Physical Education

Fitness Assessment Study Guide

Test 1 contains material regarding Year 1 Standards.

Test 2 contains material regarding Year 2 Standards.

Standard 1: Students will demonstrate competency in a variety of motor skills and movement patterns.		
Lifetime Activities		
	High School Year 1	**High School Year 2**
1. Games and Sports	Demonstrate competency in activity-specific movement skills in two or more games and sports (invasion, net/wall, field/striking, target). PE1.1.HS1	Refine activity-specific movement skills in two or more games and sports (invasion, net/wall, field/striking, target).PE1.1.HS2
2. Individual Performance Activities	Demonstrate competency in activity-specific movement skills in two or more individual-performance activities.PE1.2.HS1	Refine activity-specific movement skills in two or more individual performance activities. PE1.2.HS2
3. Outdoor Pursuits	Demonstrate competency in activity-specific movement skills in two or more outdoor pursuits. PE1.3.HS1	Refine activity-specific movement skills in two or more outdoor pursuits. PE1.3.HS2
Standard 2: Students will apply knowledge of concepts, principles, strategies, and tactics related to movement and performance.		
Lifetime Activities		
	High School Year 1	**High School Year 2**
1. Strategies and Tactics	Develop an offensive and a defensive strategy for the purpose of game play. PE2.1.HS1	Create and apply multiple offensive and defensive strategies for game play. PE2.1.HS2
2. Movement Performance	Use movement concepts (force, motion, rotation) to analyze and improve performance of self or others in a selected skill.PE2.2.HS1	Use movement concepts to develop a plan to improve advanced performance skill in a self-selected skill. PE2.2.HS2
3. Movement Concepts	Assess critical elements and stages of learning a self-selected motor skill. PE2.3.HS1	Create plan to improve performance of a self-selected motor skill. PE2.3.HS2
4. Training Principles and Knowledge	Apply training principles and knowledge (progression, specificity, overload, reversibility, diminishing return) to a self-selected activity. PE2.4.HS1	Apply training principles and knowledge to two or more self-selected activities. PE2.4.HS2
Standard 3: Students will demonstrate the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.		
Physical Activity		
	High School Year 1	**High School Year 2**
1. Benefit of Physical Activity	Investigate relationship between physical activity, nutrition, and body composition. PE3.1.HS1	Evaluate benefits of a physically active lifestyle as it relates to college or career productivity. PE3.1.HS2
2. Physical Activity in the Community	Investigate activities that can be pursued in the local environment. PE3.2.HS1	Evaluate (according to benefits, social support, and participation requirements) activities that can be pursued in the local environment. PE3.2.HS2
3. Physical Activity	Evaluate risks and safety factors that might	Evaluate barriers to physical activity

for a Lifetime	affect physical preferences throughout the life span. PE3.3.HS1	throughout the life span and promote strategies to overcome them. PE3.3.HS2
4. Engagement in Physical Activity	Participate regularly in physical activity outside of the school day. PE3.4.HS1	Create a plan, train for, and participate in a community event with a focus on physical activity. PE3.4.HS2
Fitness		
5. Health-Related Fitness	Adjust intensity to keep heart rate in the target zone, calculate recovery heart rate, and use technology to monitor cardiorespiratory endurance. PE3.5.HS1a Use types of muscular strength and muscular endurance exercises (isometric, concentric, eccentric). PE3.5.HS1b Use types of flexibility exercises (static, dynamic).PE3.5.HS1c	Analyze recovery heart rate in relationship to fitness level and overall health. PE3.5.HS2a Analyze types of muscular strength, muscular endurance, and flexibility exercises for personal fitness development. PE3.5.HS2b
6. Training Principles	Explain training principles (overload, specificity, progression, reversibility, diminishing return, rest, and recovery) and how they relate to fitness planning. PE3.6.HS1	Use training principles (overload, specificity, progression, reversibility, diminishing return, rest, and recovery) to design a personal workout. PE3.6.HS2
7. Engagement in Fitness Activities	Participate regularly in self-selected fitness activities outside of school. PE3.7.HS1	Participate regularly in a variety of self-selected fitness activities outside of school. PE3.7.HS2
8. Individual Plan	Design and implement a personal fitness and nutrition plan (assessment scores, goals for improvement, plan of activities for improvement, log of activities to reach goals, timeline for improvement). PE3.8.HS1	Design and implement a strength, conditioning, and nutrition plan that develops balance in opposing muscle groups (agonist and antagonist) and supports a healthy, active lifestyle to maintain or improve body composition. PE3.8.HS2
Standard 4: Students will exhibit responsible personal and social behavior that respects self and others.		
	High School Year 1	**High School Year 2**
1. Personal Responsibility	Demonstrate intrinsic motivation by selecting or planning opportunities to participate in physical activity inside and outside of school. PE4.1.HS1	Analyze barriers that prevent opportunities for physical activity inside and outside of school. PE4.1.HS2
2. Rules and Etiquette	Examine the importance of etiquette in athletics and elite sports. PE4.2.HS1	Examine moral and ethical conduct in specific competitive situations. PE4.2.HS2
3. Working with Others	Solve problems and think critically when working with others in physical activity, both as an individual and in groups.PE4.3.HS1	Assume a leadership role in a physical activity setting. PE4.3.HS2a Describe the importance of treating individuals with dignity and respect during physical activity. PE4.3.HS2b
4. Safety	Demonstrate best practices for participating safely in physical activity and exercise. PE4.4.HS1	Apply best practices for participating safely in physical activity and exercise. PE4.4.HS2
Standard 5: Students will recognize the value of physical activity for health, enjoyment, challenge, self-expression, and social interaction.		
	High School Year 1	**High School Year 2**
1. Challenge	Choose an appropriate level of challenge to	Choose an appropriate level of challenge to

	experience success in a physical activity. PE5.1.HS1	experience success in a self-selected physical activity. PE5.1.HS2
2. Self-Expression and Enjoyment	Participate in a self-selected physical activity for self-expression and enjoyment. PE5.2.HS1	Participate in a self-selected physical activity for self-expression and enjoyment. PE5.2.HS2
3. Social Interaction	Identify opportunities for social interaction in a self-selected physical activity. PE5.3.HS1	Evaluate opportunities for social interaction and social support in a self-selected physical activity. PE5.3.HS2

The Five Components of Health Related Fitness
Adapted from Five For Life Curricular Materials

Understanding **cardiorespiratory endurance, muscular strength, muscular endurance, flexibility and body composition**, known as the **Five Components of Fitness**, is important for improving health and performance.

Cardiorespiratory endurance is the ability of the heart, blood, blood vessels and lungs to supply enough oxygen and necessary fuel to the muscles during long periods of physical activity. Participating in aerobic activities is the best way toimprove cardiorespiratory endurance because they require the body to use large amounts of oxygen for sustained periods of time. With the increased need for oxygen, the heart must beat faster to pump more blood throughout the body. In turn, over time, the heart, which is a muscle, will become stronger and will be able to pump more blood with each beat, therefore, beating at a slower rate while circulating the same amount of blood. This increased efficiency enables a person to work, exercise and play more often and more vigorously for longer periods of time without getting tired.

Muscular Strength is the ability of muscles to push or pull with total force. Increasing muscular strength allows a personto lift, push, or pull with more force. This is a benefit in any athletic situation, but it is also important for other life situations like when the car has a flat tire or when the door is stuck.

Muscular Endurance is the ability of muscles to repeat a movement many times or to hold a position without stopping to rest. Improving muscular endurance allows a person to increase physical activity. A person with improved muscularendurance can accomplish more physical work by moving longer and taking fewer breaks.

Muscular strength comes before muscular endurance. Before a brick layer can stack hundreds of bricks a day, a brick layer must have the muscular strength to lift the first brick. Once a brick layer has the initial strength to life the first brick, the bricklayer can begin to build muscular endurance.

One of the best ways to build muscular strength and muscular endurance is through resistance training, or activities thatplace an additional force against the muscle or muscle group. Some examples of resistance training include weight training, push-ups and crunches.

Muscles react positively to strenuous activity and negatively to inactivity. Therefore, the old adage, “Use them or losethem,” is true. When the body is inactive, a large percentage of strength is lost over time. Likewise, as the body ages bone density tends to decrease which can lead to weak bones (osteoporosis). While resistance training, along with engaging in an active lifestyle, improves muscular strength and muscular endurance, it also can improve bone

density.Therefore, building muscles provides health benefits that can last throughout life.

Physical performance will also be enhanced through the development of muscular strength and muscular endurance. Asmuscles become stronger and gain endurance, a person will be able to work, exercise or play more often, with more power for longer periods of time.

Resistance training to develop muscular strength and muscular endurance also helps improve or control body composition. As resistance training increases muscle mass, a part of fat-free mass, fat mass decreases.Because muscles use calories to work, the more muscle mass a person has, the more calories will be used. Using more calories reduces the number of calories stored as fat mass. Therefore, building muscular strength and muscular endurance is a lifelong habit needed to maintain or improve body composition.

Flexibility is the muscles' ability to move a joint through a full range of motion, and staying flexible is important to health and performance. As the body ages, the muscles, tendons, and ligaments stiffen, lose elasticity and become lessflexible. As a result, a person's ability to perform movements may be hindered and may increased the risk of injury. Improving flexibility decreases a person's risk of injury, prevents post-exercise pain and helps relieve emotional tension.

Daily activities such as combing hair, tying shoes and participating in athletics require flexibility. Golfers need flexibility in the hips and shoulders to allow them to rotate the golf club farther and in turn hit the ball a greater distance. Softballand baseball players need flexibility in their shoulders and arms to that they can bring the ball back farther, which allowsthem to throw the ball harder.

Flexibility is required for everyday movements, from tying shoes to throwing a ball. If a person does not perform activities that improve flexibility, then one day the person may not be able to perform those activities. Therefore, activitiesto improve flexibility should be performed daily.

Dynamic and static stretches are safe and effective methods to improve flexibility. **Dynamic stretches** involve moving parts of the body continuously while gradually increasing reach, speed of movement or both gently throughout a full range of motion. **Static stretches** involve stretching a muscle to the point of mild discomfort for an extended period oftime. These stretches can be performed as part of the warm-up and/or cool down phase of a fitness program or as a separate flexibility program.

Body Composition is the combination of fat mass and fat-free mass, including bones, muscles, organs, and water. Healthy levels of fat mass are essential for insulation, the protection of organs, the absorption of vitamins, nerve conduction and as an energy source. Body composition is usually referred to as a percentage of bodyfat.

A healthy level of fat mass for men is between 10% and 20% of total body weight and a healthy level of fat mass for women is between 15% and 25% of total body weight. Improving and maintaining body composition at healthy levels will reduce the risk of heart disease, Type 2 diabetes, high blood pressure, strokes, certain types of cancer and obesity.

The percentage of fat a person has is affected by two factors; the number of calories consumed (energy in) and the amount of activity performed and calories used (energy out). Both of these factors are controllable. A combined effortof eating a healthy diet (energy in) and increasing physical activity (energy out) is the best approach to maintaining a healthy level of body fat and improving or maintaining an overall body composition.

The benefit of understanding cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and bodycomposition, known as the Five Components of Fitness, is immeasurable and is important for improving

health and performance.

Key vocabulary words that will be introduced during this unit are:

- **Body Composition:** The combination of fat mass and fat-free mass, including fat, bones, muscles, organs, and water.
- **Cardiorespiratory Endurance:** The ability of the heart, blood, blood vessels and lungs to supply oxygen to themuscles during long periods of physical activity.
- **Flexibility:** The muscles' ability to move a joint through a full range of motion.
- **Muscular Endurance:** The ability of the muscles to repeat a movement many times or hold a position withoutstopping to rest.
- **Muscular Strength:** The ability of a muscle or muscles to push or pull with its total force.
- **Static Stretches:** Involves stretching a muscle to the point of mild discomfort for an extended period of time.
- **Dynamic Stretches:** Involves moving parts of the body continuously while gradually increasing reach, speed ofmovement or both gently through a full range of motion.
- **Resistance Training:** An activity that places an additional force against the muscle or muscle group.

Training Principles

Adapted from the Five For Life curricular materials

When developing and implementing a personal fitness plan, it is important to understand the training principles: overload, progression, specificity, and rest and recovery. Understanding the training principles and how to apply thoseprinciples increases a person's ability to develop a fitness plan to meet personal goals toward improved health and performance. It also increases their ability to adjust those plans as necessary. A well thought out training program uses the FITT Principle to produce **overload** and includes **progression**, **specificity** as well as **rest and recovery**.

The training principles are used to help individuals achieve exercise goals in many different careers. Since the beginningof athletic competition, the principles of training have been used to improve performance. Strength coaches use them to design workout programs for top athletes. Two-tenths of a second in the hundred meter dash or two inches in the high jump might be the difference between being a good college athlete and an Olympian. One Olympic athlete reported that he trained for eight years to take 1.5 seconds off his 200 meter time. That improvement in time was the difference between being a good high school sprinter and an Olympic champion with a world record. Personal trainers use the training principles to help movie stars lose weight or bulk up as they prepare for roles in upcoming movies.
Firefighters and police officers use these principles to maintain their fitness in order to perform their jobs.
The FITT Principle is a set of guidelines that help set up a workout routine to help get the most out of the exercise program. FITT stands for: **frequency** (how often you exercise), **intensity** (how hard you work during exercise), **time** (howlong you exercise or how many repetitions you complete), and **type** (what type of exercise you are doing). For positive changes to occur in health and performance, the body must adapt to an increased demand in one of three variables of the **FITT** Principle. Increasing the **f**requency, **i**ntensity or **t**ime (FITT Principle) of an activity beyond normal performance provides a reason for the body to adapt or change to meet the new demand and make positive changes in health and performance. Training the body beyond normal performance demonstrates the principle of **overload**.

For example, to improve cardiorespiratory endurance, a person who runs a ten-minute mile three times a week

could create overload by changing the frequency of a person's workouts from three to four times per week, increasing the intensity by running at a faster pace that a ten-minute mile, or increasing the time by running at the same pace but for alonger distance. Each of these changes would create an overload by placing a demand on the body beyond normal performance.

With overload, the body adapts slowly and makes small changes toward improvement over time. Therefore, it is important to use the principle of **progression** correctly. It would be unreasonable to expect the person who ran a ten- minute mile three times a week, to increase all three **FITT** variables at once. Because the body requires periods of rest, running eight-minute miles five days a week would be difficult. The drastic difference in overload could lead to exhaustion or injury, causing the body to break down rather than adapt, thus preventing progression. To achieve desiredresults, the principle of progression, or gradually increasing frequency, intensity or time to create overload must be applied correctly, allowing the body to make subtle changes gradually over time.

Most athletes know that getting enough rest after exercise is essential to high-level performance, but many still over- train and feel guilty when they take a day off. The body repairs and strengthens itself in the time between workouts, andcontinuous training can actually weaken the strongest athletes. Therefore, it is essential to incorporate the principle of **rest and recovery** into a workout schedule. Building recovery time into any training program is important because this is the time that the body adapts to the stress of exercise and the real training effect takes place. Recovery also allows the body to replenish energy stores and repair damaged tissues. Exercise, or any other physical work, causes changes in the body such as muscle tissue breakdown and the depletion of energy stores (muscle glycogen), as well as fluid loss.

Recovery time allows these stores to be replenished and allows tissue repair to occur. Without sufficient time to repair and replenish, the body will continue to break down from intensive exercise. That is why is suggested that people workany muscle group between three and five times a week.

Besides overload, progression, and rest and recovery, it is important to consider the principle of specificity when designing a fitness plan to improve health and performance. The principle of **specificity** states that training is specific to the muscles used and the component of fitness trained. Therefore, jogging every day would not be the best way to improve muscular strength. Likewise, performing squats and lunges with resistance would not be the most effective way to improve cardiorespiratory endurance. It is important that the type of training performed matches the desired results.

Studies have shown that to achieve the greatest improvements in cardiorespiratory endurance, a person's heart should beat at and intensity of 65% to 85% of its maximum heart rate or and intensity level (RPE) of 4. To achieve this intensity,a person should perform large muscle movements that create an increased demand for oxygen. Activities such as jogging, power walking, skating, bicycling and swimming use large muscle groups, produce a demand for oxygen and therefore raise the heart rate.

Performing the above activities for a minimum of 10 minutes at a time and for a total of 60 minutes a day with a frequency of at least five exercise sessions per week, would be the best way to improve cardiorespiratory enduranceand represents the principle of specificity.

Continuing to use specificity with progression, to create additional overload, will provide the best results toward achieving exercise goals. The body will not improve unless it is stimulated to do so. Therefore, it is important to providean additional overload for new improvements to occur. As the body slowly adapts to the increased demands of the workout, it is essential to remain patient and consistent to see changes in health and performance.

Using the training principles consistently in a fitness program will achieve the results desired in health and performance.

Key vocabulary words that will be introduced during this unit are:

- **FITT Principle:** The variables of **f**requency, **i**ntensity, **t**ime, and **t**ype.
- **Intensity:** Training load expressed as weight, speed, or heart rate.
- **Overload:** An increase in one or more of the FITT variables to provide and additional workload.
- **Progression:** Gradual increase in one or more of the FITT variables to create an overload.
- **Specificity:** Exercise training is specific to the muscles used and the component of fitness trained.
- **Time:** Minutes or repetitions.
- **Type:** Activity performed.

Components of Skill-Related Fitness
Adapted from the Five For Life curricular materials

In order for people to function efficiently and effectively without injury, to enjoy leisure, to be healthy, and to resistdisease they need to be physically fit. Physical fitness is divided into five health and six skill-related components.

Components of Health-Related Fitness	Components of Skill-Related Fitness
Cardiorespiratory Endurance	Agility
Muscular Strength	Balance
Muscular Endurance	Power
Flexibility	Speed
Body Composition	Coordination
	Reaction Time

You have already learned about the five components of health-related fitness. This article goes into more detail aboutthe six components of skill-related fitness.

Six Components of Skill-Related Fitness

There are six skill-related fitness components: agility, balance, coordination, speed, power, and reaction time. Skilledathletes typically excel in all six areas.

• **Agility** is the ability to rapidly and accurately change the direction of the body. Agility is important in sports such astennis which requires players to change direction quickly to hit the ball.

• **Balance** is the ability to control or stabilize the body when a person is standing still or moving. Balance is important insports such as dance, gymnastics, ice hockey, figure skating, and other sports requiring extreme control.

• **Coordination** is the ability to use the senses together with body parts in order to perform motor tasks smoothly andaccurately. Coordination is important in activities such as dribbling a basketball, juggling, and is also vital for sports involving hitting objects.

• **Speed** is the ability to move your body or parts of your body swiftly. It is the amount of time it takes the body to perform specific tasks. Many sports rely on speed to gain advantage over your opponents. Sprinters, cyclists, soccerplayers, and swimmers are among the many athletes that rely on speed.

• **Power** is the ability to move the body parts swiftly while applying the maximum force of the muscles. Power is a combination of both speed and muscular strength. Fullbacks in football use power to muscle their way through otherplayers to advance the ball. Other activities that require power include shot put, a volleyball serve, and a basketball dunk.

• **Reaction Time** is the ability to reach or respond quickly to what you hear, see, or feel. An athlete quickly

coming offthe blocks early in a swimming or track relay, or stealing a base in baseball needs quick reaction time.

Goal Setting for Life
Adapted from the Five for Life curricular materials

The long-term success of any plan is determined by setting and adjusting realistic **short-term goals** that can be achieved in 2-4 weeks and **long-term goals** that can be achieved in 2 months or more. As a person ages, maintaining fitness and health and performance becomes a primary focus. Therefore, creating a fitness and health plan and setting**goals** is essential for a person to maintain or improve overall health and performance.

To maintain or improve health, it is important to create a fitness and health plan that includes health habits such as nutrition, hydration, sleep and activity. As a person ages, the person's nutrition, hydration, sleep, activity and fitness needschange. As a result, it is critical to set and adjust realistic goals in these areas to maintain or improve health.

Life is more fun and more enjoyable for people who participate in activities in which they feel confident about their performance. Feeling confident about performance is also when motivates people to continue to participate in activities. Setting realistic goals for performance gives a person a sense of accomplishment when those goals are reached, enhances the enjoyment of participation in activities, increases the likelihood of continued participation andtherefore improves performance. Because fitness, nutrition, hydration, and sleep also play a role in performance it isimportant to set goals in these areas as well.

Setting realistic goals in activity, as well as other health habits such as nutrition, hydration and sleep, play an important
role in maintaining or improving health and performance.

Using the fitness measurements to set goals in the five components of fitness, then periodically practicing the measurements and re-evaluating the goals, allows a person to achieve short and long-term success in improving fitness and health and performance. Once a person understands the process of **goal setting**, or creating a plan for improvement, and how to work towards their goals, it can be used to help them maintain or improve fitness, health and performance for life.

When setting short-term goals that can be achieved in 2 to 4 weeks and long-term goals that are achieved in 2 monthsor more, the Five for Life program used the **S.M.A.R.T. Goal Setting Strategy**. The acronym S.M.A.R.T stands for Specific, Measurable, Aggressive, Realistic, and Time-bound.

S	**Specific:** • Goals are straight forward • Details focus efforts and clearly define with is to be accomplished **Example:** A general goal would be "Increase upper body strength" but a specific goal would say, "I want to increase the number of push-ups I can do."

M	**Measurable:** • Must be able to answer the questions: "How much?", "How many?", or "How will I know when it is accomplished?" **Example:** A general goal would be "I want to do more push-ups" but a measurable goal would be "I want to increase the number of push-ups I can do by 4."
A	**Aggressive:** • Requires effort to achieve beyond what has been achieved before
R	**Realistic:** • Achievable • Reachable and relevant
T	**Time-bound:** • Achieved in a given time period **Example:** A general goal would be "I want to do more push-ups" but a time-bound goal would be "I want to increase the number of push-ups I can do by the end of the month."
S.M.A.R.T	**Example:** "I want to increase the number of push-ups (specific) I can do by 4 (measurable) push-ups by the end of the month (time-bound)." *Setting goals that are aggressive and realistic are dependent on the individual

An example of how to use goal setting is explained in the following scenario: Sam is a web developer who spends at least 8 hours a day sitting behind a computer, eats fast food every day and occasionally plays basketball for fun. Even though Sam is only 28 years old, he is beginning to notice that he does not feel healthy, is having trouble playing a full game of basketball and is gaining weight. To regain his health and performance, Sam has set realistic short-term and long-term goals. His short-term goal is to feel better, and his long-term goal is to lose 10 pounds. He feels that a balanced plan for his health and performance would include the following: more movement and activity breaks during the workday, resistance training two times a week using the FITT Principle, eating less fast food and including more fruits and vegetables in his diet, drinking more water, playing basketball two times a week, and getting at least eight hours of sleep per night. Sam believes this balanced plan for health and performance will not only help him feel better but it will also help prevent heart disease, which runs in his family.

To organize the goals Sam has chosen, he is using the FITT tables below. Sam's goal for his resistance training plan is totone his body by developing both muscular strength and muscular endurance.

Component of Fitness	Frequency (Sessions per Week)	Intensity (Resistance)	Time (Repetitions)	Type (Activity)
Muscular Strength	2-3	Heavy	4-8	Weight Training, Calisthenics, Circuit Training, Resistance Training
Muscular Strength Muscular Endurance	2-3	Moderate	9-12	
Muscular Endurance	2-3	Light	13-20	

Sam is playing basketball 3 times a week and taking 10-minute walks during his breaks five days a week to

reach hiscardiorespiratory endurance goals.

Component of Fitness	Frequency (Sessions per Week)	Intensity (% of MHR)	Time (Minutes)	Type (Activity)
Cardiorespiratory Endurance	5+	65%-85%	10+	Various: Running, Swimming, Biking, Soccer

After three weeks of following this balanced plan for health and performance, Sam felt better. He also noticed that he was back to playing a full game of basketball without becoming really tired. Sam believed he was able toachieve his short-term goal because he followed his plan and it was realistic and attainable. Sam continued to follow this plan and, after 6 months, had lost 10 pounds and he felt much stronger. Because Sam's plan worked, he adjusted his goals to continue his balanced plan for health and performance to maintain what he had accomplished.

Because the long-term success of any plan is determined by setting and adjusting realistic short-term and long-term goals, goal setting should be used consistently until it becomes a lifetime habit. Not only can it be applied to maintain orimprove health and performance, but it can also be applied to any aspect of life including school, family, or careers.

Fitness Logging
Adapted from the Five For Life curricular materials

Activity, nutrition, hydration (the water you drink) and sleep are everyday habits. These habits will affect your health foryour whole life. Your health and performance will depend on these behaviors. You can find out if your everyday habits are helping you by keeping track of them in a log.

This unit will teach you how to keep a **Nutrition Log**. Based on the data you gather in your Nutrition Log, you can makedecisions that will help your fitness and health. Based on the data you gather in your Nutrition Log, you can make decisions that will help your fitness and health.

Nutrition

A **Nutrition Log** is a tool that helps you see what your eating habits are. It will also help you track how much food you eat from each of the five food groups. You will then be able to make informed food choices that will lead to a healthy diet. A healthy diet is a regular course of eating and drinking adopted by a person. It is important to start healthy eatinghabits now and continue them throughout your life.

A **healthy diet** provides your body with the nutrients it needs. Nutrients are substances in food that the body needs forenergy, proper growth and maintenance. What you eat affects health and performance. Engaging in a healthy diet is beneficial. It allows your body to function properly and reduces the risk of heart disease. Most importantly, a healthy diet will provide energy for your body to perform at its highest level.
To build the habit of a healthy diet, you need to understand the USDA **MyPlate** and the **Recommended Daily Amounts**(RDA's) needed from each food group for your age, gender, and physical activity level. **MyPlate** is a USDA tool in the form of a placemat that separates food into five groups and provides guidance for healthy eating. The **Recommended Daily Amounts** are the appropriate amount of food eaten from each food group

based on age and physical activity level.

MyPlate does not list oils but it is important to consume some foods that contain healthy oils. Oils contain fats and in limited amounts, fats are a necessary nutrient. However, consuming too many fats can lead to health problems. Your **Nutrition Log** will provide detailed information about your daily diet. Making good food choices is essential to building and maintaining a healthy body. Carbohydrates, fats, and proteins supply energy to your body and are found inthe food you eat. You need to eat the Recommended Daily Amounts of food to keep your energy level and to keep frombecoming overweight or underweight.

Eating more calories than your body can burn will cause your body to store fat. Some stored fat is important for health, but too much stored fat will lead to being overweight. Not eating enough calories will deprive the body of the nutrientsit needs and will lead to being underweight. Being overweight or underweight can be due to poor nutrition. Both will affect your health and performance.

Activity, nutrition, hydration and sleep are the everyday behaviors that affect long-term health. These behaviors strongly influence the health and performance of an individual. A person can determine if the person's habitsare producing the desired health benefits by logging activity, nutrition, hydration, and sleep patterns.
Logs can help a person see how choices regarding activity, nutrition, hydration and sleep affect fitness and health. An individual can make a plan to improve fitness and health through lifestyle choices based on the information received from these types of logs. The improvement of health and performance will never fully be achieved withoutfirst understanding how activity, nutrition, hydration, and sleep work together.

Sleep

Sleep is important for health and performance. It is the time when the body repairs itself, grows, builds memories, and releases hormones that regulate appetite and affect BMI. Sleep also contributes to a healthy immune system.

Most teenagers need between 8 ½ and 9 ¼ hours of sleep per night. If the body does not get enough sleep and is unableto repair itself, the overall health of an individual will be compromised. Increased risks of obesity and heart disease havebeen linked to a lack of sleep, as have lack of energy and slower reaction times. The lack of energy and slower reaction times will ultimately affect performance, and have been linked to an increased risk of car accidents. A lack of sleep, known as sleep deprivation, can also affect a person's emotions by feeling depressed, irritable, angry and tired.

Having a period of uninterrupted sleep gives the body the time it needs to revitalize and repair itself for improved health and performance. To increase the chances of uninterrupted sleep, it is important to follow the recommendations below:

Things to Avoid:

- Consuming caffeinated coffee, tea, soda/pop, and chocolate late in the day.
- Nicotine and alcohol
- Eating, drinking, exercising within a few hours of bedtime.
- Heavy reading, studying, gaming within one hour of bedtime.
- TV, computer, phone.
- Stress
- Bright light before bedtime

Things to Do:

- Make sleep a priority
- Understand the body's needs

- If naps are taken, make them short and not too close to bedtime.
- Establish consistent bedtimes and waketimes
- Stick to quiet and calm activities the hour before going to bed.
- Create bedtime habit by doing the same things every night before you go to sleep.
- Relax.
- Keep a sleep log.

Through the use of a **sleep log**, a system used to monitor a person's sleep habits, it is possible to evaluate total length and patterns of sleep. This valuable information can be used to adjust sleep patterns and help students recognize howsleep can improve and maintain the health of an individual.

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Logs can help a person see how choices regarding activity, nutrition, hydration and sleep affect fitness and health. An individual can make a plan to improve fitness and health through lifestyle choices based on the information received from these types of logs. The improvement health and performance will never fully be achieved without understanding how activity, nutrition, hydration and sleep work together.

Hydration

Water is an important nutrient for health and performance. The body is made up, on average, of 60% water. Water helps regulate body temperature, provides a means for nutrients to travel to organs, transports oxygen to cells, removes waste from the body, moistens skin, helps muscles move, cushions joints, and protects organs.

It is recommended that a person drink one ounce of water for every two pounds of body weight daily. For example, a person who weighs 160 pounds should drink at least 80 ounces of water per day. Physical activity increases the amountof water needed to stay properly hydrated, and it is recommended that an additional eight ounces of water be consumed for every 20 minutes of activity that is performed.

Dehydration, when there is not enough water in the tissues of the body, is a problem because by the time a person feelsthirsty, the person is already dehydrated. Signs of dehydration include dry lips, nausea, dark yellow, strong-smelling urine, not urinating as often, and constipation. Dehydration has been linked to many health concerns such as low energy levels, elevated blood pressure, circulation problems and decreased kidney function. Performance is affected through the loss of coordination and strength. Dry skin is a sign of dehydration and can have an effect on the body.

While water can be consumed through other food, such as fruits and vegetables like watermelon and cucumbers that are nearly 100% water by weight, using a hydration log allows a person to see the minimum amount of water intake in an average day. A **hydration log**, a system used to monitor a person's hydration habits, will give insight into drinking patterns, such as how much water is consumed and whether or not **hydration** needs are met. This information will allowa person to monitor and adjust water intake.

The benefits of drinking water are immeasurable, and staying hydrated improves health and performance.

Key vocabulary words that will be introduced during this unit are:

- **Hydration:** Providing an adequate amount of water to the tissues of the body.
- **Hydration Log:** A system used to monitor a person's hydration habits.
- **Dehydration:** When there is not enough water in the tissues of the body

Safety Principles
Adapted from Five for Life curricular materials and OSPI release materials

All activities have an inherent danger that someone could trip, fall, or collide with another person. Any person who wants to participate in a physical activity should be aware that they have responsibilities to maintain a safe environmentfor everyone. Prior to taking part in a physical activity, participants should review the Five for Life safety code and consider solutions to potential dangers they might encounter while participating in the activity.

The Five for Life safety code is a four-step process that will help ensure safety while participating in physical activities.

- Check own personal space.
- Maintain control of own body at all times.
- Respect equipment, others, and self.
- Always follow directions.

Bones and Muscles: R.I.C.E
Adapted from the Five for Life curricular materials

The bones and joints of the skeletal system and more than 600 muscles of the system function together as the musculoskeletal system to produce movements such as sitting up straight, walking, running, jumping, and throwing. Because movement is basic to life, building and maintaining these systems provide long-term health benefits and enhance performance.

Building a strong musculoskeletal system provides long-term health benefits, including allowing a person to perform daily activities with greater ease and less risk of injury. Leading a lifestyle that includes a diet rich in calcium, avoiding behaviors such as smoking or drinking, and engaging in weight-bearing activities will increase bone density. Weight- bearing activities such as walking, running, jumping, stair climbing, dancing, and resistance training add stress to the bones. This added stress causes the bones to adapt and become more dense and therefore stronger. However, takingpart in any physical activity presents a degree of risk for potential injury.

Sometimes, bones can become displaced or moved from their normal position at a joint. This is called dislocation and isone joint issue that can affect movement and range of motion. Other joint issues include osteoarthritis, strains, sprains,or tendonitis.

Osteoarthritis is also called "wear-and-tear arthritis." It is the result of years of wear on the joint in which the cartilagethat covers and protects the end of the bones softens and breaks down. When this occurs, bone tissue becomes exposed. As a result swelling occurs in the joint which restricts movements and causes pain.

Strains are a result of over stretching a tendon or a muscle and sprains are torn tendons or ligaments. These issues areoften a result from over using a joint.

When one of these joint issues occur, it is important to rest, ice, compress (wrap) and elevate the injured area above theheart to reduce swelling, reduce pain, and being the healing process. The method of treatment is known as R.I.C.E:

R.I.C.E.: A formula in which each letter represents a step in the treatment of a minor injury: R=Rest, I=Ice,C=Compression, E=Elevation

- **Rest**- It is important to rest and immobilize the injured part.
- **Ice**- A sprain or strain should be immersed in cold water or covered with ice in a towel or plastic bag. Do this for 20 minutes immediately after the injury to help reduce swelling and pain. Apply ice several times a day. Leaving ice on any longer than 20 minutes or placing ice directly on the skin can damage the skin.
- **Compression**- Use an elastic bandage to wrap the injury. This helps to limit the swelling. Compression should not be too tight and should be taken off periodically so as not to restrict blood flow.
- **Elevation**- Raise the body part above the level of the heart to help reduce swelling.

The development of a strong and balanced musculoskeletal system will improve health and performance by preventinginjuries to the muscles, tendons, ligaments, and bones. It can also help improve structure for good posture.

Warm-Up/Cool-Down

Adapted from the Five for Life curricular materials and OSPI released materials

It is important to warm-up the body, preparing it for activity and reducing the risk of injury. Warming up the body should include activities that elevate the heart rate, raise the core body temperature, and warm the muscles that will beused in the activity for the day. When thinking about what activities to engage in for a warm-up, consider three specific areas: type of exercise, duration, and intensity. Engaging in a light jog mixed with some skipping and sliding movements,while swinging the arms in an exaggerated way would be considered a good warm-up, as would jogging in place, followed by light calisthenics such as jumping jacks and dynamic stretching. Every warm-up will depend on the specific activities in which a person is engaging.

It is important to cool-down the body, after activity to help reduce the risk of injury. Cooling down the body should include activities that slowly lower the heart rate, slowly lower the core body temperature, and slowly cool down the muscles that were used during the activity. When thinking about what activities to engage in for a cool-down, considerthree specific areas: type of exercise, duration, and intensity. Engaging in a light cool-down jog with some dynamic andstatic stretches could be considered a good cool-down, as would jogging in place followed by dynamic and static stretches. Every cool-down will depend on the specific activities in which the person just engaged.

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