LIFEPAC®

Health Quest

Student Book

Unit 3

Alpha Omega Publications®

HEALTH QUEST PENTATHLON
LIFEPAC THREE
CONTENTS

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HEALTH QUEST PENTATHLON: THREE

OBJECTIVES

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

1. You will learn to define nutrition.
2. You will learn the importance of good nutrition.
3. You will learn to name the six different nutrients.
4. You will learn to list the basic food groups.
5 You will learn to define physical fitness.
6. You will learn what exercises that would promote fitness.
7. You will learn to explain why flexibility is important to your health.
8. You will learn to design an exercise program that improves your overall fitness level.

VOCABULARY

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

aerobic Requiring oxygen.

calorie The amount of heat needed to raise the temperature of one kilogram water one degree Centigrade.

carbohydrate The body's main source of energy.

component A part of something.

heredity Characteristics passed down from parents to children.

metabolism The means by which energy is made available to a cell.

nutrition The study of daily food intake and its effects upon the body.

Introduction. Welcome back to Health Quest Pentathlon camp. Chester and Esther are back and anxious to continue as your HQP guides through this third LIFEPAC. We're on to an event that many track athletes consider the most exciting and difficult: the hurdles! So far, you blew past us running the 100 meters and hurled the discus way beyond what Chester or Esther were able to do during their Pentathlon event.

Halfway through this LIFEPAC, you'll cross the Pentathlon midpoint. You'll be halfway round the track and headed toward the finish line!

The Hurdles. Hurdling events are dashes, which require athletes to clear a series of 10 barriers called hurdles. The hurdles are constructed of either metal and wood or metal and plastic. The length of the hurdling course varies from 100 meters (110 yards) to 400 meters (440 yards). The height of the hurdles varies as well. Low hurdles measure about 2'6", intermediate hurdles measure 3' in height, and the high hurdles are 3'6". An average kitchen counter is 3 feet high.

Can you imagine the difficulty in learning to run a course as rapidly as possible while having to jump 10 times without

missing a step? Good hurdling requires an athlete to lean forward as far as possible while elevating just high enough to clear each hurdle smoothly without breaking his running rhythm. The first leg to approach and clear the barrier is brought back down to the track immediately. The trailing leg must clear the hurdle at almost a right angle to the body. The hurdler must develop running speed, incredible flexibility, and excellent coordination. The hurdler is a very agile athlete.

We can't help but point out that your life is very much like the track. God has allowed circumstances and situations in your life similar to these hurdles. If your life seems peaceful right now, you can count on the fact that there will be some hurdles up ahead. Just like the athletes who train to run the hurdles, God expects us to train in order to overcome the obstacles he allows in our lives.

The hurdles we face may be physical ailments, the rocky road of relationships, or the challenge of new situations. Our task, just like the athlete's, is to develop stamina to keep us from quitting, incredible flexibility to adjust to different situations, and excellent coordination so we don't end up *splat* on the track of life!

Throughout this LIFEPAC, we'll be concentrating on your own personal nutrition and exercise. These two factors affect every aspect of your life.

Just like in the first two LIFEPACs, before each HQP quiz you will find activities relating to what you've just learned. Finishing these activities earns you stickers to complete the hurdling event on your Health Quest Pentathlon poster.

So, are you ready? It's time to get training for the hurdles of a lifetime. On your mark, get set, GO!!

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 its use and care.

Complete 1 Corinthians 6:12–13 and 19–20.

1.1 All things are _____ unto me, but all things are not expedient: all things are _____ for me, but I will not be brought under the power of any. Meats for the _____ and the belly for meats, but God shall _____ both it and them. Now the body is not for _____ , but for the _____; and the Lord for the body.

What? know ye not that your _____ is the temple of the _____ _____ which is in you, which ye have of _____, and ye are not your_____? For ye are _____ with a price: therefore _____ God in your body and in your _____, which are God's.

I. NUTRITION

Does it matter whether you eat a candy bar or a banana for a snack? It's only food, right? Food is more than just the stuff that stops you from feeling hungry. Food contains nutrients that supply the body with energy. Think of your body as a car. If you put bad fuel in, then it is not going to run very well. Choosing the banana over the candy is like choosing a more powerful gasoline. Eating foods with the right type of nutrients will help your engine run more efficiently. What you eat affects your overall health. Nutrition is the study of daily food intake and its effects upon the body. Understanding your body's nutritional needs is essential to good health.

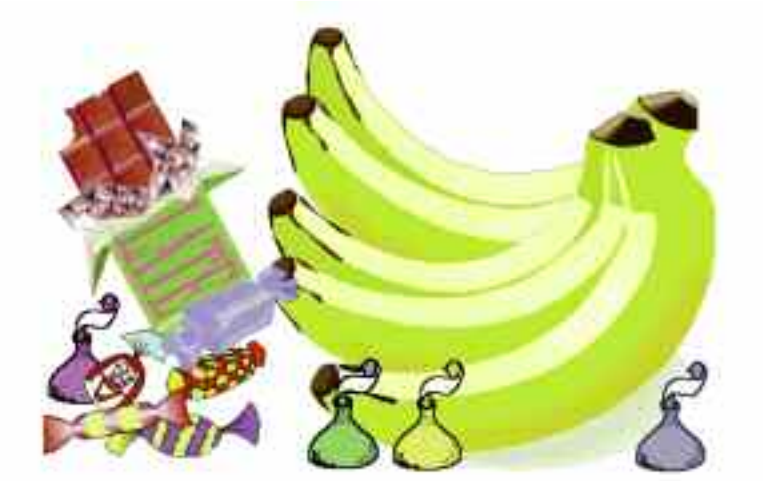
Nutrients provide your body with nourishment. They give your body energy and help it to function correctly. Scientists have concluded that there are 45–50 nutrients within your body. Your body can manufacture some nutrients by using the nutrients already present within your body. But the nutrients that your body cannot make are called essential nutrients. Essential nutrients include water, vitamins, minerals, proteins, carbohydrates, and fats.

"The modern hurdling event appeared in England around 1830, using heavy wooden barriers as hurdles."

Nutrients and Energy. Doesn't a candy bar provide more energy than a banana? Nutrients supply the body with energy. Energy enables the body to maintain a constant temperature and perform important functions. Without energy, you could not walk, talk, or even breathe. Your body temperature would drop to room temperature. Your skin would feel cool.

The amount of energy that food contains is measured by calories. A calorie is the amount of heat needed to raise the temperature of 1 kilogram of water 1 degree Centigrade. On food labels, calories are abbreviated *cal*. Carbohydrates and proteins supply the body with 4 calories for each gram. Fats supply the body with 9 calories for each gram. A candy bar will provide you with more "energy" (or calories) than a banana. The candy contains more fats and carbohydrates, but a banana contains more vitamins and minerals. Vitamins and minerals help the body change food into energy. Nutritionists often call the calories found in candy bars "empty calories." Foods that contain these empty calories fill your body with fat and sugar. People that eat a lot of food with empty calories tend to be very unhealthy.

Nutrients and Metabolism. So why is it better to eat a banana instead of a candy bar? Food must be transformed into energy that the body can use. This process is called metabolism. Metabolism cannot occur without essential vitamins and minerals. Vitamins and minerals help the body break down and use carbohydrates, proteins, and fats. When you eat a candy bar, you do not get the vitamins and minerals that your body needs. People that make a habit out of eating foods with empty calories will not have a lot of energy, even though they are taking in plenty of calories. Vitamins and minerals make the foods you eat useful.



calories	carbohydrates	health
minerals	nutrients	nutritional
proteins	water	temperature
sugar	vitamins	

Fill in the blanks with the correct answers from the word list above.

1.2 _____ supply the body with energy.

1.3 What you eat affects your overall _____.

1.4 Understanding your body's _____ needs is essential to good health.

1.5 Essential nutrients include water, _____, minerals, _____, carbohydrates and fats.

1.6 Energy enables the body to maintain a constant _____ and perform important functions.

1.7 The amount of energy that a food contains can be measured by _____.

1.8 A calorie is the amount of heat needed to raise the temperature of one kilogram of _____ one degree Centigrade.

1.9 Vitamins and _____ help the body change food into energy.

1.10 Foods that contain "empty calories" fill your body with fat and _____.

1.11 Vitamins and minerals help the body break down and use _____, proteins and fats.

Proteins. Did you ever wonder what your stomach is made of? Or what about your muscles? Just like meat that you would get from a cow is high in protein, so the muscles and organs in your body are high in protein. Protein is the main building block of tissues and organs.

In order to grow and be healthy, the human body needs protein. If the body does not take in enough carbohydrates and fats, protein can be used for energy. But protein is not a very efficient means of energy. Protein is found in animal products and in some plant sources like beans.

A protein is a chain of amino acids. There are 20 kinds of amino acids. Eight of these amino acids are considered essential, meaning they cannot be manufactured by the body. The essential amino acids must be eaten in foods. Foods that contain all the essential amino acids are called complete proteins. Animal meat is the best source for essential amino acids. Vegetables only contain some of the essential amino acids.

"Minor adjustments of length and the number of hurdles have been made over time."

Answer *true* **or** *false*.

1.12 _____ Carbohydrates are the main building block of tissues and organs.

1.13 _____ A protein is made up of a chain of amino acids.

1.14 _____ Protein is found in animal products.

1.15 _____ Vegetables are the best source for essential amino acids.

1.16 _____ Foods that contain all the essential amino acids are called complete proteins.

Carbohydrates. Have you ever been told that you can't have a sugary treat because it makes you "hyper"? Overloading your body with refined sugar can cause a sudden burst of hyperactivity. Foods like hard candy, soda pop and candy bars are made of refined sugars. When you eat too much sugar at one time, your blood sugar level will rise quickly. However, the quick energy does not last for long. Usually you feel more tired afterwards.

Carbohydrates are the body's main source of energy. During metabolism, carbohydrates are burned by cells to produce energy. Carbohydrates can be grouped into starches and sugars. Sugars can be found in fruit and plants. Starches can be found in grains and legumes. Unrefined carbohydrates found in grains, legumes, and fruit are more nutritious. In addition to providing the body with carbohydrates, they also contain vitamins, minerals, fats, and proteins.

Those foods that tend to make you "hyper" are made of refined carbohydrates. Refined carbohydrates are low in nutrients. As mentioned before, foods that are low in nutrients but high in carbohydrates are full of empty calories.

"Early athletes competing in the hurdles made the jumps by tucking their legs under their bodies."

Circle the correct answer to complete each sentence.

1.17 Foods like hard candy, soda pop, and candy bars are made of refined [**sugar, protein, amino acids**].

1.18 [**Proteins, Fats, Carbohydrates**] are the body's main source of energy.

1.19 During [**digestion, metabolism, secretion**], carbohydrates are burned by cells to produce energy.

Fats. Fats provide twice as much energy as carbohydrates and protein. It is a good thing, too. God designed us in such a way that our bodies could store energy in a compact way. With fat, we only need half the space to store energy. Fat also provides our bodies with insulation underneath the skin. It also surrounds vital organs, providing extra protection from sudden movements and jarring. Unfortunately, this provision for our health and safety has been abused. Obesity, brought on by overeating fats and carbohydrates, can cause many kinds of health problems. Fats are an essential part of your diet but need to be eaten in small amounts.

Water. Water is vitally important to physical health. We can live several weeks without food, but we can only live a few days without water. That is because 60% of the body is water. Water is essential to all forms of metabolism in the body. Your muscles cannot work, your lungs cannot inhale or exhale, and blood cannot flow through your body without water. Remember back to a time when your mouth was dry. Now think about what it felt like to move your tongue around, or even your lips. It felt very uncomfortable or maybe it hurt. The reason that it felt that way was because the tissues in and around your mouth were lacking water. Water helps things move smoothly. When you don't drink enough water, the same type of reaction happens to your organs and muscles. Without enough water, they don't work as well.

Your body loses approximately 5–6 pints a day through sweat, urine, and breathing out vapor. To maintain a healthy water balance, you need to drink about 6–8 cups of water a day. Fruits and vegetables are also good sources of water.

Answer *true* **or** *false*.

1.20 _____ Fats provide twice as much energy as carbohydrates and protein.

1.21 _____ Proteins provide the body with insulation underneath the skin.

1.22 _____ Fats are an essential part of a diet.

1.23 _____ Only 40% of the body is water.

1.24 _____ Water is essential to all forms of metabolism in the body.

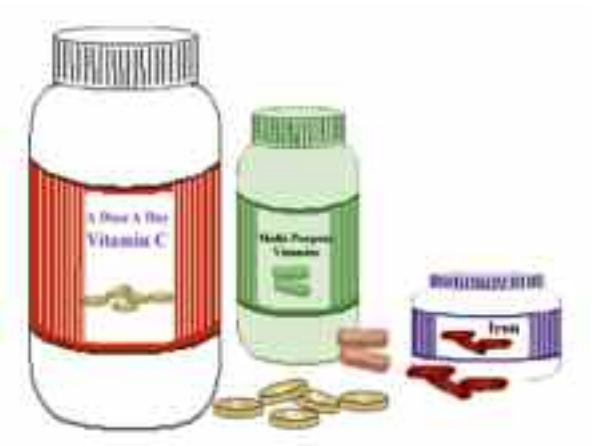
1.25 _____ Your body loses approximately 5–6 gallons of water a day through sweat.

1.26 _____ You need to drink 6–8 cups of water each day to maintain a healthy water balance.

Vitamins. Without vitamins, carbohydrates, fats, and proteins could not be changed into energy. Though vitamins do not supply energy, they do help in some way with the functioning of the brain, skin, nerves, and muscles. What vitamins actually do is still not fully understood. Evidence is based upon symptoms a person will have when they are not getting enough of a certain vitamin. Eating a balanced diet should provide you with the right amount of vitamins. However, if you take supplements, be careful to regulate what you take. There are two types of vitamins, water-soluble and fat-soluble. Water-soluble include vitamins include C, B_{12}, and B complex vitamins. If you take more water-soluble vitamins than your body needs, they will be excreted. Fat-soluble vitamins are different. If you take more Vitamin A, D, E, and K than your body needs, they will be stored in your fat tissues. Because fat-soluble vitamins can be stored for years, you can reach harmful levels if you take too many.

"In 1895 great improvements were made on the hurdles themselves. Heavy, stationary hurdles were replaced with lighter structures with an inverted T base which allowed them to be knocked over. This caused less physical damage to the athletes who occasionally stumbled over them."

Minerals. Minerals help regulate body processes. Muscle contraction, proper nerve reactions, and blood clotting are some of the processes that minerals help control. There are 13 essential minerals. Minerals can be placed into two groups. The major elements are calcium, magnesium, iron, iodine, phosphorus, and potassium. Trace elements such as cobalt, manganese, fluorine, copper, and zinc are found in the body in small amounts. A balanced diet will supply the body with these minerals.



balanced	essential
fat-soluble	vitamins
water-soluble	minerals

Fill in the blanks with the correct answers from the words above.

1.27 Without _____, carbohydrates, fats, and proteins could not be changed into energy.

1.28 Eating a _____ diet should provide you with the right amount of vitamins.

1.29 There are two types of vitamins, _____ and _____.

1.30 _____ help regulate body processes.

1.31 There are 13 _____ minerals.

HEALTH QUEST PENTATHLON ACTIVITIES

Complete the following activities.

1.32 Take a look at the canned foods in your cupboards. Refer to their labels, and **identify two foods that are good sources of one or more of the six major nutrients**. Good sources are those that provide above 10% of the recommended daily value—the amount your body needs on a daily basis. **% of Daily Value** is the portion of the total that one serving of the specified food provides. Use the canned food label information to complete the table below.

Name of Food	Major Nutrients and % of Daily Value		
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:

Adult check _____

Initial Date

1.33 Look at a label from two food items typically thought of as "junk food" (potato chips, soda pop, candy bar, etc.):

a. Identify the % of Daily Value of each of the six major nutrients. Record your findings using the table below.
b. Answer the questions on the following page.

Name of Junk Food	Major Nutrients and % of Daily Value		
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:
	Nutrient:	Nutrient:	Nutrient:
	Value:	Value:	Value:

a. Which category ranked highest? _____

b. Which category or categories ranked below 10% of Daily Value? _____

_____

_____

Adult check _____
Initial Date

THINK ON THIS: *Do you think it is possible to starve a human body by feeding it only junk food? (Remember the Yellowstone National Park Bears that virtually starved to death eating only the tourists' junk food?)* ***Share your conclusions with an adult.***

Adult check _____
Initial Date

1.34 **NEWS ALERT!!!** The National Eat Right Commission has just contacted you to be their junior spokesperson in their "Get A Healthy Life" marketing campaign. You understand that your body needs the essential nutrients to function well; therefore, as junior spokesperson, design an airplane banner for students your age, encouraging them to make wise eating choices to "Get a Healthy Life." Include the six essential nutrients in your banner. Draw out your banner on four pieces of notebook paper taped end-to-end. Draw examples of healthy foods or use magazine pictures to illustrate your ideas. Or, if you know how, develop a banner on your computer. Use clip art to illustrate your ideas. Share your banner advertisement with your parent.

Adult check _____
Initial Date

You're doing GREAT! Now that you've completed the HQP activities for Section I, you're eligible to receive a gold medal sticker to place on your Health Quest Pentathlon poster next to the hurdler.

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

Answer *true* **or** *false* (each answer, 3 points)

1.01 _____ Nutrients supply the body with energy.

1.02 _____ Understanding your body's nutritional needs is not essential to good health.

1.03 _____ Essential nutrients include water, vitamins, minerals, proteins, carbohydrates, and fats.

1.04 _____ The amount of energy that a food contains can be measured by calories.

1.05 _____ An amino acid is the amount of heat needed to raise the temperature one kilogram of water one degree Centigrade.

1.06 _____ Vitamins and carbohydrates help the body change food into energy.

Circle the correct answer to complete each sentence (each answer, 3 points).

1.07 [**Proteins, Carbohydrates, Fats**] are the main building blocks of tissues and organs.

1.08 Complete proteins are only found in [**plant, animal**] products.

1.09 Foods that contain all the essential amino acids are called [**incomplete, complete, partial**] proteins.

1.010 [**Proteins, Fats, Carbohydrates**] are the body's main source of energy.

1.011 During [**digestion, metabolism, secretion**], carbohydrates are burned by cells to produce energy.

fats	essential	water
metabolism	cups	vitamins
balanced	water-soluble	regulate

Fill in the blanks with the correct answers from the list above (each answer, 3 points).

1.012 _____ provide twice as much energy as carbohydrates and protein.

1.013 Fats are an _____ part of a diet.

1.014 Sixty percent of the body is _____.

1.015 Water is essential to all forms of _____ in the body.

1.016 You need to drink 6–8 _____ of water each day to maintain a healthy water balance.

1.017 Without _____ , carbohydrates, fats, and proteins could not be changed into energy.

1.018 Eating a _____ diet should provide you with the right amount of vitamins.

1.019 There are two types of vitamins: fat-soluble and _____ .

1.020 Minerals help _____ body processes.

Fill in the blanks with the correct word (each answer, 1 point).

1.021 **1 Corinthians 6:12–13 and 19–20:**

All things are _____ unto me, but all things are not expedient: All things are lawful for me, but I will not be brought under the _____ of any. Meats for the belly, and the belly for meats: but _____ shall _____ both it and them. Now the _____ is not for fornication, but for the _____ ; and the Lord for the body.

What? know ye not that your body is the _____ of the Holy Ghost, which is in you, which ye have of _____ , and ye are not your own? For ye are _____ with a _____ : therefore _____ God in your body, and in your _____ , which are God's.

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My Score _____

Adult check _____
Initial Date