

7th GRADE AEROBIC STUDY GUIDE

HISTORY

- Dr. Kenneth H. Cooper, an exercise physiologist for the San Antonio Air Force Hospital, Texas, coined the term 'aerobics' to describe the system of exercise that he devised to help prevent coronary artery disease.
- At first, aerobic exercises included activities such as running, walking and bicycling. Over the years, aerobic programs such as dance aerobics, water aerobics and step aerobics were introduced. Aerobics continue to evolve and popular forms include yoga, cardio-kickboxing, pilates, and taekwondo.

TAKING YOUR PULSE

- Taking your pulse regularly during exercise helps to know how hard you are working.
- There are many locations on the human body where your pulse can be felt. Your pulse is the pressure wave of blood that is generated when your heart muscles contract.
- It reflects the rhythm, rate and strength of your heart's contractions. You can feel your pulse anywhere that an artery (a blood vessel that carries blood away from the heart) crosses over a bone and is close to the skin's surface.

*Resting heart rate is affected by:

1. age
2. gender (men are lower usually)
3. physical fitness
4. some drugs/medication
5. genetics
6. anxiety

FITNESS CONCEPTS

Components of Physical Fitness:

1. Body composition – A ratio used to describe the percentages of fat, bone and muscle in human bodies.
2. Flexibility – The ability to move a body part through a full range of motion.
3. Muscular strength – The amount of force a muscle can exert.
4. Muscular endurance – The ability of muscle to do difficult physical tasks over a period of time without fatigue.
5. Cardiovascular endurance (what we are doing in aerobics) – The ability of the heart, lungs and blood vessels to send fuel and oxygen to the body's tissues during long periods of activity.

Two categories of cardio exercise

1. Aerobic – Literally, "living or occurring in the presence of oxygen." Aerobic movement or exercise is an activity or a series of activities performed

strenuously enough to increase heart rate and respiration but not so strenuously that it results in an oxygen debt (called anaerobic).

2. Anaerobic – A technical word which literally means without oxygen.

F.I.T.T Principle – Is an acronym for frequency, intensity, time and type.

The **F.I.T.T. principle** is a basic philosophy of what is necessary to gain a training

effect from an exercise program.

1. **Frequency** – The number of exercise or activity sessions, usually defined by the number per week.

2. **Intensity** – The amount of exercise completed in a specific period of time or how “hard” a person exercises.

3. **Time** – The duration or amount of time spent exercising, usually defined by the total time per session.

4. **Type** - There are two types of exercises for muscle groups, main and assistance (minor). Basically, your main exercises involve the most muscle mass. They usually involve more than one muscle group when exercising and you can use the greatest weight resistance with these exercises. The assistance exercises isolate the muscle group by concentrating on the simple movement of that muscle group and eliminating or minimizing the involvement of other muscle groups. Have variety in your choice of exercises. Don't do the same exercises the same way every time you train. Variety will shock the body and won't allow it to get used to the same exercises.

Benefits of Physical Fitness

1. Exercise reduces the risk of heart disease

2. Exercise reduces the risk of diabetes (Diabetes is a metabolic disorder characterized by high blood glucose levels. Chronic elevation of blood glucose is associated with increased incidence of heart disease, kidney disease, nerve dysfunction, and eye damage.)

3. Exercise increases bone mass – This becomes possible as your muscular force is applied during activity. Studies have found that this can prevent bone loss in the elderly.

4. Exercise maintains physical working capacity during aging.

5. Exercise increases longevity – lifespan.

6. Exercise improves psychological well-being.

There are 3 parts/stages to every workout:

1. Warm-up – The preparation of the body before a session of vigorous exercise. Getting the blood flowing, and it helps to prevent injuries.

2. Exercise/workout – A bodily activity that enhances or maintains physical fitness and overall health. It is performed for many different reasons.

These include: strengthening muscles and the cardiovascular system, honing athletic skills, and weight loss or maintenance.

3. Cool-down – A short period of mild exercise after a session of vigorous activity. To return blood flow to normal.

TERMINOLOGY

- **Aerobics** – A system of physical conditioning that involves aerobic exercise (e.g. running, walking, and swimming).
- **Aerobic fitness** – An indication of the heart's ability to recover from vigorous exercise. Aerobic fitness is a component of overall (physical) fitness and is sometimes called cardiovascular fitness.
- **Atrophy** – The partial or complete wasting away of a part of the body. It is a loss of size or mass: usually refers to loss of muscle due to non-use. Can occur as soon as 48 hours of non-use.
- **Calorie** – A basic measure of energy from food that is used by the body. One pound of fat equals 3500 calories.
- **Interval training** – Alternating exercise period of heavy and light effort.
- **Resting heart rate** – A person's heart rate at rest. A resting heart rate is considered "normal" if it is between **about 60-90 beats per minute**.
- **Target heart rate** - AKA "training heart rate," is a desired range of heart rate reached during aerobic exercise which enables one's heart and lungs to receive the most benefit from a workout. This theoretical range varies based on one's physical condition, gender and previous training.