

Physical Education:
Healthy Life
Lesson 01A: Strength Training
Credits: .5 (1/2) Hours: 8

1. **General Description of Lesson:**

In this lesson students will learn how strength training increases the number of calories the body burns at rest and will see why experts now emphasize weight and resistance training.

2. **Standards:**

Physical Education:
Course 1, Standards #3 & #4

English-Language Arts:
Reading- #1.1, #2.3, #2.5, and #2.6
Written - #1.1, and #2.5
Written and Oral Lang. – #1.3 and #1.4
Listening and Speaking - #1.1, #2.1, #2.2 and #2.5

3. **Objectives:**

1. Students will define strength training.
2. Students will describe why strength training is critical for people with weight-control problems.
3. Students will learn about metabolism.
4. Students will become acquainted with why weight training is especially important for older people.

4. **Technology:**

1. Word processing
2. Web browser
3. Computer (Mac/win)
4. Internet connection
5. CD-drive
6. Printer

Teacher Competency Level:

1. General Computer Skill: Novice
2. Internet: Novice
3. Word Processing: Novice

5. **Procedure:**

Teacher Tasks:

- Teachers will assign P.E. packets.
- Teachers will evaluate all assignments.
- Teachers will discuss chapter one-on-one.

6. **Student Tasks/Assignments: Students will...**

Lesson 01A: Strength Training

- ___ Print Lesson from web site
- ___ Read Health Tips Packet #1: Strength Trainings 7% Solution
- ___ Complete Health Tips Questions 1
- ___ Complete the crossword puzzle & word search
- ___ Complete Physical Education Log - 4 hours of activity
- ___ Find a magazine or newspaper or Internet article on health or fitness. Write a half page summary and a half page opinion or reaction to the article

7. **Assessment:**

Assessment Type(s): demonstrations, interviews, work completed & test.

- Students will submit all exercises, written work, summaries and questions for evaluation.
- Students will be evaluated using the written test, if available.
- Students will be evaluated on one-to-one discussion with the teacher.

8. **Situations/Learning Condition**

- Students will meet one-on-one with their teacher.
- Students will complete all assignments independently at home.
- Students will work, as needed, on the computers at J.E. Young.
- Students will meet weekly with their teacher for discussion and help.

Fresno Unified School District

Physical Education Log

Directions: A total of **4 (four) hours** of exercise is required to earn credit for this assignment. The log will not be accepted without the written work that accompanied this assignment.

Day and Date	Exercise	Time Spent
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		
	Total Time	

Student Name: _____

Verified By: _____

Contract Date: from _____ to _____ Grade: _____ Credit: _____

Strength Training's 7% Solution 1

USA Today

Strength training increases the number of calories the body burns at rest — as much as 7% a day, according to a recently published study, which adds to the evidence that this type of exercise is important for weight loss. For years, experts have touted the benefits of aerobic exercise for trimming pounds, but now more than ever, experts are putting increased emphasis on strength training, also known as weight and resistance training.

A host of best-selling books push this premise, including *Body-for-Life* by Bill Phillips and Michael D'Orso; *The Business Plan for the Body* by Jim Karas and *Strong Women Stay Slim* by Miriam Nelson and Sarah Wernick.

"Strength training is critical for people with a weight-control problem," says Nelson, director of the Center for Physical Fitness at Tufts University in Boston. "If you are only doing aerobics, you are missing the boat," says Wayne Westcott, co-author of *Specialized Strength Training*. "You will lose muscle mass and your metabolism will slow down as you age if you don't strength train."

Experts say resistance training — including lifting free weights, working out on weight machines and doing pushups — helps preserve and increase lean muscle, which revs up metabolism and increases the number of calories the body burns at rest.

The reason for the metabolic advantage: Lean muscle is like a car engine. It burns the gas, or in this case calories, and provides the power to get you from one place to another. The bigger the engine, the more fuel the car can burn. The larger the lean muscle mass, the more calories your body burns at work and at rest.

The recent study done at the University of Maryland showed that resting metabolic rate increased by about 7% after six months of very intense weight training. So if a person eats 2,000 calories a day to maintain weight that would mean the body would burn 140 or more calories a day after muscle mass is increased. Other studies show this kind of exercise may increase metabolism as much as 15%.

Experts say that every pound of lean muscle burns an additional 30

to 50 calories each day. In the Maryland study, exercisers added about three to six pounds of muscle in six months, says Jeffrey Lemmer, now with the Human Nutrition Center on Aging at Tufts.

An exerciser might gain a couple pounds of muscle in five to six weeks of intense exercise, Nelson says. Men build muscle more easily than women, she says. Her research shows that most people who weight train lose fat as they gain muscle and often drop down a size or two in clothing after they start a program. “Fat takes up so much more space than muscle. It’s bulky and less dense. A pound of muscle is about 30% smaller than a pound of fat,” she says. Nelson says weight training is especially important for older people because people lose about one-third of a pound of muscle a year, starting in the mid-to late 30s. That’s why many people gain weight at about this time, she says. For those who want to lose weight, aerobics is important, too, she says, because people typically burn about twice as many calories in 30 minutes of aerobics as they do during 30 minutes of weight training.

Many successful dieters do both types of exercise, say obesity researchers who have studied

people who’ve successfully lost weight and kept it off. They found people who are participating in the National Weight Control Registry burn an average of 2,800 calories a week with exercise. On average, participants use about 1,000 calories a week by walking. They use another 1,800 calories doing activities like weight training, aerobics and biking.

To get the health benefits of physical activity, the government recommends at least 30 minutes of moderate activity most days of the week. For cardiovascular health, the American College of Sports Medicine suggests doing aerobic activity three to five days a week for 20 to 60 minutes, either continuous or intermittent activity. The group says resistance training should include one set of 8 to 10 exercises that condition the major muscle groups. This should be done two or three days a week.

But when it comes to weight control, experts have different ideas on how to allocate exercise time:

- Nelson says a person should gradually work up to strength training for 45 minutes at a high intensity three times a week. She recommends doing aerobic exercise for 45 minutes three or more days a week.

- Author Bill Phillips suggests weight training for no more than 46 minutes three days a week and doing 20 minutes of aerobics on the alternate days.

- Westcott, research director of the South Shore YMCA in Quincy, MA, says an hour of exercise might be broken down into 30 minutes of aerobics and 30 minutes of strength training and stretching, including warm-up and cool-down exercises. He recommends doing this every other day if the goal is health and fitness. Those who want to lose weight might want to do aerobic exercise six days a week and do a full-body strength training workout three days a week, he says.

- Author Jim Karas suggests devoting 75% of the workout to resistance training and 25% to cardiovascular exercise. He believes three hours a week of this is enough to achieve significant results.

Strength training can change the way you feel about yourself, Nelson says. “It changes your shape. It makes you feel stronger. And when you are strong, you feel so good about yourself.”

Health Tips Questions 1

Name _____

Use the space provided to write answers to each of the questions. Make certain your answers are in complete sentences.

1. Why is strength training important for weight loss?

2. What other name is given to strength training?

3. Why is strength training critical for people with a weight-control problem?

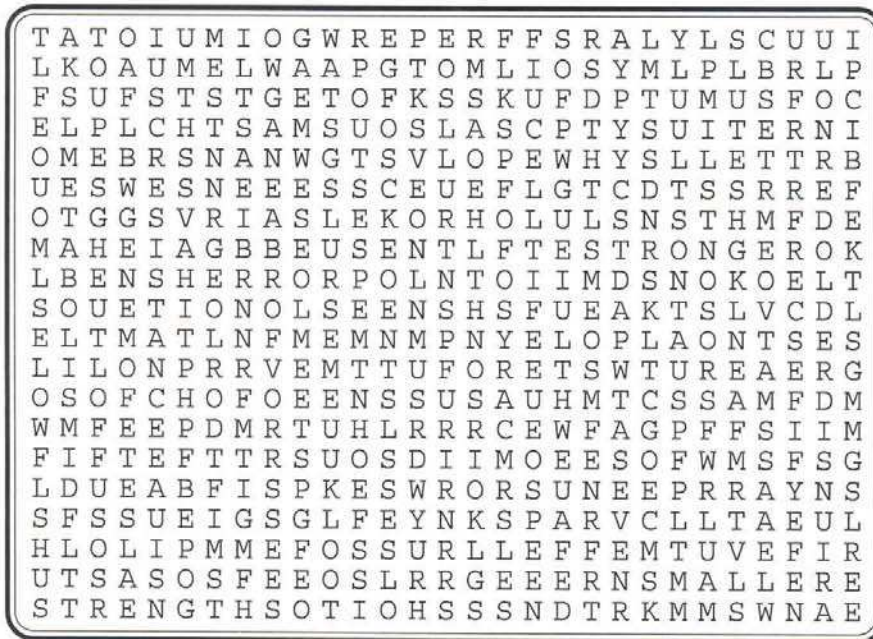
4. What is the metabolic advantage to strength training?

5. Why is weight training especially important for older people?

6. How much exercise does the government recommend for us?

Health Tips Wordsearch 1

name _____



Use the clues below to discover words in the above puzzle. Circle the words.

- | | |
|---------------|----------------|
| 1. Karas | 11. older |
| 2. Lemmer | 12. pushups |
| 3. Nelson | 13. resistance |
| 4. Sports | 14. seven |
| 5. Westcott | 15. smaller |
| 6. build | 16. strength |
| 7. fat | 17. stronger |
| 8. fifty | 18. weight |
| 9. metabolism | 19. work |
| 10. muscle | 20. yourself |

Health Tips Crossword 1

name _____

Use the clues provided to complete the crossword puzzle below.

Across:

2. Strength training can change the way you feel about _____
4. Resistance training revs this up
5. He wrote the book *Business Plan for the Body*
8. Director of the Center for Physical Fitness at Tufts University
12. This type of training increases the number of calories the body burns
13. Weight training is especially important for these people
14. Men _____ more muscle more easily than women
16. American College of _____ Medicine
17. Strength training builds this
18. Every pound of lean muscle burns an additional thirty to _____ calories per day

Down:

1. Works for the Human Nutrition Center on Aging at Tufts
3. Strength training is also known as weight and _____ training
6. Strength training's _____ percent solution
7. Strength training is important to _____ loss
9. Strength training makes you feel this way
10. Doing these helps to preserve lean muscle
11. The larger the lean muscle mass, the more calories your body burns at _____
15. Co-author of *Specialized Strength Training*
16. A pound of muscle is _____ than a pound of fat
18. People who weight train lose this as they gain muscle

