HIGH SCHOOL HEALTH JOURNAL

THRIVE

Health and Physical Education for Homeschoolers

#NotConsumed Homeschool

AN INDEPENDENT LEARNING CURRICULUM

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My flesh and
my heart may fail,
but God is the strength
of my heart
and my portion forever.
Psalm 73:26

Your Heart Rate

If you visit the doctor for a check-up, one of the first things a nurse checks is your heart rate. Your ***heart rate*** is the number of times your heart beats each minute. Your resting heart rate refers to the rate your heart pumps when you are at rest, such as when you are sitting or lying down. For most teenagers, a resting heart rate is usually between 60 and 100 beats per minute.

When you are active or exercising, your body needs more oxygen. Your heart rate will increase as the heart beats faster to pump more blood through the body. Your heart rate may get as high as 200 beats per minute. On the other hand, when you sleep, your heart rate can drop as low as 30 to 40 beats per minute. These numbers may vary for several reasons, including medical conditions, stress, and some medicines.

If you have a smartwatch or other fitness-tracking device, you can check your heart rate that way, but it's also simple to check your heart rate yourself. To find your heart rate, place your index finger and your middle fingers gently against the underside of your wrist just below the base of your thumb.

When you feel the pulse, set a timer for 15 seconds. Then count how many beats you feel. Since there are 4 sets of 15 seconds in 60 seconds, you'll multiply that number by 4. That number is your ***resting heart rate***. Try it now.

Let's try it again after you've been active. Jog in place for three minutes. Check your pulse and count the number of beats you feel in 15 seconds. Multiply that number by 4.

Resting heart rate: _____
beats per minute

Active heart rate: _____
beats per minute

Your heart rate is an important indicator of your overall health. A heart rate that's too high could indicate health issues such as anemia, an abnormal hormone level, or a heart rhythm abnormality. A heart rate that's too low, especially one that's lower than your usual resting heart rate, could cause dizziness, lightheadedness, tiredness, or even fainting.

Did you know? A newborn's heart rate is the fastest at around 70 to 190 beats a minute.

Spend at least
10 minutes today
on a Get Moving activity.
Record it in your journal
on page 129.

Heart Disease

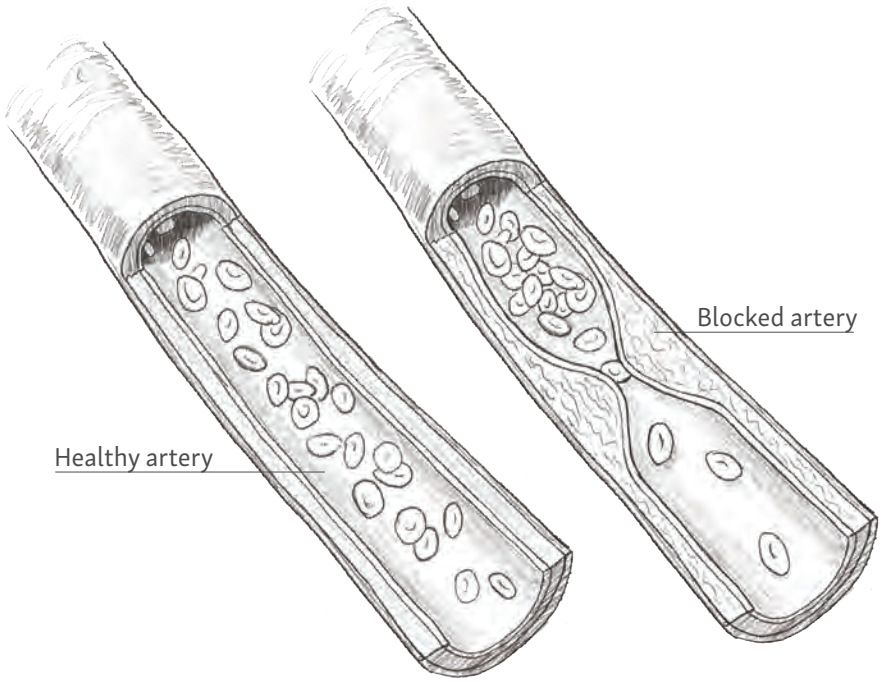
You've probably heard that heart disease is the leading cause of death for both men and women in the United States. You may be glad to know that many forms of heart disease can be prevented or treated by making healthy lifestyle choices. We'll talk more about those in the next lesson.

The most common kind of heart disease is called ***coronary artery disease***. This occurs when the ***arteries*** in your heart are narrowed or blocked and is the cause of most heart attacks. A similar disease is called vascular disease. This refers to problems in other blood vessels that also reduce blood flow. When blood vessels are blocked in any way, it affects how the heart functions.

For example, high ***cholesterol*** can cause blockage in blood vessels. Cholesterol is a waxy substance found in your blood. Your body needs cholesterol to build healthy cells, but when there's too much, it can turn into fatty deposits in your blood vessels. This is called ***plaque***. As plaque grows, it becomes more difficult for blood to flow through your arteries. Sometimes these deposits suddenly break to form a clot, causing a heart attack or ***stroke***.

High **blood pressure** can affect blood vessels, too. It can damage arteries, making them more narrow and less elastic. Cholesterol and other fats in the blood can collect in the damaged areas, clogging the arteries and making it more difficult for blood to travel. The heart then has to work harder to get oxygen and nutrients to the rest of the body.

Organs need a constant supply of blood and oxygen, so the blood needs to keep moving. That's why it's so important to keep the blood vessels open and free of obstructions. You'll find out what actions you can take to help your heart in the next section.

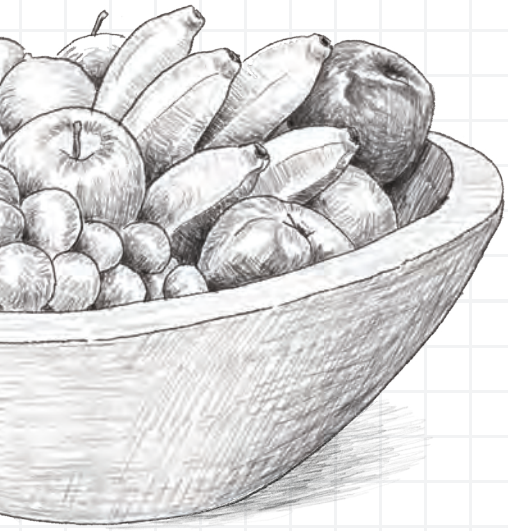


Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 129.

HDL (high-density lipoprotein) cholesterol absorbs cholesterol in the blood and carries it back to the liver.

Good vs. Bad Cholesterol

LDL (low-density lipoprotein) cholesterol raises your risk for heart disease and stroke.



When you want to buy whole foods, shop around the perimeter of the grocery store. Processed foods are located in the aisles.

Whole vs. Processed foods

Today we're going to visit whole foods—no, not the grocery store—the idea behind it. We're going to find out just what the term "whole foods" means, learn the difference between whole and processed foods, and discover how they can affect your health.

Whole foods are usually in the form in which they are found in nature. They don't contain any added artificial substances. When you think of whole foods, think of fresh fruits and vegetables, whole grains, nuts, seeds, lean meats, and fish.

One of the main benefits of whole foods is their nutritional value. Whole foods are packed with vitamins, minerals, ***fiber***, and antioxidants. For instance, whole grains like brown rice and oats provide complex carbohydrates and fiber that help with digestion and maintain energy levels. Fruits and vegetables offer an array of vitamins and minerals.

Whole foods are also lower in sugar, unhealthy fats, and **sodium**. This makes them a better choice for losing or maintaining weight, as well as reducing the risk of heart disease, diabetes, and certain cancers.

On the other hand, processed foods have been altered in some way. This can include canning, freezing, or adding ***preservatives*** or flavors. Many people choose these foods because of their convenience or longer shelf life. When you think of processed foods, think of canned soups, cereals, frozen meals, and packaged snacks.

The problem is, many processed foods contain additives including sugars, unhealthy fats, sodium, flavors, colors, and preservatives. These can lead to health issues like obesity, ***high blood pressure***, and heart disease. Also, the way the food is processed often strips away some of the nutrients that would be naturally found in the food.

If you're not sure if a food is whole or processed, read the ingredient labels. Whole foods typically have very few ingredients or none at all because they are in their natural state. For example, a bag of onions or a package of corn doesn't need an ingredients list because the food itself is the ingredient. Processed foods, on the other hand, often have a long list of ingredients.

Look at the list of foods. Write a "W" beside it if it's a whole food. Write a "P" beside it if it's a processed food.

____ Fish Sticks	____ Boxed Macaroni and Cheese	____ Frozen Pizza
____ Avocados	____ Instant Mashed Potatoes	____ Bananas
____ Canned Tuna	____ Sandwich Bread	____ Sweet Potatoes
____ Cereal	____ Salmon	____ Milk
____ Lettuce	____ Ice Cream	____ Brownies

GET MOVING:

Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 130.

Macronutrients

Macronutrients, often called macros, are important nutrients that our bodies need in large amounts to stay healthy. These nutrients provide us with energy, help us avoid illnesses, and support the body's natural functions. There are three main types of macronutrients: proteins, fats, and carbohydrates.

Proteins are essential for repairing tissues and growing muscles. They make important things like enzymes and hormones that keep our bodies running smoothly. If you enjoy playing sports or working out, protein helps your muscles recover and get stronger.

Carbohydrates are the body's go-to energy source. Also called carbs, they're in foods like grains, fruits, and vegetables. When we eat carbs, our body turns them into a type of sugar called ***glucose***, which gives us the energy to do all the things we need to do. Some carbs, like those in whole grains, give us a steady supply of energy. Others, like the ones in sugary snacks, just give us a quick boost and often cause a sudden drop in energy called a "crash."

Fats might sound like a bad thing, but they're actually necessary for our bodies to work properly. They help us absorb important nutrients, keep our cells healthy, and even provide insulation. Some fats are good for our heart, like the ones in avocados and nuts. Others, like the fats in fast food, can be harmful to our health.

Getting the right balance of these macronutrients is key for staying healthy. Depending on what activity you're doing, you might need more of one type of nutrient than another. For example, athletes need more carbs for energy, while people who are trying to lose weight might want to focus more on protein to feel full and keep their muscles strong.

Identify the main macronutrient in the foods listed below. Write "P" for protein, "C" for carbohydrate, or "F" for fat.

____ Bananas	____ Dark Chocolate	____ Oatmeal
____ Beef	____ Eggs	____ Olive Oil
____ Black Beans	____ Granola	____ Potatoes
____ Chicken	____ Greek Yogurt	____ Rice
____ Coconut Milk	____ Lentils	____ Squash

Harmful Fats

Saturated Fats are usually solid at room temperature and are commonly found in animal-based products. They can raise levels of bad cholesterol (LDL cholesterol) in your blood, which can increase the risk of heart disease.

Trans Fats are artificial fats created through a process called hydrogenation, which turns liquid oils into solid fats. They not only raise the levels of bad cholesterol but also lower the levels of good cholesterol (HDL cholesterol).

Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 130.

Evaluate and Log - Day 3

Follow the same process today that you did the last two days. First, evaluate how you did with your water intake.

Amount of water I should drink: _____

Amount of water I drank on Day 2: _____

How did you do this time? Hopefully, you got close to the target number. If you didn't, what can you do to hit it?

» _____

How did you do with other beverages? _____

Did you make healthy choices? _____

Looking at your chart, what might you do differently today to better supply your body with what it needs?

_____

_____

_____

Work hard today to be intentional about what you drink. Make it your goal to drink enough water and limit the amount of sugary or caffeinated drinks.

Beverage:	Ounces (8oz. = 1 cup):									Total:

Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 131.

Hopefully, by tracking your beverage intake, you've become more aware of the impact what you drink has on your body. While we won't be tracking beverages anymore, you can still pay attention to your water intake and make sure you're drinking enough every day.

Food Log - Day 1

Now that you have experience tracking your sugar and beverage intake, it's time to track the rest of the food you eat as well! You can do this by keeping a food log. A food log is also called a food diary or food journal. In a food log, you record all of the foods you consume throughout the day. Keeping a food log is helpful for improving your health, managing your weight, or addressing any dietary goals. By keeping track of what you eat, you'll become more mindful of your eating patterns. This can help you make healthier food choices that will supply your body with the nutrients it needs.

	Food Group:	Food Name and Amount:
BREAKFAST	Grains/Starches	
	Vegetables	
	Fruits	
	Dairy	
	Protein	
	Fats/Sweets	
	Beverages	
LUNCH	Grains/Starches	
	Vegetables	
	Fruits	
	Dairy	
	Protein	
	Fats/Sweets	
	Beverages	
DINNER	Grains/Starches	
	Vegetables	
	Fruits	
	Dairy	
	Protein	
	Fats/Sweets	
	Beverages	

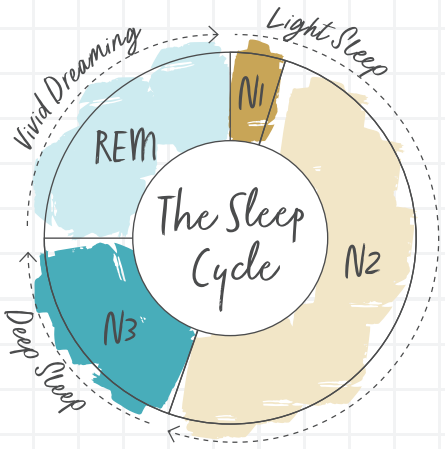
For am I now seeking the approval of man, or of God? Or am I trying to please man? If I were still trying to please man, I would not be a servant of Christ.
Galatians 1:10

As you go throughout your day, keep a record of everything you eat. This includes all of the foods in your regular meals. Write them on the correct lines for each food group. If you are feeling stressed, anxious, or upset when you eat, make a note of it in the comments section. How we feel often influences the way we eat, and this log can help you see if your emotions are influencing your food choices.

GET MOVING:

Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 131.

The Sleep Cycle



90-120 minutes total

The sleep cycle is a biological rhythm that allows the brain and body to recuperate. Each stage in the cycle does something special to help us stay healthy.

There are two main types of sleep: rapid eye movement (REM) and non-rapid eye movement (NREM). These take turns while we sleep, and together they last about 90 to 120 minutes. This equals one sleep cycle. You need four to six cycles of sleep every 24 hours to feel rested.

The **REM** stage is when we have the most vivid dreams. Even though we're asleep, the brain is still very active. One of the distinctive features of REM sleep is rapid movement of the eyes under our closed eyelids. This is where the term "rapid eye movement" comes from. These eye movements are an example of involuntary muscle movements, and they can vary in intensity.

NREM sleep has three stages: light sleep, a bit deeper sleep, and the deepest sleep. In Stage 1, we're sort of half-awake and half-asleep. This sleep stage is when heartbeat, brain waves, eye movements, and breathing begin to slow down. You may experience muscle twitches during this stage. These are known as ***hypnic jerks***.

← You spend about half of the time you're sleeping in Stage 2 NREM sleep.

In Stage 2, the heartbeat, breathing, muscle activity, brain waves, and eye movements continue to slow down. Your body temperature becomes lower, too. This sleep stage also involves two unique types of brain activity: **sleep spindles** and **K-complexes**.

Sleep spindles are short bursts of brain activity. They last from 0.5 to 3 seconds. Sleep spindles play a role in memory in learning. The K-complex is a single sharp peak in electrical activity followed by a dip. K-complexes and sleep spindles may help block reactions to harmless lights and sounds, allowing sleep to continue.

In Stage 3, you experience your deepest sleep. Your heartbeat, muscle activity, brain waves, and breathing are at their slowest. This is when the body builds muscles and bones, repairs and regrows tissues, and strengthens the immune system.

← As you get older, you get less deep sleep.

How much sleep did you get last night? _____

Assuming your sleep cycle is 90 minutes long,
how many sleep cycles did you go through? _____

If you didn't have time to complete all of the cycles, what time would you need to go to bed in order to make it all the way through the last cycle?

_____

_____

_____

Get Moving!

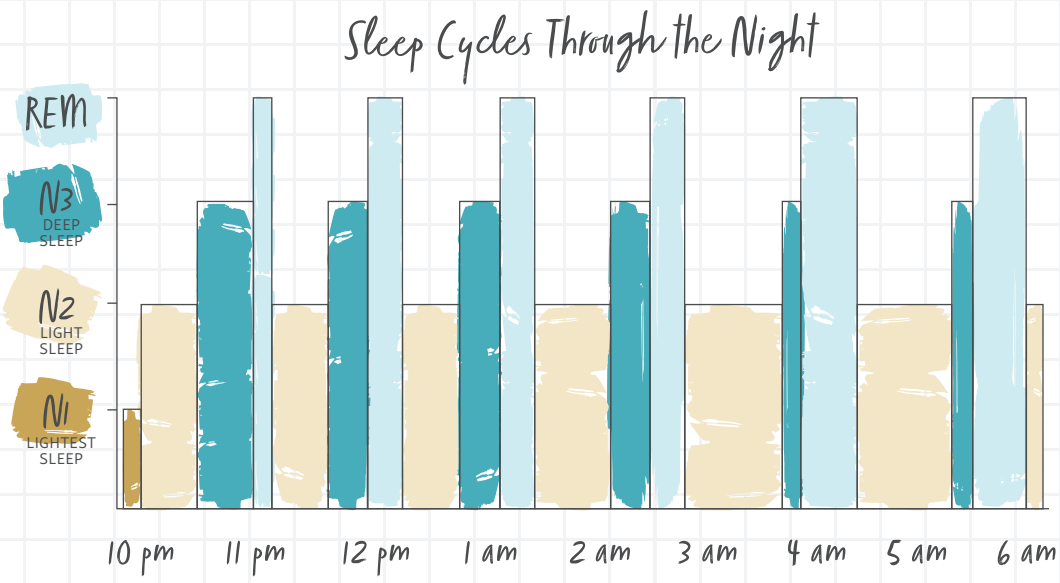
Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 132.

The Sleep Cycle, Part 2

When we don't get enough sleep, we miss out on all the good things our body does during the sleep cycle. We can feel tired, have trouble paying attention, and even feel moody. Not getting enough sleep can also make us more likely to have health problems later on, like gaining too much weight or getting sick more often. Completing sleep cycles is important for getting restorative and refreshing sleep. Let's dig into the sleep cycle a little more.

You know that you should aim for four to six sleep cycles a night. But did you know that these cycles aren't all the same? The first sleep cycle is often the shortest one. It usually lasts from 70 to 100 minutes, while the later cycles last between 90 and 120 minutes.

The composition of the cycles also change throughout the night. Look at the graph.



Do you spend the most time in deep sleep during the first or second half of the night?

Do you spend the most time in REM sleep during the first or second half of the night?

When do you get the lightest amount of sleep?

Does the Stage 2 sleep increase or decrease as the night goes on?

Sleep cycles can also vary from night to night. Your sleep cycles can depend on a lot of different factors, including your age, your recent sleep patterns, caffeine intake, stress, medications, health conditions, and more.

How did you sleep last night?

How much sleep did you get?

Assuming your sleep cycle is 90 minutes long, how many sleep cycles did you go through?

Which night did you get the most sleep? How did it affect your day?

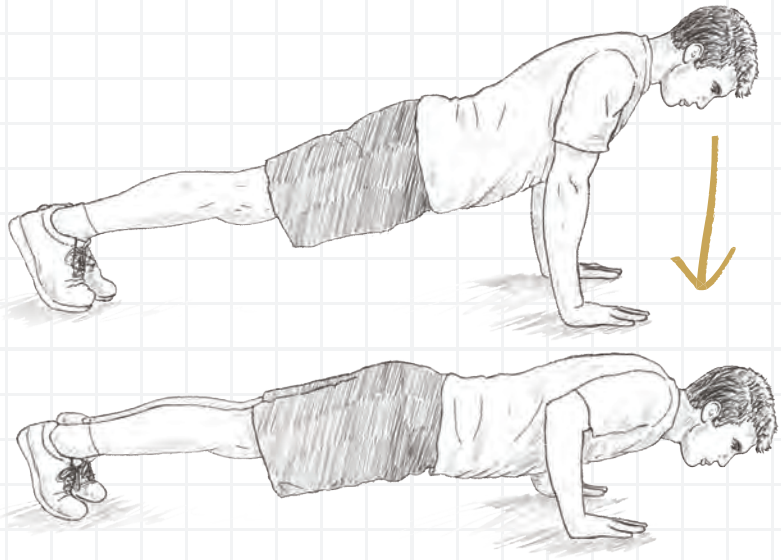
Spend at least 10 minutes today on a Get Moving activity. Record it in your journal on page 132.

Post-Assessment: Physical

Today you'll take the physical portion of the post-assessment. These are the same exercises you recorded at the beginning of the year. Without looking at your previous numbers, do them again. It doesn't matter how you do—just do your best. This is to see what a difference physical activity made when you purposefully added it to your day. Record your numbers accurately.

To complete this post-assessment, you'll need to wear comfortable clothing and athletic shoes. You'll also need a stopwatch or timer. You might even want to ask someone to help you count.

There are four parts to the physical fitness post-assessment. After you complete each one, record the requested information.

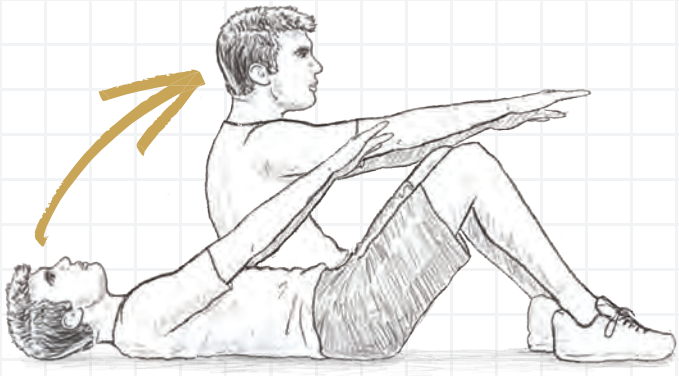


1. Push-ups

a. Start on your hands and knees. Place your hands slightly wider than the shoulders. Extend the legs back, placing the feet hip-width apart, balancing on your hands and toes.
b. Keep your body in a straight line from head to heels.
c. Contract your abdominal muscles and keep them tight.
d. Inhale as you lower your chest toward the floor by bending your elbows, keeping them close to your body.
e. Continue lowering until your chest is just above the ground or your upper arms are parallel to the floor.
f. Exhale as you push yourself back up to the starting position by straightening your arms.
g. Repeat as many times as you can within one minute.
h. Record that number.

2. Sit-ups

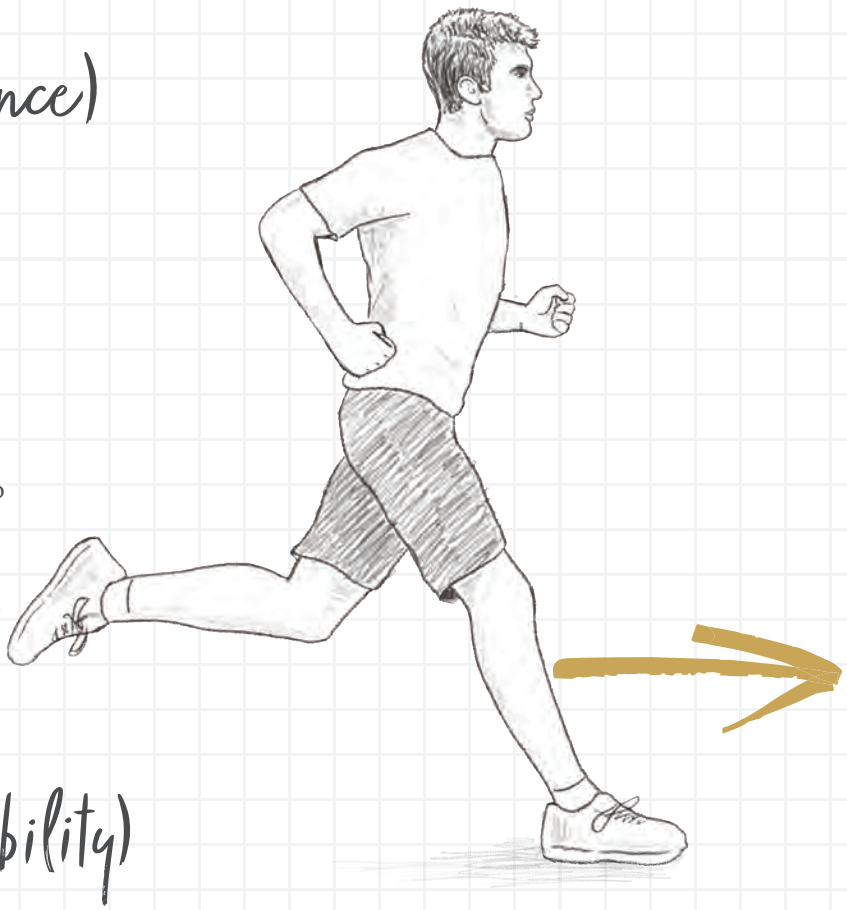
a. Lie on your back with your knees bent at a 90-degree angle and your feet flat on the floor.
b. Place your hands across your chest, with your fingertips touching your shoulders (avoid pulling on your neck). You can also extend your arms forward in front of you.
c. Engage your abdominal muscles and exhale as you lift your upper body off the ground by curling your torso toward your thighs.
d. Make sure your lower back remains in contact with the floor.
e. Inhale as you lower your upper body back to the starting position, but do not fully relax your abdominal muscles.
f. Repeat the sit-ups as many times as you can within one minute.
g. Record that number.



→ I did _____ push-ups in one minute.

→ I did _____ sit-ups in one minute.

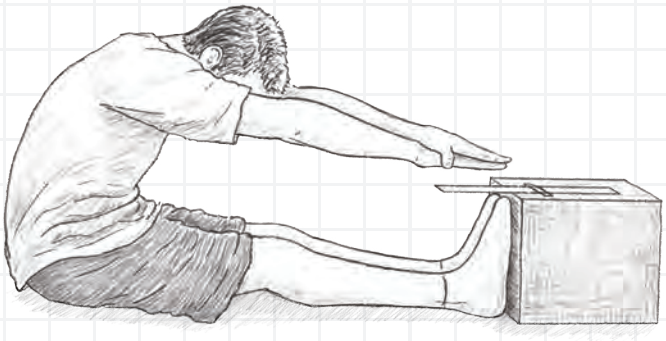
3. One-mile Run (Cardiovascular Endurance)



a. Before you start, warm up with about 5 to 10 minutes of light exercise, such as walking briskly or doing jumping jacks.
b. Find a marked course at a park or track where you can measure a one-mile distance, or use a smartwatch or smartphone to track the distance.
c. Begin the run at a comfortable pace and maintain a steady rhythm. If you need to adjust your pace in order to be able to continue running, do so.
d. Keep track of your time and try to finish as quickly as possible.
e. Record your time.

4. Sit and Reach (Flexibility)

a. Sit on the floor with your legs extended straight in front of you, toes pointing up.
b. Place a measuring device on the ground in front of you.
c. With a straight back and extended arms, slowly reach forward toward your toes.
d. Slide your hands along your legs or the ruler as far as you can without bouncing or forcing the stretch.
e. Hold the stretch for a few seconds, then measure the distance reached. Use positive numbers to indicate reaching beyond your toes and negative numbers to indicate reaching before your toes.



→ I ran one mile in _____ minutes.

→ I reached _____ inches.

It's time to see how you've improved! Look back at pages 10-11 and compare what you recorded to what you recorded on these pages.

How did you do? If you followed the directions through this whole course, chances are you're seeing some improvement!

Even though this is the end of this course, it's just the beginning of the rest of your health and fitness journey. You may want to continue tracking your progress throughout the rest of the year in a journal or notebook. Keep learning how to take care of that amazing body God has given you—as an act of obedience, of worship, and of thanksgiving for such a wonderful gift! Remember: you were made to THRIVE!