



LIFE·PAC®

# Health Quest

Student Book

Unit 1



Alpha Omega Publications®

**HEALTH QUEST PENTATHLON  
LIFEPAC ONE  
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# HEALTH QUEST PENTATHLON: ONE

## OBJECTIVES

**Read these objectives.** The objectives tell you what you should be able to do when you have successfully completed this Health Quest LIFEPAAC.

1. You will learn that you are a special creation of God.
2. You will learn the importance of health.
3. You will learn to identify the different body systems and their basic functions.
4. You will learn to list the different stages of growth from conception to birth.
5. You will learn to identify the physical, social, emotional, and mental changes that occur during adolescence.
6. You will learn about the decisions and responsibilities of adulthood.
7. You will learn to explain why Christians should not worry about the future.

## VOCABULARY

**Study these new words.** Learning the meanings of these terms is a good study habit and will improve your learning success in this LIFEPAAC.

**atrium** An upper chamber of the heart that receives blood from the body.

**blood vessels** Any one of the arteries, veins, or capillaries that carry blood through the body.

**capillaries** Tiny blood vessels that pass food and oxygen to cells and pass waste from cells to veins.

**carbon dioxide** A gas expelled by body cells that is found in the atmosphere.

**cell** A basic unit of living things.

**conscious control** The use of the brain to guide.

**contract** To draw together.

**coordination** To be able to use parts of the body together with ease.

**digestion** The process by which food is converted into a form that can be used by cells.

**fertilize** To unite a male reproductive cell with a female reproductive cell.

**function** To perform in the required way.

**hormone** A chemical released by the endocrine system into the bloodstream.

**organ** A part of the body made of different kinds of tissue to perform a specific function.

**structure** Anything that is built or created in an organized manner.

**system** A specific group of organs which work together as a unit.

**urine** A liquid filtered from the blood by the kidneys and discharged from the body as waste.

**vein** A blood vessel that carries blood back to the heart.

**ventricle** A lower chamber of the heart that sends blood to the body.

**villi** Hair-like parts in the small intestine that absorb nutrients from the food.



**Introduction.** Welcome, welcome, welcome!! Training Camp is about to begin! What? You didn't know you were at training camp? Training for what?

Well, you are about to begin the Health Quest Pentathlon, a series of five LIFEPACs with corresponding training activities that will best prepare you and your body for your life ahead.

**Health** is defined in the dictionary as the condition of being sound in body, mind, or soul, especially being free from physical disease or pain.

**Quest** means investigating, searching, or pursuing something, often involving an adventurous journey.

**Pentathlon** refers to an athletic contest involving participation by each contestant in five different events.

Pierre de Coubertin created the modern pentathlon. He based the events on the story

of a military messenger during Napoleon's time. The messenger, the story goes, delivered his message over land and water, having to both run and ride a horse.

The modern pentathlon consists of five events which are held on one day. The competitor must:

1. swim a 300-meter freestyle,
2. run a 4000-meter cross-country,
3. ride a 5000-meter, 30-jump equestrian steeplechase,
4. fence, and
5. shoot a target at 25 meters.

In practical, everyday terms, Health Quest Pentathlon sets you on a track course that will involve 5 different events (one for each LIFEPAC) and multitudes of activities to teach you about good health. You'll be given many opportunities to apply good habits to your body and mind.





Meet Chester and Esther. We call them the Questers. They will be your personal guides throughout this course. They were in the class just before you. They learned about health and putting it into good practice in their own lives, homes, families, communities, and the world around them. Now, it's your turn and, thank goodness, you have their experience to help guide you through the Health Quest Pentathlon.

Before each Health Quest Pentathlon (HQP) quiz, you will find activities relating to what you've just learned. Doing these activities will earn you stickers that will complete that LIFEPAAC's Pentathlon event. Take a few minutes now to read through the activities after each quiz. Knowing what the activities are will help you plan ahead.



LIFEPAC 1 highlights the 100-meter dash. This is a great event with which to start the course, because the 100-meter runner has to rely on every portion of his body to supply him immediate power to run his race. The first LIFEPAC focuses on all the parts of the body working together for good health.

Locate this event on your Health Quest Pentathlon poster. As you move through the LIFEPAC activities, you will also move around the Pentathlon track. Each time you complete the Health Quest Pentathlon activities at the end of each LIFEPAC section, you will receive

a gold medal to place on a segment of the track.

By the end of LIFEPAC 1 and completion of the activities, your 100-meter runner will have completed his portion of the Pentathlon. Then it's time to move on to LIFEPAC 2 and the next HQP event.

Just like any sporting or Olympic event, the Health Quest Pentathlon has guidelines for training. The training manual comes straight from the Bible where God tells us about our bodies and gives us guidelines for use and care.



**Look up Psalm 139:1–16.** This Psalm tells how carefully and wonderfully God designed and created our bodies. Use the King James Version to fill in the missing words below from Psalm 139:1–16 (found on page 42 of this LIFEPAK). Stay on your toes because a portion of this will be a Bible recitation activity later in this LIFEPAK.

**1.1 Complete Psalm 139:1–16.**

O Lord, thou hast searched me, and \_\_\_\_\_ me.

Thou knowest my \_\_\_\_\_ and mine \_\_\_\_\_ ,  
thou understandest my thought afar off.

Thou compassest my \_\_\_\_\_ and my lying \_\_\_\_\_ , and  
art acquainted with all my \_\_\_\_\_ .

For there is not a \_\_\_\_\_ in my \_\_\_\_\_ , but, lo, O  
Lord, thou \_\_\_\_\_ it altogether.

Thou hast \_\_\_\_\_ me behind and \_\_\_\_\_ , and  
\_\_\_\_\_ thine \_\_\_\_\_ upon me.

Such knowledge is too \_\_\_\_\_ for me; it is \_\_\_\_\_ ,  
I cannot attain unto it.

Whither shall I go from thy \_\_\_\_\_ ? or whither shall I  
\_\_\_\_\_ from thy presence?

If I ascend up into \_\_\_\_\_ , thou art there: if I make my  
\_\_\_\_\_ in \_\_\_\_\_ , behold, thou art there.

If I take the \_\_\_\_\_ of the morning, and dwell in the  
\_\_\_\_\_ parts of the \_\_\_\_\_ ;

Even there shall thy \_\_\_\_\_ lead me, and thy \_\_\_\_\_  
hand shall hold me.

If I say, Surely the \_\_\_\_\_ shall cover me; even the  
\_\_\_\_\_ shall be \_\_\_\_\_ about me.

Yea, the darkness \_\_\_\_\_ not from thee; but the  
\_\_\_\_\_ shineth as the day: the \_\_\_\_\_ and  
the \_\_\_\_\_ are both alike to thee.

For thou hast \_\_\_\_\_ my reins: thou hast covered me in  
my \_\_\_\_\_ .

I will praise thee; for I am \_\_\_\_\_ and wonderfully made:  
\_\_\_\_\_ are thy works; and that my \_\_\_\_\_  
knoweth right well.

My \_\_\_\_\_ was not hid from thee, when I was made  
in \_\_\_\_\_, and \_\_\_\_\_ wrought in the  
lowest parts of the earth.

Thine eyes did see my substance, yet being \_\_\_\_\_;  
and in thy \_\_\_\_\_ all my members were \_\_\_\_\_,  
which in continuance were fashioned, when as yet there was  
\_\_\_\_\_ of \_\_\_\_\_.



**Answer these questions. Many students your age say Psalm 139 is their favorite portion of Scripture. What are four (4) things you learn about God's care for you from these verses?**

1.2

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_
- d. \_\_\_\_\_  
\_\_\_\_\_



Adult check \_\_\_\_\_

Initial

Date

As you work through LIFEPAK 1, you will find many marvelous things about the way God created you and your body. Remember to join David when he says to the LORD, "I will praise you, for I am fearfully and wonderfully made."

Are you ready to start your quest? Then let's go!

# I. YOUR BODY'S BUILDING BLOCKS AND FRAMEWORK

**Cells.** Just look at yourself. Your body is an amazing creation. You can't see them, but your body is made up of trillions of tiny parts called cells. Cells are the smallest structural unit of your body. Each day your body creates more cells. They are important to your growth and development. Think of them as bricks in a wall. Without them stacked neatly on top of one another, the wall would crumble. Your body functions much the same way. If you do not have cells growing and working together, then your body will crumble. Good health is important to the cells in your body, because cells are just the basic building blocks in your amazing body.

**Tissue.** There are different kinds of cells within your body. They were created to do a job. Some relay messages to the brain. Others move blood through your veins.

Tissues are made of the same kind of cells. The muscle in your arm is one kind of tissue, and the bone in your arm is another kind of tissue.

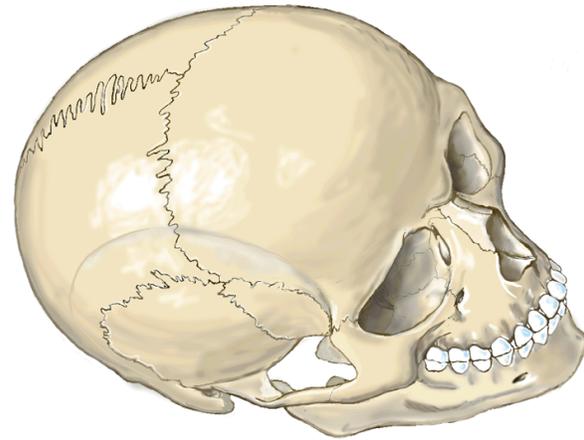
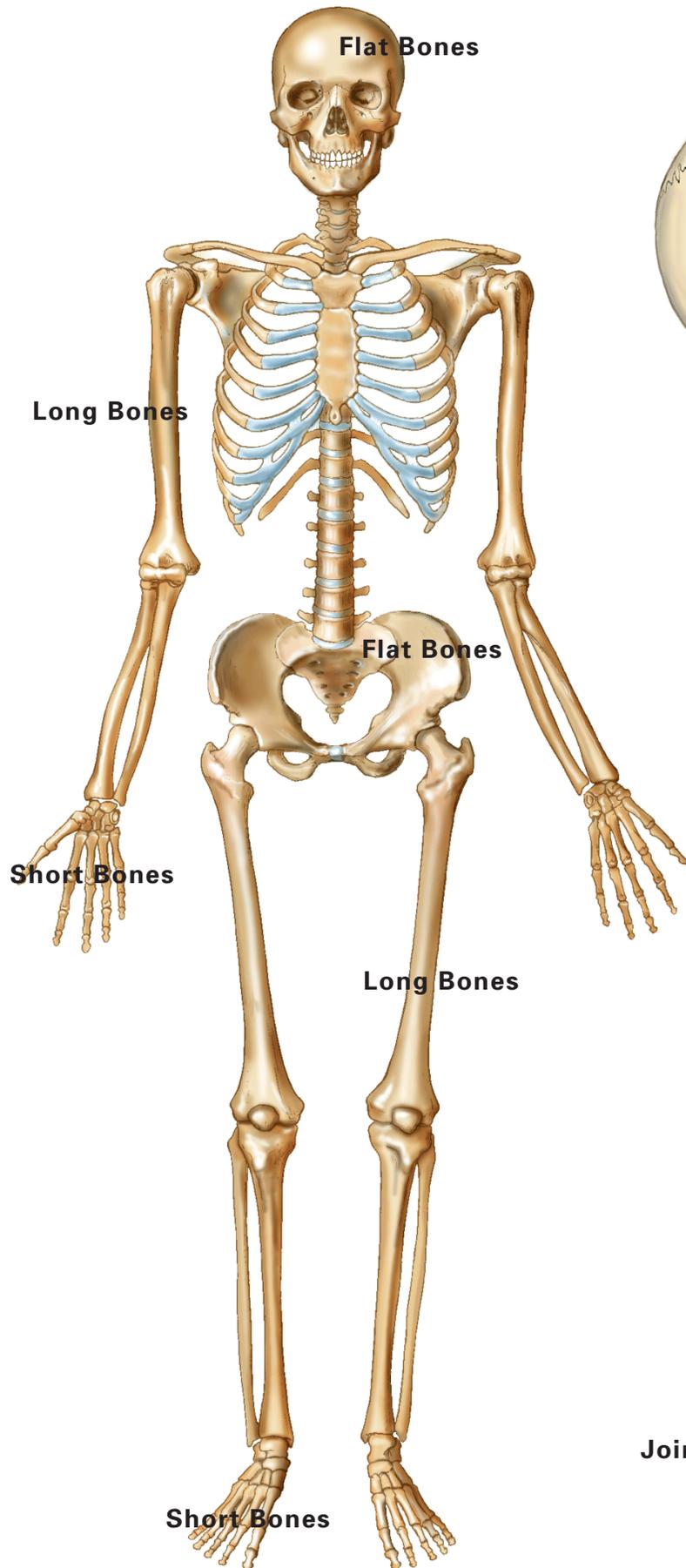
**Organs.** Different kinds of tissues work together. Organs are made of different kinds of tissues that work together. Your eyes are made up of many kinds of tissues. Right this moment, as you are reading this line, the muscle tissues that move your eye are receiving instructions from your brain through the nerve tissues. The tissues are working together as an organ. Organs also work together with other organs as a system. Your brain and the nerve tissue in your eye work together as part of your body's nervous system. You will learn more about your body's different systems and their functions in this section.



**Fill in the blanks with the right words or phrases.**

- 1.3 \_\_\_\_\_ is the condition of being sound in body and mind and free from \_\_\_\_\_ or \_\_\_\_\_.
- 1.4 \_\_\_\_\_ is an athletic contest involving participation by each contestant in \_\_\_\_\_ different events.
- 1.5 Being on a quest means to \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ something that often involves an adventurous journey.
- 1.6 \_\_\_\_\_ are the smallest structural units of the body.
- 1.7 Cells are the basic \_\_\_\_\_ of our bodies.
- 1.8 There are different kinds of \_\_\_\_\_ in your body that were created to do a job.
- 1.9 \_\_\_\_\_ are made of the same kinds of cells.
- 1.10 \_\_\_\_\_ are made of different kinds of tissues that work together.
- 1.11 Organs also work \_\_\_\_\_ with other \_\_\_\_\_ as a system.

# Human Skeletal System



The flat bones of your skull protect your brain like a helmet.



Joints are where bones come together.

**Skeletal System.** Why do you need bones? Without bones, your body would just be a pile of tissue. Without a skeleton, you would not be able to run, jump, or even sit in a chair.

Bones fitted together in the shape of a skeleton give your body structure. Bones also serve to protect your vital organs from harm. Ounce for ounce, bone is stronger than steel.

There are 206 bones in your body that work together to form the skeletal system. Each bone was created with a special purpose in mind.

Long bones can be found in your arms and legs. They help you climb stairs and throw a baseball.

Short bones, like those found in your fingers, help you use a pencil or turn the key in a door lock.

Your skull is made up of flat bones. They surround the brain like a helmet, protecting it from harm.

Bones come together at a place called a joint. Movement happens when a muscle that is attached to a joint contracts and pulls on a bone.

Think about it. How would you scratch your head if you did not have an elbow? Joints are made up of ligaments and tendons. Ligaments hold the bones together. Tendons attach the muscles to the bones.



**Complete each statement.**

- 1.12 Bones fitted together in the shape of a \_\_\_\_\_ give the human body structure.
- 1.13 Bones also serve to protect \_\_\_\_\_ from harm.
- 1.14 There are \_\_\_\_\_ bones in the human body that work together to form the \_\_\_\_\_ system.
- 1.15 Long bones can be found in your \_\_\_\_\_ and \_\_\_\_\_.
- 1.16 The \_\_\_\_\_ is made up of flat bones.
- 1.17 Bones come together at a \_\_\_\_\_.
- 1.18 \_\_\_\_\_ hold the bones together.
- 1.19 \_\_\_\_\_ attach the muscles to the bones.



*"An experienced 100-meter track runner runs the length of a football field (100 meters) in less than 10 seconds!"*

**Muscular System.** Has someone ever asked you to “flex”? So you bent your arm as hard as you could to make a muscle pop up on your upper arm. Did you ever stop to think of what was going on underneath your skin?

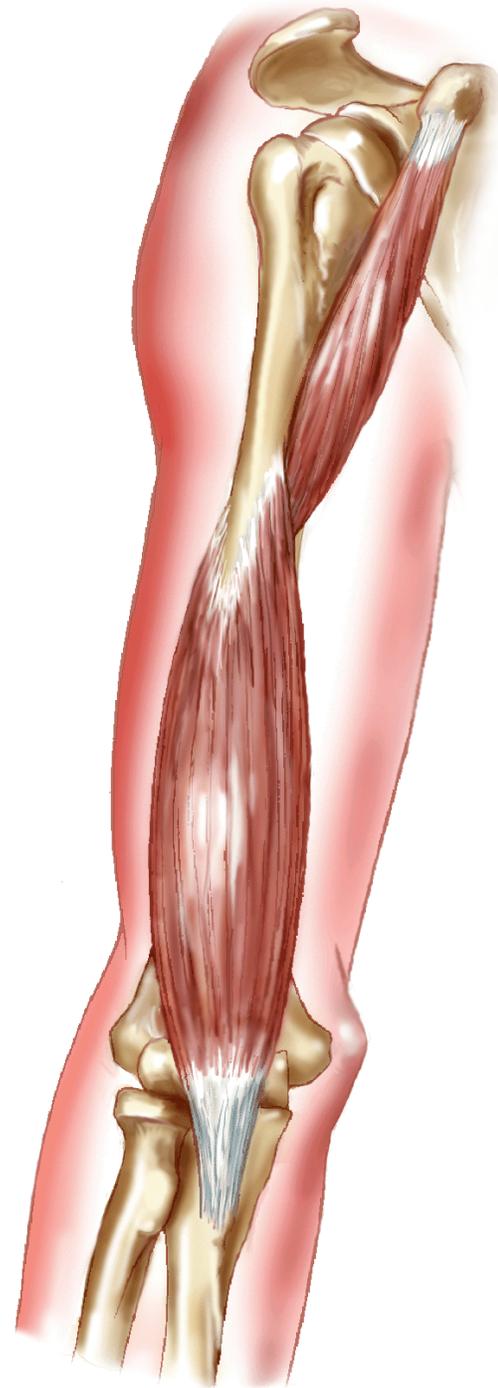
The bulge that you see on your arm is a shortened or contracted muscle. It is pulling on a bone in your arm. If you straighten your arm, the muscle relaxes and becomes flat. But if you feel the underside of your arm, you will feel another muscle. These muscles are working as a team to move your arm.

Muscles just like the ones on your arm cover your skeleton. Muscles work together as a system to help your body move while adding support. Inside your body, muscles help you digest food and pump blood through your veins. Your heart is one big muscle that never stops flexing.

Muscles are not all the same. For example, your legs will not run without you telling them to, but your heart will pump even while you are sleeping.

The muscles that require conscious control are called voluntary muscles. You have to *think* about moving your legs before you can run.

Involuntary muscles, such as those in the walls of your stomach and intestines, work without conscious control. In other words, you don’t need to think about digesting food—your stomach just does it automatically.



*“100-meter track runners step (stride) more than 5 times per second. Each stride spans more than 7 feet!”*





**Complete each statement.**

- 1.20 Muscles work together as a system to help your body \_\_\_\_\_ while adding \_\_\_\_\_.
- 1.21 Inside the human body, muscles help to \_\_\_\_\_ and pump \_\_\_\_\_.
- 1.22 The muscles that require conscious control are called \_\_\_\_\_ muscles.
- 1.23 \_\_\_\_\_ muscles, such as those in the stomach and intestines, work without conscious control.



**HEALTH QUEST PENTATHLON ACTIVITIES**

It's time to put into practice a few things you've been learning about the amazing human body. When you complete these activities, you will have earned your first gold medal and will have completed the first section of the 100-meter dash event on your Health Quest Pentathlon track!



**Complete these activities.**

- 1.24 The bones in your body are made of a chemical mixture of inorganic salts and organic materials. A high concentration of calcium helps keep your bones hard. When your daily diet lacks calcium, your bones may be affected.

Try this experiment in your kitchen: Place a clean chicken bone in the bottom of a small bowl. Pour in enough vinegar to completely cover the chicken bone. Allow the bone to sit in the vinegar for 5–7 days. After 5–7 days, remove the chicken bone and observe it. Note and record the texture and color of the bone.

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Now move and bend the bone. Is the bone more or less flexible than it was before your experiment?

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The vinegar in this experiment served to extract the calcium from the bone. Without calcium, bones become limp and unable to support the body. Serious disease can occur. Milk and milk products are the body's chief source of calcium. Drinking other beverages instead of milk can have a negative impact on your bones.

List 2 ways you can add calcium to your daily diet to insure strong, hard bones.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_



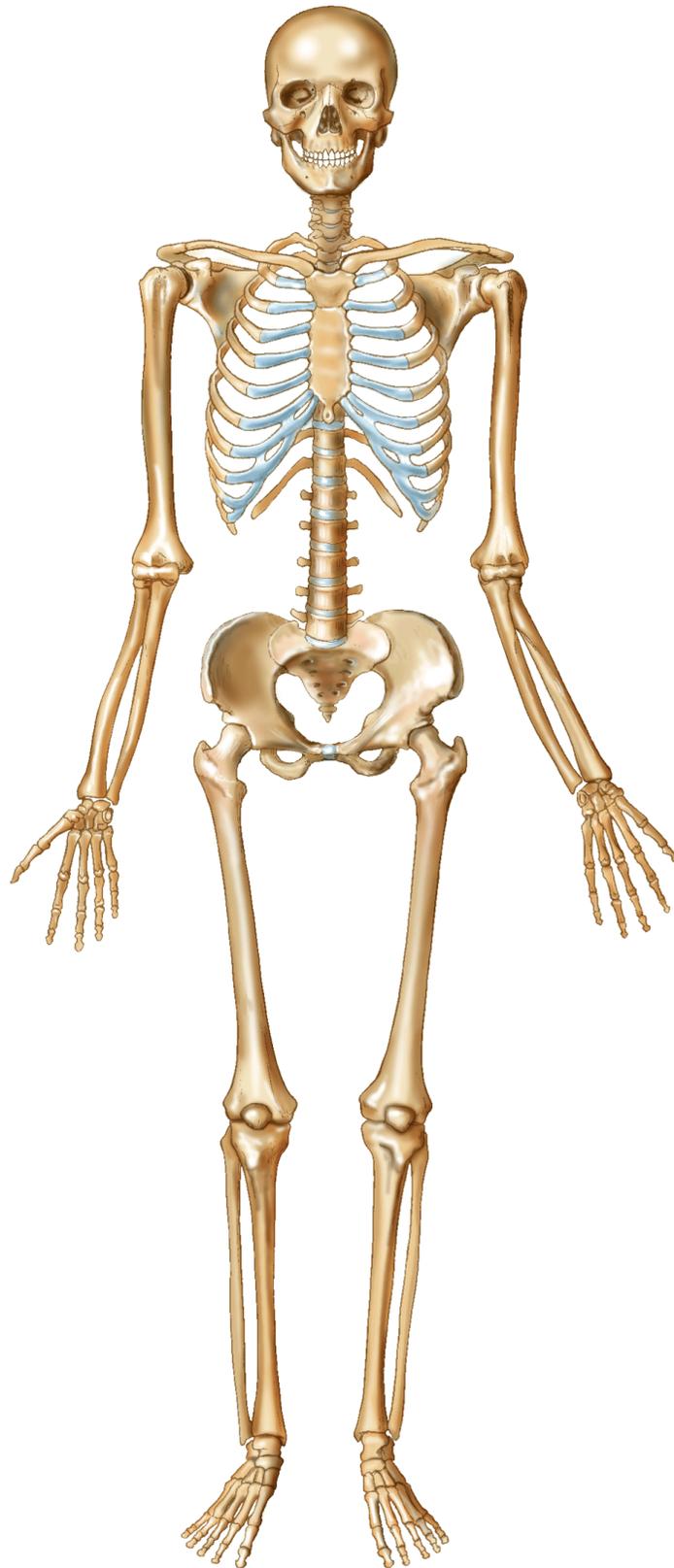
Adult check \_\_\_\_\_

Initial

Date

1.25

Use the picture of a skeleton below to identify the different types of bones. Pay close attention to the placement of the bones. Explain to a classmate or your teacher the function of the long bones, short or small bones and the flat bones found in your skull and pelvis.



Adult check \_\_\_\_\_

Initial \_\_\_\_\_

Date \_\_\_\_\_

1.26



The muscles of the body work together to help your body move. That is why it is important that your body have consistent physical exercise in order to properly develop your muscles. With the help of an adult, measure out a distance of one mile that is close to your home, using your car's odometer. Seek a route that is safe and is used by others to walk or bicycle. Of course, a park or exercise field would be ideal, but even a residential neighborhood can be used. Use safety precautions, and communicate with an adult before you begin to exercise.

- a. On the first day, use a watch and time yourself as you briskly walk the mile. Record the time in the space provided below.

**First Day Results:** \_\_\_\_\_

- b. On the second day, use a watch to time yourself as you bicycle, roller skate, or jog the mile. Record the time in the space below.

**Second Day Results:** \_\_\_\_\_

- c. On the third day, use a watch to time yourself as you walk the mile again, trying to complete the mile distance in less time than when you walked it the first day. Record the time below.

**Third Day Results:** \_\_\_\_\_

- d. On the second day, was your time faster than when you just walked the course?

yes \_\_\_\_\_ no \_\_\_\_\_

- e. Was your second attempt to walk the mile faster than your first? (Note: typically, those who compete in the mile run complete it in under 4 minutes!)

yes \_\_\_\_\_ no \_\_\_\_\_



Adult check \_\_\_\_\_

Initial

Date



*"Questers who exercise regularly and engage in vigorous outdoor activities are better prepared to face the 100-meter dashes of life! You should try to incorporate this mile walk or run every day!"*



Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

## SELF TEST 1

Circle the correct answer(s) in each statement (each answer, 2 points).

- 1.01 Health is the condition of being sound in body and mind and free from physical [**disease, pleasure, comfort**] or pain.
- 1.02 [**Marathon, Pentathlon, Triathlon**] is an athletic contest involving participation by each contestant in five different events.
- 1.03 Cells are the [**smallest, largest, most useless**] structural unit of the human body.
- 1.04 [**Cells, Organs, Tissues**] are made of different kinds of [**bones, tissues, systems**] that work together.
- 1.05 There are [**different, similar, identical**] kinds of cells within the human body that were created to do a job.
- 1.06 Organs also work [**separately, together, unconnected**] with other organs as a system.
- 1.07 [**Bones, Tissues**] fitted together in the shape of a skeleton give the human body [**no form, instability, structure**].
- 1.08 Bones also serve to [**protect, attack, structure**] vital organs from harm.
- 1.09 There are 206 [**cells, tissues, bones**] in the human body that work together to form the [**digestive, circulatory, skeletal**] system.
- 1.010 [**Tendons, Ligaments, Organs**] hold the bones together.
- 1.011 Tendons [**separate, attach**] the [**organs, cells, muscles**] to the bones.
- 1.012 [**Organs, Tissues, Muscles**] work together as a system to add support to the human body and help it move.
- 1.013 The muscles that require conscious control are called [**voluntary, involuntary**] muscles.
- 1.014 [**Voluntary, Involuntary**] muscles, such as those in the walls of the stomach and intestines, work without conscious control.

Complete each statement (each answer, 2 points).

- 1.015 Without \_\_\_\_\_ your body would just be a pile of tissue.
- 1.016 Tissues are composed of the same kind of \_\_\_\_\_.
- 1.017 Different kinds of tissues that work together to perform a certain function are called \_\_\_\_\_.
- 1.018 Bones come together at a place called a \_\_\_\_\_.
- 1.019 One muscle in your body that is always flexing is the \_\_\_\_\_.