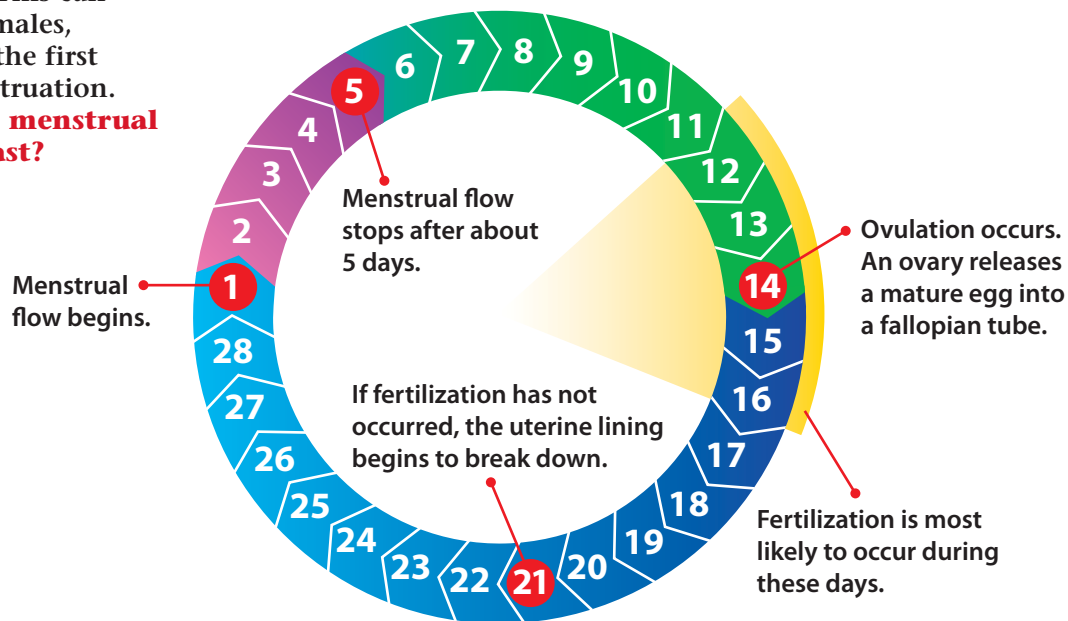


▼ FIGURE 12.6

THE MENSTRUAL CYCLE

The menstrual cycle ranges from 25–30 days. This can differ for some females, especially during the first two years of menstruation.

How long does a menstrual period usually last?



Fertilization

Fertilization is the joining of a male sperm cell and a female egg cell to form a fertilized egg. An egg that travels to the uterus and is not fertilized eventually dissolves. If sperm enter the vagina and travel to the fallopian tubes shortly after ovulation, one sperm can meet the egg cell and fertilize it. When the egg and sperm cell unite, the egg develops a film that prevents more sperm cells from entering the egg. The fertilized egg then travels to the uterus where it becomes implanted in the lining. The female is now pregnant. She does not menstruate or ovulate again until after the pregnancy is over. Inside the uterus the fertilized egg begins to grow. It is nourished and protected by the lining of the uterus. Eventually, the fertilized egg develops into a baby.

▼ When sperm meets egg, fertilization can occur. **Where in the female's reproductive system does fertilization typically occur?**



Female Health Problems

Many problems can affect the female reproductive system. Fortunately, many of them can be prevented and treated. Here are some common problems and their treatment.

- A **yeast infection** is an infection of the vagina. It is caused by changes in the amounts of bacteria and fungi that normally live in the vagina. As a result, the female experiences itching as well as a discharge. The infection is usually brought on by hormone changes, certain medicines, and tight clothing. It can be treated with medicine.



Health Skills Activity

Advocacy

Promoting Breast Self-Examinations

Doctors usually examine a female's breasts for lumps or signs of breast cancer. Breast cancer can grow and spread very quickly if not detected early. Females can detect signs of cancer by doing a breast self-examination every month. It should be done about seven days after menstruation.

On Your Own

Go to the library or use the Internet to find instructions for how to do a breast self-examination. Make a brochure that features these instructions. In your brochure, include a list of at least four signs of breast cancer to watch out for.

- **Vaginitis** is an infection of the vagina. The female may have itching, discharge, and sometimes pain. Vaginitis is treated with medication.
- **Toxic shock syndrome (TSS)** is a rare bacterial infection. Some studies show that it can be caused by using a single tampon for more than 24 hours. TSS can lead to death if it is not treated. Signs of TSS include high fever, a rash, and vomiting. TSS can be prevented. Females who use tampons must read the directions that come with the package and follow them very carefully. A female should change her tampon every four to six hours.
- **Cancer** can occur in the breasts, ovaries, uterus, and cervix. It is caused by uncontrolled cell growth in the tissues of these organs. Early detection is the best way to prevent the serious complications of cancer. This is done by having regular health screenings. Many kinds of cancer can be treated through surgery, radiation, or chemotherapy. Fortunately, cancer involving the reproductive system is rare among teens.
- **Sterility** is the inability to produce children. Sterility can be caused by many factors, including untreated STDs and hormone imbalances caused by stress, diet, and overexertion, as well as aging. Some types of sterility can be treated by medicine or surgery. Infertility is a reduced ability to produce children. It can be caused by some of the same factors that cause sterility, including untreated STDs.

▼ By keeping track of her menstrual cycle, a female can better monitor her health.

How long is a typical menstrual cycle?



Caring for the Female Reproductive System

Here are some steps females can take to keep their reproductive systems healthy.

- Do a breast self-examination every month.
- Shower or bathe daily.
- Keep track of your menstrual cycle. It may be irregular for the first year or two. If a menstrual period is missed for several months, or if there is severe pain or a very heavy menstrual flow, see a doctor.
- See a health care provider if you experience premenstrual syndrome (PMS). PMS occurs just before menstruation. It can include headaches, breast tenderness, fatigue, irritability, acne, and abdominal cramps.
- Visit a gynecologist for regular checkups. A **gynecologist** is a doctor who specializes in the female reproductive system.

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 4.

Reading Check

List What are four ways to care for the female reproductive system?

Lesson 4 Review

After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define *fertilization*.
2. **Explain** What happens to the lining of the uterus if fertilization does not occur after ovulation?
3. **List** What are the three functions of the female reproductive system?
4. **Explain** Where does the egg go after ovulation has occurred?

Thinking Critically

5. **Synthesize** What parts of the female reproductive system are also part of the endocrine system? What hormones do they produce?

6. **Analyze** How does fertilization affect the menstrual cycle?

Applying Health Skills

7. **Communication Skills** Molly is 18 years old and not sexually active. She feels that she does not have time to go to a gynecologist and that since she isn't sexually active, she doesn't have to worry about her reproductive system. How would you explain to Molly why it is important that she have a yearly checkup? What health concerns might she prevent by visiting a gynecologist?

Lesson 5

Heredity and Human Development

Guide to Reading

Building Vocabulary

Both *embryo* and *fetus* are used to describe a human being before it is born. Use a dictionary to find out the difference in meaning between these two terms.

- chromosomes (p. 383)
- genes (p. 383)
- cell (p. 384)
- tissue (p. 384)
- organ (p. 384)
- body system (p. 384)
- embryo (p. 384)
- fetus (p. 384)

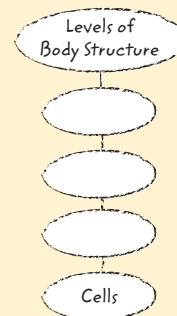
Focusing on the Main Ideas

In this lesson, you will learn to

- **explain** how humans inherit certain characteristics.
- **identify** the basic unit of life.
- **describe** how a fetus develops.
- **identify** ways an expectant mother can care for her developing fetus.

Reading Strategy

Analyzing a Graphic Using the diagram shown here, create a concept map about the different levels of body structure. As you read the lesson, fill in the concept map.



Heredity

Tina looks very much like her mother. Frank looks a little like his mom and a little like his dad. These similarities occur because genetic material is passed from parent to child. When a sperm and an egg unite, the newly fertilized egg has a complete set of chromosomes. **Chromosomes**, located in the cell's nucleus, are *threadlike structures that carry genes*. **Genes** are *the basic units of heredity*. They carry the codes for inherited traits.

A sperm has 23 chromosomes, and an egg also has 23 chromosomes. The fertilized egg contains 46 chromosomes, half from the mother and half from the father. This is shown in **Figure 12.7** on page 384.

- ▶ A zygote becomes an embryo and then a fetus. **When is an embryo first called a fetus?**

Quick Write

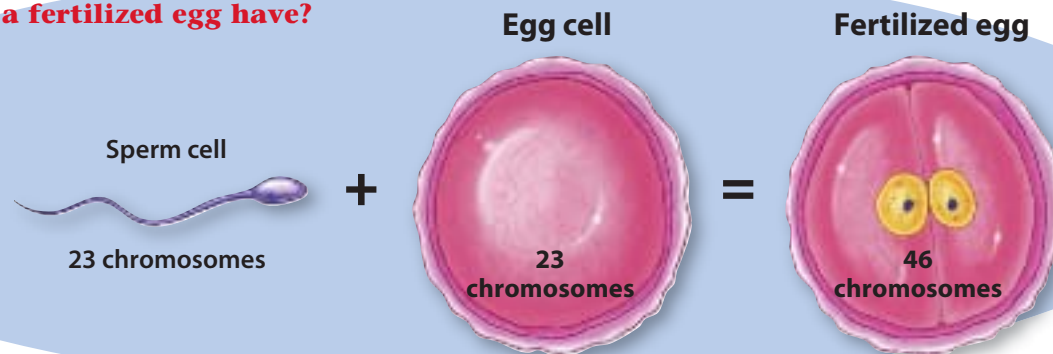
Do you know people who look like their family members? Which traits do they have in common?



FIGURE 12.7

COMBINING CHROMOSOMES

Each sperm contains 23 chromosomes, as does each egg. **How many chromosomes does a cell in a fertilized egg have?**



Fertilization and Human Development

A **cell** is the basic unit of life. Humans are made of millions of cells. A fertilized egg, however, is just one single cell. How, then, does a single cell become a person made of many cells? Soon after fertilization, the fertilized egg begins to divide and multiply. Soon, an organism made up of many cells is formed.

As the organism continues to develop, its cells form more and more complex body parts. Groups of cells make up tissues. A **tissue** is a group of similar cells that do a particular job. Tissues then make up organs. An **organ** is a body part made up of different tissues joined to perform a particular function. Eventually, an entire body system is formed. A **body system** is a group of organs that work together to carry out related tasks.

Cells, tissues, organs, and body systems are different levels of organization in the body. Cells are the most basic level of organization. Body systems are the most complex. The different levels of organization in the body are shown in **Figure 12.8**.

Development of the Fetus

A fertilized egg is first called a zygote. The zygote divides to form two cells about 24 hours after fertilization. Then these cells divide, forming more cells. After about a week, the zygote attaches itself to the lining of the uterus. After another week, the zygote is called an embryo. An **embryo** is the developing organism from two weeks until the end of the eighth week of development. Each time one of an embryo's cells divides, it produces two cells. The number of cells continues to multiply as the embryo develops. After the eighth week, the human embryo is called a fetus. A **fetus** is the developing organism from the end of the eighth week until birth. About

ACTIVITY Careers for the 21st Century

Biological Scientist



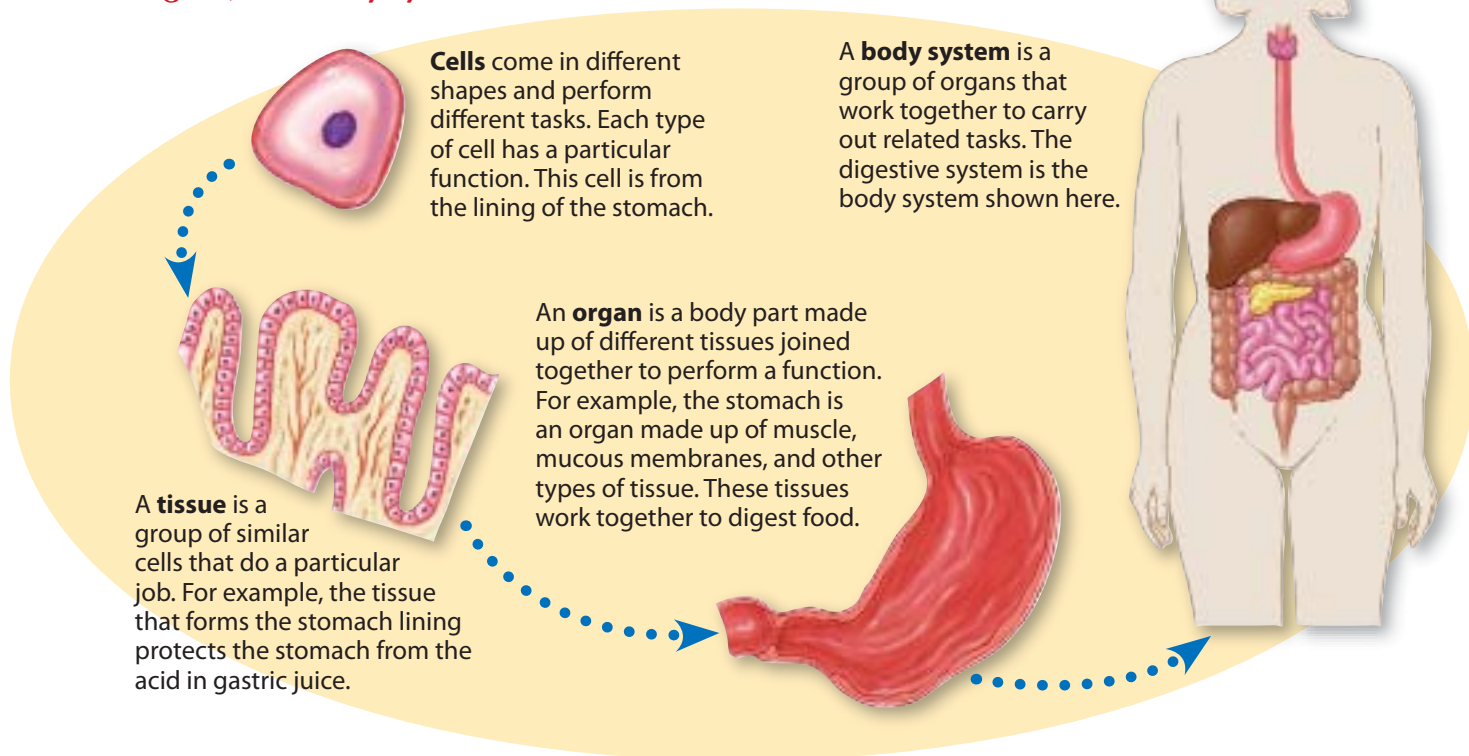
Biological scientists study living organisms and their relationship to their environment. Some biological scientists work in the growing field of biotechnology. They study the genetic material in cells to learn about inherited traits and diseases, such as cancer and obesity. You can prepare for a career as a biological scientist by taking classes in biology and chemistry.

What other fields would a biological scientist work in? Go to Career Corner at glencoe.com to find out.

FIGURE 12.8

BUILDING BODY SYSTEMS

One fertilized egg cell will eventually develop into a complete human being with body systems that work together. **How are cells, tissues, organs, and body systems related?**



nine full months after fertilization, birth takes place. During this nine-month period, the fetus develops the **complex** body systems needed for survival. The stages the fetus goes through are shown in **Figure 12.9**, on page 386.

The fetus gets nutrients and oxygen from its mother through the umbilical (uhm·BI·li·kuhl) cord. This is a tube that attaches to the abdomen of the fetus. At birth, the umbilical cord is cut.

Reading Check

Compare How does an embryo differ from a fetus?

Care During Pregnancy

An expectant mother can do many things to create a healthy environment for her growing fetus. Since the fetus is inside her body, all the mother's health choices can also affect its health. Expectant mothers should practice these positive health behaviors.

- **Eat healthful foods.** The fetus gets its nourishment directly from its mother. Eating nutritious foods will greatly benefit the health of both the mother and the fetus.

Academic Vocabulary

complex (kuhm PLEKS)

(*adjective*) complicated.

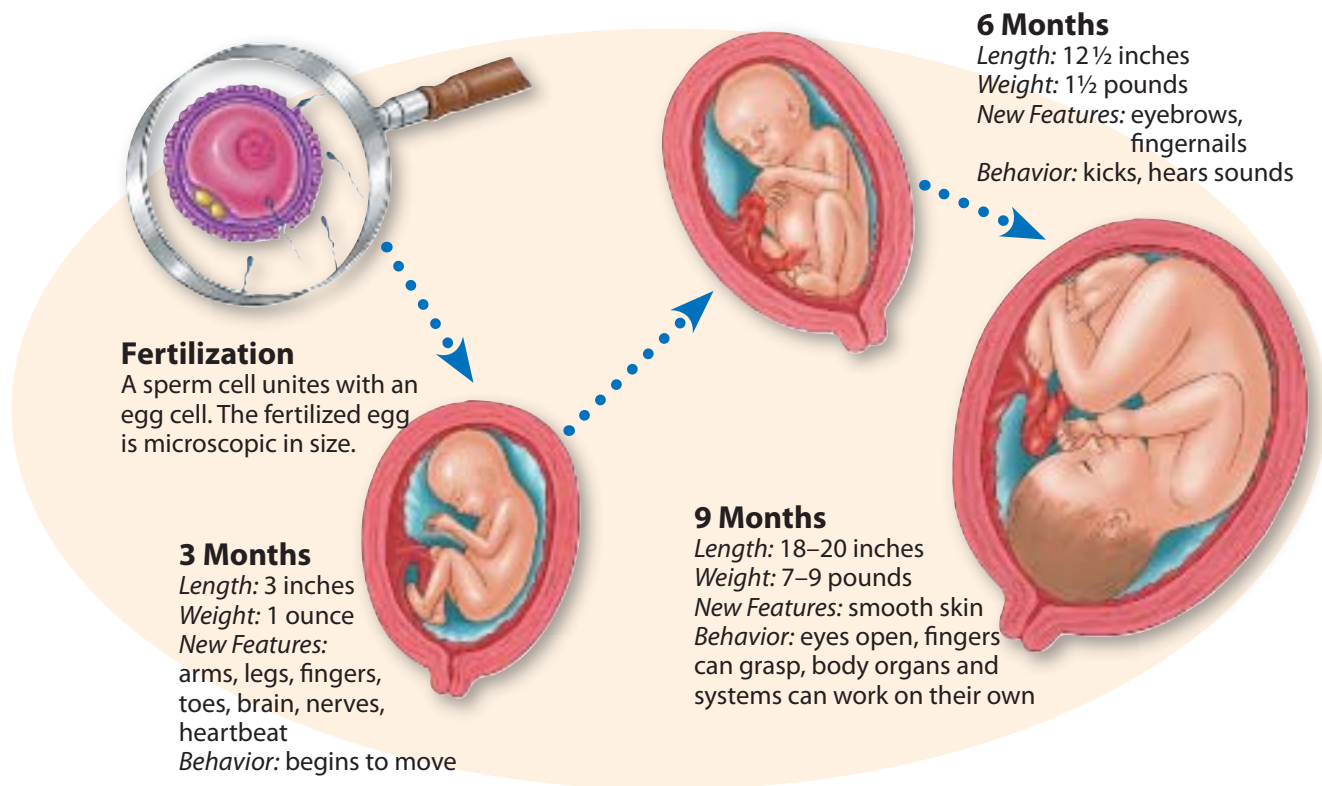
The teacher had a complex method for determining each student's grade on the science project.

▼ FIGURE 12.9

STAGES OF FETAL DEVELOPMENT

This diagram shows the stages of development a fetus goes through.

When does a fetus develop eyebrows and fingernails?



- **Have regular checkups.** The doctor will monitor both the mother's health and the fetus's development. An expectant mother should also take prenatal vitamins as recommended by the doctor.
- **Beware of infections.** Some diseases are very dangerous to the fetus. For example, rubella (also called German measles) and some sexually transmitted diseases can cause problems.
- **Don't use tobacco.** Smoking, chewing tobacco, and breathing secondhand smoke can be harmful to the fetus.
- **Don't drink alcohol.** This can cause a fetus to develop fetal alcohol syndrome (FAS) or fetal alcohol effects. Sometimes the problems are mild, such as having a small size at birth. At other times, they are severe. The child may have brain damage, mental retardation, learning disabilities, or emotional problems.
- **Don't take any unnecessary drugs.** Any medicine or illegal drug can affect the growth and development of a fetus. A pregnant female should take medication only if absolutely necessary and only as instructed by her doctor. She should also avoid all illegal drugs.

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 5.

Parenthood

Parenthood involves making a lifelong commitment to another person. There are personal, social, and legal responsibilities associated with parenthood. Parents are responsible for providing physical care, such as a place to live, food, clothing, and medical care. Parents must also meet their children's emotional needs. Children need love, attention, and guidance. They also need to learn social skills, or how to get along with others. Parents should be good role models for their children. They should demonstrate good character traits, such as fairness, trust, caring, and respect.

- ▶ An expectant mother gives her baby solid nourishment by eating a healthful diet. **How is eating healthfully important to a pregnant female and her baby?**



Lesson 5 Review

After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define *chromosomes*.
2. **Identify** List four levels of body organization from most complex to most basic.
3. **Describe** Describe the development of a human from the point of fertilization to birth.
4. **List** What are four ways that a pregnant female can care for her developing baby?

Thinking Critically

5. **Apply** A test of Ling's fetus shows that its cells each have one more chromosome than normal human cells. How many chromosomes does each of the fetus's cells have?

6. **Analyze** Using the information given in Figure 12.9, calculate the weight that the developing fetus gains at each three-month stage. During which stage does it gain the most weight?

Applying Health Skills

7. **Analyzing Influences** Imagine that your aunt is going to have a baby. Both she and her husband smoke cigarettes. However, your aunt has decided to quit during her pregnancy. Your uncle says he doesn't need to quit. What information or advice might you give your aunt and uncle?

Lesson 6

The Life Cycle

Guide to Reading

● Building Vocabulary

Look up the meaning of the word *toddle*. Write a sentence to explain why you think it is used to describe toddlers.

- infancy (p. 389)
- toddler (p. 389)
- preschooler (p. 389)

● Focusing on the Main Ideas

In this lesson, you will learn to

- **describe** the stages of life.
- **identify** the ways in which adolescence will prepare you for adulthood.
- **list** ways to reduce stress in your life.

● Reading Strategy

Organizing Information As you read this lesson, make a list of events that happen at different stages of the life cycle.

Quick Write

Describe a time that you or someone you know played with a baby or helped care for one. What could the baby do without your help? What did you have to help the baby do?

The Stages of Life

A fetus develops and changes over the nine months of pregnancy. It develops certain behaviors at different times. When the fetus is fully developed, the mother feels strong contractions. These help push the baby out of her body. After birth, the baby will continue to develop certain behaviors during different stages of life. These different stages that people go through in life are all part of the human life cycle.



- ▶ Babies learn to interact with their surrounding world.
Why might it be important to provide infants with a variety of toys?

Infancy

Infancy is the first year of life after birth. At this time, a baby grows rapidly in weight and in size. In fact, the baby's weight triples, and the size increases by half. Infants begin to observe the world around them. They do this by watching, touching, tasting, and listening. Soon, the baby learns to respond to those nearby. He or she may start to smile and make sounds. The baby learns to reach for objects and crawl.

By the end of infancy, babies can recognize some words and may even say a few of them. Within a year, they learn to sit up by themselves and can often pull themselves up into a standing position.

Childhood

Next, a child becomes a toddler. A **toddler** is a child between the ages of one and three. While toddlers continue to grow in weight and size, they don't do so as rapidly as when they were infants. They learn to do many activities. They can feed themselves, scribble on paper, and use the toilet. Their language skills begin to develop, and they begin to talk to others. Also, they become very physically active. They can walk, run, and climb on their own. Toddlers are very curious, and they learn quickly.

The toddler soon becomes a **preschooler**, a child between ages three and five. Preschoolers begin to develop complex physical skills. For example, they can use a paintbrush, button their clothes, and ride a tricycle. Their mental skills develop, too, and they enjoy using their imagination. They like to pretend and to imitate others. Preschoolers learn how to follow rules and how to express their needs. They also start to make friends.

The period between ages 6 and 11 is called late childhood. In this period, physical growth continues, and children become stronger and more coordinated. They enter school and continue to develop their social skills. They make friends and participate in social activities. Overall, they learn to do many things on their own and need less and less adult supervision.

Adolescence

The next stage is called adolescence. This period, usually between the ages of 12 and 18, brings rapid growth and development. The many physical changes that occur help prepare the body for

What Teens THINK

How does a friendship change from childhood to the teen years?

Your friendship gets stronger because you start facing more challenges. When you overcome them, whether it's gossip or a misunderstanding, you're reminded of how your friend will always be there for you. You become even greater friends because you've known each other longer.

Rachel R.
Camarillo, CA



- ▶ As Amy gets older, she becomes more and more independent. **How do the things you learn as a child help prepare you for life as an adult?**



(i) A. Ramey/PhotoEdit; (ii) Francisco Cruz/AGE Fotostock

reproduction. The mental, emotional, and social changes help prepare a person for the challenges of adulthood.

During adolescence, teens begin to take on more and more responsibilities in both their households and in their communities. Many of the choices they make will help shape the paths they take as adults.

Adulthood

At about age 19, the stage called young adulthood begins. At this time, physical growth slows significantly, but young adults continue to grow mentally, emotionally, and socially. Many young adults become independent. They often live on their own and begin their careers. Many develop deeper relationships with others, marry, and have children.

Then comes what is called middle age. Adults in their thirties, forties, and fifties continue to strengthen their careers, relationships, and families. During these years, most adults focus on their jobs and children. Some take classes to learn new skills.

After middle age, adults begin to show signs of physical aging. Some people in their mid-sixties and older may decide to retire. Despite showing signs of aging, many people continue to be very physically active, often long into their retirement years. They may travel, enjoy new hobbies, and become more involved in their communities. Exercise is important at all stages of life. Exercise helps prevent disease and other health problems, allowing you to do the things you like to do.

In time, though, a person's body systems begin to weaken, and he or she eventually dies. Death is the final part of the human life cycle. It is important to see dying as a natural part of the life cycle.

- ▼ Try some different activities. They can often help you discover what you enjoy. **How can hobbies improve your health?**



Reading Check

Explain When can you see signs of an adult's physical aging?



Health Skills Activity

Stress Management

Strategies for Reducing Stress

As you grow, you'll face new challenges at school, at work, at home, and with your social groups. While new classes, activities and sports at school, and making new friends can be exciting and fun, they can also bring on stress. Too much stress can harm your physical, mental/emotional, and social health. It can make it harder to make important decisions. To lead a healthy lifestyle, it's important to find ways to reduce the stress in your life.

On Your Own

Make a list of at least five stresses in your life. Identify which of these stresses, if any, can be avoided. Then make a list of at least five ways to relax. Think about how you can do some of these relaxing activities during your daily life.

Preparing for Adulthood

How are adolescence and adulthood connected? The physical, mental, emotional, and social growth you make during adolescence prepares you for adulthood. You learn to make important decisions that can affect your health. In fact, many of the decisions you make as an adolescent will affect you long into your adulthood.

Reducing Risk

Do you want to lead a long and healthy life? Then consider the consequences of your day-to-day actions. These guidelines can help you stay safe and healthy.

- **Protect yourself from injury.** Stay safe at home and at school. Always wear a safety belt when riding in a vehicle. Wear protective gear when participating in sports. Do the same if you ever have to work with dangerous chemicals or machines. Know how to protect yourself if there's a fire or other emergency.
- **Choose a healthy lifestyle.** Be sure to eat a nutritious diet. Get plenty of physical activity. Figure out the best way for you to manage stress, and get enough

▼ Buckle up! Do what you can to stay safe and healthy. **In what ways can you reduce risk in your daily life?**





Go Online

Topic: Across the Ages

Visit glencoe.com for Student Web Activities where you will learn how teens and older adults can benefit from spending time together.

Activity: Using the information provided at the link above, create a flyer that encourages teens to get to know older adults.

▼ People develop strong relationships in adulthood. **What kind of social changes can happen to someone as he or she becomes an adult?**

sleep and rest. All of these things will reduce your risk of developing many diseases later in life, such as heart disease and cancer.

- **Don't use drugs.** Be wise when it comes to using medicines. Stay drug free so you can protect your health. Do your best to avoid social situations in which drugs might be offered to you. Remember, drugs can permanently damage your body and mind.
- **Avoid tobacco and alcohol.** Smoking cigarettes, chewing tobacco, and inhaling secondhand tobacco smoke can cause many serious health problems, including cancer. Using alcohol can cause you to make poor decisions. It can also slow your reflexes. These effects can have many negative, even deadly, consequences. Continued use of alcohol can damage your liver and digestive system.
- **Avoid sexual activity.** By choosing to avoid sexual activity until marriage, you can prevent an unplanned pregnancy and sexually transmitted diseases, including HIV. These can damage your physical health and may even cause death. Practicing abstinence from sexual activity will also protect you from the many difficult emotional and social consequences associated with sexual activity.



Reading Check

Explain How does practicing abstinence from sexual activity benefit your health?



Moving Toward the Future

The teen years are a time of growth and development—physically, mentally, emotionally, and socially. The experiences you have and the knowledge you gain as a teen will help you meet the challenges of adulthood. During adolescence, you explore who you are and find out what’s important to you. You become more independent in your thoughts and feelings. As you discover how to solve problems and make important decisions, you will learn to take responsibility for your actions. You’ll also learn that effort, ability, and chance are factors in your future success and failures. The teen years are a time to discover what makes you a unique individual.

During your teen years, your relationships with other people will mature, and you’ll develop a greater interest in your community and the world. You’ll also begin to make plans for what you want to do as an adult. An interest or hobby that you have now could develop into a rewarding career. So make the most of your teen years by caring for your personal health and preparing for your future.

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 6.

Lesson 6 Review

After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define *infancy*, and use it in a sentence.
2. **List** Identify four choices you can make to reduce risk in your life.
3. **Give Examples** In what ways do your teen years prepare you for adult life?
4. **Explain** How does death relate to the human life cycle?

Thinking Critically

5. **Apply** Brent is feeling pressure to engage in sexual activity with his girlfriend. What would you say to Brent to encourage him to make the healthful choice of abstaining from sexual activity?

6. **Infer** How do a teen’s responsibilities at school prepare him or her for adulthood?

Applying Health Skills

7. **Accessing Information** Make a list of three careers that might interest you. Do research to find out what kind of education, training, or experience you would need to have a job in each career. Then identify at least two activities you could do as a teen to prepare for each career.

Building Health Skills

Accessing Information
Practicing Healthful Behaviors
Stress Management
Analyzing Influences
Communication Skills

Refusal Skills

Conflict Resolution
Decision Making
Goal Setting
Advocacy

What Are Refusal Skills?

Refusal skills are strategies that help you say no effectively. If a peer asks you to engage in risky behavior, like sexual activity, remember the S.T.O.P. formula:

- **Say no firmly.** Be direct and clearly state how you feel. Use direct eye contact and keep your statement short.
- **Tell why not.** Use “I” messages to give your reasons.
- **Offer another idea.** Suggest an activity that does not involve sexual activity.
- **Promptly leave.** If you have to, just walk away.

Using S.T.O.P. to Choose Abstinence

Follow the Model, Practice, and Apply steps to help you master this important health skill.

1 Model

Read how Felisha uses the S.T.O.P. strategy to say no to an uncomfortable situation.

Felisha and Darnell just started dating. One day, Darnell invited Felisha to his house to watch a movie. When she arrived, she discovered that they were alone.

DARNELL: “I thought it would be nice if we were by ourselves.”

FELISHA: “No, I won’t stay here if your mom or dad isn’t home.” (**Say no firmly**)

FELISHA: “My parents wouldn’t want me to be alone with you.” (**Tell why not**)

FELISHA: “Why don’t we go to my house and watch the movie?” (**Offer another idea**)

DARNELL: “Your parents won’t find out.”

FELISHA: “I’m going home.” (**Promptly leave**)



2 Practice

Dan and his friends need to use refusal skills to say no to tobacco. Read the following passage and then practice refusal skills by answering the questions that follow.

Dan and Laura were hanging out with friends after school. Laura offered everyone a cigarette.

1. Why might Dan and the other teens want to avoid this risky behavior?
2. Write a dialogue that shows how the teens apply the S.T.O.P. strategy to avoid this risky behavior.



3 Apply

Apply what you have learned about refusal skills by completing the activity below.

In small groups, brainstorm situations in which a teen would need to use refusal skills to avoid a risky behavior. Choose one idea and write a brief description of the situation. Descriptions should include the following:

1. The circumstances that put the teen in danger of engaging in a risky behavior.
2. The teen's reasons for wanting to abstain from the risky behavior.

Based on your description, write a scene showing how the teen uses the S.T.O.P. strategy to avoid the risky behavior. If time permits, role-play your scenario for the class.

Self-Check

- Did we describe a risky situation that a teen would need to avoid?
- Did we give reasons for the teen to avoid the behavior?
- Did our scene show how the teen uses S.T.O.P. to avoid the risky behavior?



Analyzing Inherited Traits

You might have a chin just like your mother's. Your brother's eyes might look just like your father's. Do all family members have the same features? How about hair color, eye color, or the ability to play the guitar? Which traits are caused by heredity? Which are influenced by one's environment?

Believe it or not, even the food you like can result from inherited traits. Some people enjoy or dislike certain foods because they are influenced by family or friends. However, scientists have shown that some people taste a chemical in broccoli that is bitter and others don't taste it at all. The ability to taste the chemical is genetic. Knowing whether a feature is the result of genes, your environment, or a little bit of both might require some serious investigation.

What You Will Need

- Salt substitute (sold in grocery stores)
- Cotton swabs
- Paper cups of water



What You Will Do

- 1 Your teacher will hand out the materials to each student and will write the headings "Tasters" and "Non-tasters" on the board.
- 2 Put a small amount of salt substitute on your tongue, and record if it tastes bitter. If you wish, take a sip of water afterward.

- 3 When called upon, add your reaction under one of the two headings on the board.
- 4 After all the students have recorded their reactions, the class will calculate the percentage of "tasters" by dividing the number of "tasters" by the number of students who participated in the activity.

Wrapping It Up

Seventy-five percent of the population has the dominant gene that makes them "tasters." How does your class compare? Do you think age makes a difference? Does gender make a difference? What other factors might influence this test?



Visit glencoe.com to download quizzes and eFlashcards for Chapter 12.

FOLDABLES® Study Organizer

Foldables® and Other Study Aids Take out the Foldable® that you created for Lesson 1 and any graphic organizers that you created for Lessons 1–6. Find a partner and quiz each other using these study aids.

Lesson 1 Changes During Adolescence

Main Idea The physical, mental, emotional, and social changes of adolescence prepare you for adulthood.

- Teens go through puberty at different rates.
- During adolescence, teens begin to form their own opinions and beliefs.

Lesson 2 The Endocrine System

Main Idea The endocrine system is made up of glands that regulate body functions.

- Endocrine glands include the thyroid gland, parathyroid glands, adrenal glands, ovaries, pituitary gland, pancreas, and testes.
- One major role of the endocrine system is to regulate metabolism.

Lesson 3 The Male Reproductive System

Main Idea The main function of the male reproductive system is to produce sperm.

- When a sperm cell fertilizes a female's egg cell, a new life is formed.
- Problems of the male reproductive system include inguinal hernia, prostate and testicular cancers, testicular torsion, and sterility.

Lesson 4 The Female Reproductive System

Main Idea The main functions of the female reproduction system are to produce egg cells, to create a new life, and to give birth.

- The menstrual cycle prepares a woman for reproduction.
- Problems of the female reproductive system include yeast infections, vaginitis, toxic shock syndrome, cancer, sterility, and infertility.

Lesson 5 Heredity and Human Development

Main Idea When an egg cell is fertilized, inherited traits are passed from parent to child through chromosomes.

- The body is organized into cells, tissues, organs, and body systems.
- A fertilized egg, or zygote, becomes an embryo, then a fetus.
- An expectant mother should eat healthy foods and have regular checkups. She should also avoid tobacco, alcohol, and other drugs.

Lesson 6 The Life Cycle

Main Idea The stages of life are infancy, childhood, adolescence, and adulthood.

- Exercise can help prevent diseases and other health problems at all stages of life.
- To protect your health, avoid injury; choose a healthy lifestyle; avoid tobacco, alcohol, and other drugs; and practice abstinence.

After You Read

HEALTH QUIZ

Now that you have read the chapter, look back at your answers to the Health Quiz on the chapter opener. What would your answers be now?

Reviewing Vocabulary and Main Ideas

On a sheet of paper, write the numbers 1–6. After each number, write the term from the list that best completes each statement.

- puberty
- adolescence
- reproduction
- hormones
- testes
- metabolism

Lesson 1 Changes During Adolescence

1. The stage of life between childhood and adulthood is _____.
2. _____ is the time when a person develops the physical characteristics of his or her gender.

Lesson 2 The Endocrine System

3. Progesterone, estrogen, and testosterone are examples of _____.
4. _____ is the process by which the body gets energy from food.

Lesson 3 The Male Reproductive System

5. Without the process of _____, humans could not produce children.
6. The pair of endocrine glands that produce sperm are the _____.

Lesson 4 The Female Reproductive System

On a sheet of paper, write the numbers 7–8. After each number, write the letter of the answer that best completes each statement.

7. _____ takes place once about every 28 days in females.
 - a. metabolism
 - b. hormones
 - c. ovulation
 - d. puberty
8. The joining of a male sperm cell and a female egg cell to form a zygote is called _____.
 - a. fertilization
 - b. puberty
 - c. fetus
 - d. ovulation

On a sheet of paper, write the numbers 9–12. Write **True** or **False** for each statement below. If the statement is false, change the underlined word or phrase to make it true.

Lesson 5 Heredity and Human Development

9. A fetus differs from an embryo in that a fetus is less than 8 weeks old.
10. A tissue is a group of similar cells that do a particular job.

Lesson 6 The Life Cycle

11. A toddler is a child in the stage of life that occurs right after infancy.
12. A child between ages three and five is a toddler.



Thinking Critically

Using complete sentences, answer the following questions on a sheet of paper.

13. **Synthesize** How might the endocrine system affect other body systems? Give three examples.
14. **Summarize** Describe the paths that a sperm cell and an egg cell take before fertilization. Describe the path that the fertilized egg takes once fertilization has occurred.

Write About It

15. **Persuasive Writing** A friend wants to go to a party where there will be drugs and alcohol. Write a dialogue in which you tell your friend about the dangers of alcohol and drug use and encourage him or her to avoid the party.



Applying Technology

Growth and Change

Use the textbook and medical resources to develop a PowerPoint® presentation that reflects a clear understanding of the changes teens go through during adolescence. Follow the steps below to complete your project.

- Create charts and add clip-art to illustrate the mental, emotional, physical, and social changes experienced during adolescence.
- Create text to support each illustration.
- Open a new PowerPoint® project with 8–10 slides. Select the slide layout that has both an image and text box.
- Import one image onto each slide, and insert text where applicable.
- Edit for clarity and punctuation.
- Save your work.

Standardized Test Practice

Writing

Read the prompts below. On a separate sheet of paper, write an essay that addresses each prompt. Use information from the chapter to support your writing.

1. Imagine that you have been given a group assignment at school. It requires several hours of work each week for a month. One of your group members said that his house can be the meeting place for the group. His parents smoke, however, and at the first meeting, the secondhand smoke irritates your lungs. It also makes your clothes smell. How does this situation introduce risk in your life? Write an essay that describes how you might reduce that risk while still completing the group assignment. Give at least three solutions to the problem.
2. When a person reaches puberty, his or her reproductive system develops the ability to produce a child. However, he or she is not ready to be a parent. Explain why an adolescent is unable to care for a child. What steps can an adolescent take to reduce the risk of becoming a teen parent?

TEST-TAKING TIP

Find out how much time you have to write your essay. Use this time wisely. Spend some of the time at the beginning of the test organizing your thoughts and planning out your essay. Save some time at the end of the test so you can revise and review your essay.