LAUSD- Course Four 11th – 12th Grade Physical Education Matrix Chart
Instructional Component Aerobics FT
Suggested Length of Unit: Eighteen Weeks

Grades 11-12
Course 4- Aerobics Activities FT

The major emphasis of this elective course is to allow students the opportunity to advance their knowledge and skills in aerobic concepts and to attain or maintain cardiovascular fitness through an array of physical activities. Instruction includes learning how to chart one's state of fitness; methods of improving and maintaining a desirable level of fitness; and the proper biomechanics of the human body performing aerobic activity. Students also learn to analyze the effects of movement, nutrition, drugs, alcohol, and tobacco on an individual's overall health and personal levels of health-related physical fitness.

In addition, this course provides students who have not passed the physical performance test with the opportunity to reassess their physical fitness level and take the *Fitnessgram*© again in an attempt to regain exemption status from physical education for the following year.

Standards for Instructional Component Aerobics Activities FT

Standard Set 1: Students demonstrate knowledge of and competency in motor skills, movement patterns, and strategies needed to perform a variety of physical activities.

1.1 Demonstrate expertise in two or more of the following aerobic activities; aerobic dance, running, rollerblading, swimming, cycling, rowing, triathlon and walking.
1.4 Practice aerobic activities in real-world settings.

Standard Set 2: Students achieve a level of physical fitness for health and performance while demonstrating knowledge of fitness concepts, principles, and strategies.

2.2 Adjust personal fitness goals on the basis of fitness assessment measures to improve performance in aerobic activities.
2.3 Design a personal physical fitness program in preparation for the demands of a competitive aerobic activity.

Standard Set 3: Students demonstrate knowledge of psychological and sociological concepts, principles, and strategies that apply to the learning and performance of physical activity.

3.4 Set personal goals for improved performance and enjoyment of aerobic activities.
3.5 Perform and evaluate planned and spontaneous leadership assignments and roles in high-level aerobic activities.

Course Three 11th – 12th Grade Instructional Component Aerobic Activities FT

Content Standard Group	Analyzed Standard	Sample Performance Task	Sample Scoring Criteria for Performance Task
1.1	Students demonstrate advanced capabilities in two or more of the following aerobic activities: aerobic dance, running, rollerblading, swimming, cycling, rowing, triathlon and walking.	Students will choose two or more of the following activities: aerobic dance, running, cycling rollerblading, swimming, rowing, triathlon and walking, to participate in 4 to 6 days per week. They will utilize their advanced skills and knowledge in the biomechanics and FITT principles to demonstrate how to present a formal instructional session to another group of students on each activity.	Student demonstration will include a minimum of two formal instructional sessions to their peers. It will include the proper biomechanics for all the major body parts involved. The FITT principal will include: frequency, intensity, time and types for each activity. The demonstration will also include the principle of progression and overload. In addition to information related to the necessary equipment, costs, benefits, possible injuries and number of participants in the United States by age.
1.4	Students practice aerobic activities in real-world settings.	Students will record all aerobic activities outside of class in a log.	Student log will be legible, complete, and thorough, including the positive and negative aspects of each real-world setting along with the address and location.
2.2	Students use fitness assessment measures to adjust personal fitness goals to improve performance in aerobic activities.	Students will pre-assess their aerobic fitness at the beginning of the new school year and create a personal fitness goal for aerobic capacity. Students develop a two-month aerobic workout program to improve their aerobic capacity	Student assessments will be performed consistently every two-months. Personal fitness goals will start small, be challenging and realistic, specific and measurable. Personal fitness plan will include the FITT principles in the correct way to

Course Three 11th – 12th Grade Instructional Component Aerobics

		and meet their goal. Students will reassess their aerobic fitness each two months and adjust their personal goal in aerobic fitness. After each assessment the students will create a personal fitness plan incorporating the FITT principles to improve their aerobic capacity.	improve aerobic capacity as indicated by the goal.
2.3	Students design a personal physical fitness program to prepare for the demands of a competitive aerobic activity.	Students will design a four-month training program in weekly increments for aerobic capacity for them selves or another person to meet the demand of a competitive aerobic activity.	Student training program will have weekly intervals, using the principle of progression and overload correctly. Within the seven-day period the rest, maintenance, secondary and primary days are clearly and strategically placed through out the week.

Course Three 11th – 12th Grade Instructional Component Aerobics

Content Standard Group	Analyzed Standard	Sample Performance Task	Sample Scoring Criteria for Performance Task
3.4	Students set personal goals for improved performance and enjoyment of aerobic activities.	Students will set personal goals in aerobic activities after the pre-assessment in the *Fitnessgram*© and adjust the goals after each two-month assessment.	The student's personal goals will include short term, medium and long term goals. The goals will start small, be relative to past behavior, be specific and

			measurable, challenging and realistic. The goals will be clearly written and include dates of accomplishment.
3.5	Students perform and evaluate planned and spontaneous leadership assignments and roles in high-level aerobic activities.	Students will lead two aerobic activities alone, two activities in a group of four, and two spontaneous activities. Students will also perform a written evaluation of other students' leadership ability.	Student demonstrates confidence, the ability to lead proper warm-up and cool-down and activity phase of a lesson in a leadership role. All aerobic activities will be biomechanicaly correct, safe and challenging. Suggestions to scaffold or enrich the activity phase are given. Instructions are at the appropriate volume, clear and easy to follow.

Equipment and Instructional Materials

- Step aerobics platforms
- Rollerblades
- Aerobic workout logs
- Light hand weights
- Stationary bikes or bicycles (helmets)
- Aerobic equipment
- Jump ropes
- Therapeutic balls
- Stretching mats
- Pedometers
- Heart rate monitors

- Aerobic music
- Stereo system

Pre-assessment

- Students will take the Fit Smart Two test
- Students will be pre-assessed on the *Fitnessgram*© assessment
- Students will take the PAR-Q assessment

Sample Scaffolding Strategies

- Provide samples of workout logs
- Post the fitness principles
- Provide an example of the FITT principles for aerobic training
- Have students create a one day, one week and one month work out plan for aerobic training
- Provide the FITT principles for aerobic capacity and flexibility
- Define what goals are
- Define the steps of goal setting
- Define short term, medium and long term goals
- Provide instruction on a variety of aerobic exercise
- Stress the importance of progression
- Provide samples of high and low-impact aerobic routines
- Provide samples of step aerobic routines
- Provide samples of long slow distance running programs
- Provide samples of interval training running programs
- Provide samples of light weight aerobic training programs
- Have students lead in groups of four, two, and by themselves
- Have students find their target heart rate from a chart by age
- Have students find their target heart rate with a simple target heart rate formula
- Have students find their target heart rate using the heart rate reserve formula

Learning Experiences

1. Break down of the skills and progression

A. Before the lesson discuss:

- The affects your attitude toward aerobic exercise
- Definition of aerobic fitness
- Primary Health Risk Factors
- Benefits of aerobic activity
- Pre-assessment considerations
- Your personal aerobic fitness program
- Common injuries
- Additional safety precautions
- Age precautions for aerobic exercise
- Exercising in Hot Weather
- Exercising in Cold Weather
- Efficient and Safe Training

B. Measuring Aerobic Fitness:

- Assessing Aerobic Fitness (Mile run, Pacer, Walking Test, Step Test)
- Health related fitness
- Interpreting assessment results
- Goal setting
- Individualize Aerobic Fitness Programs
- Taking the Pulse
- Calculating Maximum Heart Rate (MHR)
- Calculating Target Hear Rate (THRZ)

C. Review Guidelines for Exercise:

- Appropriate clothing
- Appropriate shoes to wear
- Inclement weather strategies/activities
- Safety Precautions
- Appropriate warm-up activities
- Appropriate cool-down activities
- Training Methods for Aerobic Fitness (Continuous, Circuit, Interval, Fartlek, Hill Running)
- Principle of Overload
- Principle of Progression
- Principle of Specificity

D. Flexibility:

- Types of Stretching for Aerobic Activity
- Application of FITT Principles
- Safety Precautions and Contraindicated Stretching
- Flexibility Exercises Specific to Aerobic Activity

E. Cardiovascular Fitness

- Monitoring the Heart
- Cardiovascular Disease
- Benefits of Cardiovascular Exercise
- Application of FITT Principles
- Goal Setting for Cardiovascular Improvement
- Training for Base and Intermediate Health-Related Fitness
- Training for Athletic Performance
- Addressing Motor Skills Through Aerobic Fitness Activities
- Cross-Training
- Par Courses
- Obstacle Courses
- Hydration and Fuel, During Aerobic Activity

- Technology used in Aerobic Activity
- Muscular Fitness
- Myths about Weight Training and Aerobic Activity
- Muscle Fiber Composition and Aerobic Activity
- Methods of Weight Training for Aerobic Fitness
- Application of FITT Principles
- Body Composition
- Nutrition
- Body Types and Aerobic Exercise
- The effects of aerobics exercise on body composition
- Methods of Measuring Body Composition
- Calorie Balance
- Benefits of weight control
- Goal Setting for aerobic capacity
- Carbohydrate Loading
- Weight-Control Misconceptions
- Consumer Issues
- What Influences Your Buying Decisions
- Have You Been Ripped Off?
- False Advertising
- Exercise Gadgets and Gimmicks
- Fad Diets and Weight Loss Drugs
- Anabolic Steroids
- Selecting Aerobic Equipment for your Home

I. Designing Your Own Program
- Developing an Aerobic Personal Fitness Program
- Steps In Designing Your Aerobic Personal Fitness Program
- Starting Your Aerobic Program
- Motivation to Sustain Your Aerobic Program
- Evaluating Your Aerobic Personal Fitness Program

2. **Employing Specific Methods**

- Teach students that personal fitness is personal, they are only competing against themselves
- Emphasis should be made on the process of becoming aerobically fit
- Promote and reinforce a lifetime commitment to wellness through a aerobic active and healthy lifestyle
- Teach students the benefits of being aerobically fit
- Provide students a safe challenging, and enjoyable activities that will allow students to evaluate their lifestyles
- Teach students about the number one killer in the United States

Enrichment/Differentiated Instruction

A. Differentiated Instruction- it is important to distinguish the current skill level of your students in order to differentiate instruction and maximize learning. Teachers provide differentiated instruction and activities for multiple skill levels that address the needs of the students. Activities or drills should be challenging for students who have met the skill level and should offer additional practice opportunities for those that have not met the target skill level.

B. Enrichment – Teachers can often give instruction that broadens and extends student's level of understanding. Encouraging the students to take fitness classes outside of school is extremely important for the real world experience. Provide information on places in the community to join programs or experience aerobic activity to continue the student's active lifestyle outside of school. In addition, teachers can provide students with inter-mural programs for students that like to participate in aerobic activities but may not be good enough to compete on the schools inter-scholastic team.

Culturally Relevant and Responsive Instruction

- Use cultural references to impart knowledge, skills, and attitudes.
- Connect the learning to students' prior knowledge and experiences.
- Literature can be used to build prior knowledge or enhance student's awareness of a variety of aerobic experts, such Shazia Hiyat, Joe DiAngelo, Carlos Lopez, Daniel Bautista, Ann Schefers-Coles, Meseret Defar and Hector Bruno.
- Prior knowledge should be welcomed and acknowledged
- Lady Warriors (Movie)

Accommodating Students with Special Needs

1. Safety
   - Contact the school nurse or designee to obtain pertinent medical information
   - Be aware of the students' medical ID tags for disability
   - The teaching progression and learning tasks should be differentiated (when applicable) to fit student needs

2. Students in Wheelchairs
   - Students in wheelchairs should participate in aerobic training in their wheelchair
   - Provide arm ergo meters for wheelchair students
   - Provide workout partners to wheelchair students to assist in easy access to aerobic machines

Equipment Tips

- Arm ego meters for wheelchair students
- Elliptical trainers
- Stationary Spin Bikes
- Mountain Bikes
- Rollerblades
- Treadmills (The most maintenance)
- Up-Right Bikes
- Recliner Stationary Bikes
- Dance, Dance, Revolution Arcade Games
- Stair climbers
- Steps for Step Aerobics
- Hop Sports

Instructional Tips

- Plan lessons with realistic expectations.
- Encourage early success with appropriate progression
- Start students learning of appropriate mechanics using easy slow movement
- Group students into groups of 3
- When teaching each exercise emphasize safety
- When leading direct instruction move the students to an area away from distractions

Communication Tips

- Praise even small steps of success
- Communicate using appropriate biomechanical, physiological, psychological and anatomical terminology
- Encourage social interaction with activities that emphasize working cooperatively with partners
- Promote good sportsmanship and appropriate behavior during all conditioning activities
- Identify and post motivational slogans
- Post articles on aerobic fitness and conditioning on the bulletin boards

Suggested Lead-Up Activities

- Single day aerobic plans
- One week aerobic plans
- One month aerobic plans
- Six month aerobic plans
- Provide students with samples of work out plans
- Aerobic machine manual routines
- Aerobic machine programmed routine
- Manually taking pulse
- Taking a pulse on a heart rate "Insta-Pulse"
- Take heart rate with a heart rate monitor

Teaching Aids

1. Warm-up activities-
   To increase body temperatures have students complete 3-5 minutes of brisk aerobic exercise in a gradual progression (light jog, brisk walk, jumping rope, rowing machine, or jumping jacks in place.
2. Stretches-
   The stretches should be specific to the movements for the muscles that you will use in the lesson and unit (all muscles that will be used, slowly) through a complete range of motion.
3. Cool Down-
   Stretching while cooling down and reviewing the day's lesson is important. Allow students to repeat stretches that were specific to the muscles used in the day's lesson.

4. Skill tests-
    - Pacer
    - Mile run
    - Walking test
    - Muscle and body anatomy
    - Anatomical movements for aerobic activities
    - Fit Smart Two test

Interdisciplinary Learning

Language arts

- Use a thesaurus to identify alternative word choices for designated vocabulary words
- Maintain a physical education journal in which students write about their aerobic training
- Read books related to aerobic training and conditioning activity and write a one page summary

Mathematics

- Find the perimeter of designated running tracks
- Convert kilometers to miles
- Use graphs and charts to record progress from students training programs
- Calculate target heart rate using the heart rate reserve formula
- Calculate the impact force of the foot strike in jogging
- Find the average mile pace for a 3 hour 11 minute marathon
- Calculate Body Mass Index
- Calculate the miles per hour of a person who is running an 8 minute mile
- Calculate the caloric expenditure of a 150 person, for running, swimming, cycling, skating and jumping rope

History/Social Science

- Develop a timeline of marathon world records
- Locate the country and city of where the marathon originated
- Research and make a list of countries and their locations that have won the most Olympic medals in aerobic activities

Art

- Create a 8.5 X 11 inch poster depicting aerobic activity
- Create a aerobic activity collage
- Draw or photograph an image of running
- Create a two or three-dimensional work of art that addresses physically active lifestyles

Music-

- Create an aerobic training CD for 12, 20 and 40 minutes intervals
- Create melodic and rhythmic improvisations in a style or genre within a musical culture (e.g., gamelan, jazz, and mariachi) that can be played during warm-up activities

Science

- Describe how force is generated in the human body
- Describe the use of 3 types of levers in the human body in running
- Explain the parts of the human motor unit
- Explain the difference between white and red muscle fiber and the specificity of training those fibers
- Explain the theory of carbohydrate loading and why it should work

Technology

- Use heart rate monitors and pedometers in physical activity and interpret the data
- Videotape and analyze three different jogging styles
- Use a biomechanical movement analyzing software to research a partners swimming movements
- Describe how to use body composition analyzing with an infrared analyzer

Inclement Weather

Create a repertoire of instructional lessons related to this unit that can take place in sheltered areas during inclement weather. This will ensure continuation of standards-based instruction. Suggested activities include:

- Circuit training
- Indoor fitness center
- Aerobic stations
- Fitness assessment stations
- Jumping rope under sheltered area

Suggested Homework

- Write a 2 page expository composition, which explains the difference between aerobic and anaerobic training
- Write a 1-2 page comparative and contrastive analysis of body movements used for jogging and sprinting
- Research and make a list of resources in the community available for fitness training
- Encouraged students to support and participate in community organizations that promote health and fitness by providing recreational opportunities

Resources

- Men'sHealth Power Training by Robert dos Remedios, MA, CSCS
- Personal Fitness Looking Good Feeling Good by Williams, Smith, Johnson and Harageones
- Fitness for Life by Chuck Corbin
- Fitnessgram Activitygram
- Maintaining the Miracle, An Owner's Manual for the Human Body
- Physical Education for Lifelong Fitness

Teacher Reflections

Good teaching should include ample time to reflect on the unit or lesson at the conclusion. Determine what worked well, what you might change and/or improve the next time you teach the unit. Focus on methods for grouping students, facilities, equipment, and the distribution of equipment, written assignments, handouts, visual aids and any other instructional aids that could enhance your instruction.

Physical Education Lesson Plan
Lesson length 4 months

Grades 11- 12
Course 4- Aerobic Activity

Description:

The major emphasis of this lesson is to provide opportunities for eleventh and twelfth grade students to chart their state of fitness based on scores from the *Fitnessgram*© pre-assessment. Students use the data to analyze the results and evaluate their aerobic capacity and BMI as it pertains to the healthy fitness zone. Then, students set realistic personal fitness goals to improve their aerobic capacity and body composition. The established goals must be set to improve their performance in aerobic activities. Next, students design a personal four month physical fitness program in preparation for a competitive aerobic activity. During the four month period the students will identify resources in the real world setting where they can practice their aerobic activities. Students will include outside activities in their personal fitness program and log each visit. Student's will periodically assess their aerobic capacity and BMI and readjust their personal goals and modify their personal physical fitness program to reach their goals.

Objectives:

- Students will be able to evaluate their aerobic capacity and body mass index results to determine their health related fitness
- Students will be able to design a personal fitness program to improve their aerobic capacity and body composition
- Students will be able to set realistic goals in aerobic capacity and body composition
- Students will be able to adjust their personal fitness goals based on periodic assessments to improve their aerobic capacity and body composition
- Students will be able to keep accurate activity logs of the aerobic activity they participate in outside of class in the real world setting

Standards Addressed:

1.4 Practice aerobic activities in real world settings.
2.2 Adjust personal fitness goals on the basis of fitness assessment measures to improve performance in aerobic activities.
2.3 Design a personal physical fitness program in preparation for the demands of a competitive aerobic activity.

Materials:

- *Fitnessgram*© DVD
- Heart rate monitors (one for each student in class is preferable)
- *Fitnessgram*© test administration handout for each assessment
- Clip boards and pencils for each person (1 per every 3 students)
- *Fitnessgram*© student score sheets

- Healthy Fitness Zone sheets (one for each student)
- Goal setting guidelines handout
- Blank goal setting sheets
- Sample personal fitness program
- Blank personal fitness program charts
- Flyers for 5K, 10K, bike, swim or Triathlon races in the community
- Lists of suggested websites for community aerobic race events
- Sample activity logs
- Blank activity logs
- FITT principles for aerobic activity
- Nutrition information on calorie expenditure
- Nutrition information on caloric content for a variety of food items

Set-up:

Provide instruction in a classroom setting or a place where students can sit to listen and be able to write and take notes. Use of a projector and screen or clean light colored wall so that each student can see clearly is advisable. Students must have all ready learned the skills and knowledge to administer the *Fitnessgram*© and evaluate the results of the test.

Attendance & Warm Up

The teacher will take and record attendance while students are doing stretching, after having performed a 5 minute aerobic activity.

Fitness Activity

Students will perform push-ups according to the number on a card drawn by a student from a deck. The students can choose the level of difficulty, one knee, two knee, straight body or clapping push-ups. They will repeat this three times. The teacher will review the FITT principals for strength training before, during and after the three sets of push-ups.

Learning Experience

Step One:

Once the students have the results of their pre-test they will evaluate them by comparing the scores to the healthy fitness zone chart. Students will use the data to construct a fitness profile and a physical activity profile. Students will build a health-related physical profile by charting their results for aerobic capacity and body mass index into four categories. Have students place an "X" in the appropriate box.

Rating	Aerobic Capacity	Body Composition
1. Above HFZ		
2. Upper ½ of HFZ		
3. Lower ½ of HFZ		
4. Below HFZ		

If you have access to the *Fitnessgram*© software you can generate a report that shows students' health-related physical profile.

Step Two:

Students will create a list of two or more activities that they enjoy participating in, from the following categories:

Lifestyle Activities	Active Sport and Recreational Activities	Active Aerobic Activities
Walk rather than drive/ride	In-Line skating	Biking
Take the stairs	Basketball	Jogging
Do yard work	Tennis	Aerobic dance
Play golf	Hiking	Step Aerobics
Go Bowling	Dancing	Swimming

Students may add activities to each list with the instructor's approval.

Step Three:

Students first consider their rationale and objectives for developing an individualized aerobic and body composition program. Some students may be interested solely in fitness and wellness, whereas others are motivated by the idea of participating in competitive sports. As students focus on their needs they set personal goals for improved performance. Identified goals include student participation in at least two aerobic competition events, which could be a school sponsored activity or held outside school. The events should be about two months apart to allow significant improvement between each competitive event. Next, students need to consider their health-related physical profile (from step one) and set goals in their aerobic capacity and BMI. The students will write three goals for aerobic capacity and three for their BMI. The three goals will be made up of a short, medium and long-range goal. Short term is one to two weeks, medium goals are one to two months, and long range goals are 3 – 6 months or longer. Students with results not in the healthy fitness zone select areas for improvement to help them achieve at least the minimum levels of fitness. If they are in the healthy fitness zone they can choose to improve or maintain depending on their goal objectives. The goals need to be realistic, specific, and personalized. The goals should be for both aerobic capacity and BMI, and they should have health related fitness goals and physical activity goals.

Step four:

Now students begin to design a two month conditioning program using the data from the first three steps, they list the activities (frequency, intensity, time and type) and exercises in which they will engage to reach their goals. The activities should be school activities and outside school activities (activities in the real world setting). Student's plan must also include a convenient time of day that will allow for enjoyable exercise. Provide students with several sample strength and flexibility workout programs as models that show how to incorporate the FITT principles. This allows for scaffolding that will equip students to design their own aerobic activities. In addition, provide a blank workout program for students to use as a template to write their conditioning program. The

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