Course: Strength and Conditioning
Year: 2023

Lakewood City Schools
Course of Study for Strength and Conditioning

The goal of the strength and conditioning program is to provide students with the knowledge and skills necessary to develop strength, power, speed, and endurance while also improving overall health and fitness. This program will also help to reduce the risk of injury and improve athletic performance for students who participate in competitive sports.

Incorporating social and emotional learning (SEL) into a high school strength and conditioning class can have numerous benefits for students beyond just physical fitness. SEL skills such as self-awareness, self-management, social awareness, relationship skills, and responsible decision-making can help students develop a sense of purpose, build resilience, manage stress, and improve communication with peers and adults. These skills can also help students cultivate a positive attitude towards exercise, develop healthy habits, and enhance their overall well-being. By integrating SEL into a strength and conditioning class, educators can help students develop not just their physical strength, but also their social and emotional strength, setting them up for success both in and out of the classroom.

Course: Strength and Conditioning
Year: 2023

Pacing Guide

The suggested pacing guide provided outlines the course by weeks of the semester. Strength and Conditioning is one semester in length.
Injury Prevention and Rehabilitation and Lifelong Fitness and Wellness will be taught in conjunction with the training sections of the course.

Introduction to Strength and Conditioning	Weeks 1-2
Anatomy and Physiology	Weeks 3-4
Principles of Strength and Conditioning	Weeks 5-6
Assessment and Program Design	Weeks 7-8
Resistance Training	Weeks 9-11
Cardiovascular Training	Weeks 12-13
Flexibility Training	Weeks 14-15
Nutrition and Supplementation	Weeks 16-17

Course: Strength and Conditioning
Year: 2023

I. Introduction to Strength and Conditioning

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 3: Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.	Identify activities and apply fitness principles (e.g., rates of perceived exertion, pacing) to maintain or improve cardiorespiratory endurance. Identify different types of strength activities and apply fitness principles to develop muscular strength and endurance. Identify activities and apply FITT principles to improve or maintain flexibility.	Students will be able to explain the role of strength and conditioning in achieving fitness goals. Students will be able to identify and describe various components of fitness and the physiological effects of strength and conditioning. Students will be able to develop and implement a strength and conditioning program that aligns with personal fitness goals.	Lecture and discussion on the benefits of regular physical activity and the role of strength and conditioning in achieving fitness goals. Hands-on activities such as measuring heart rate, calculating BMI, and tracking progress towards fitness goals. Collaboration with local gyms or personal trainers to provide guidance and expertise on strength and conditioning.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



II. Anatomy and Physiology

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 2: Applies knowledge of concepts, principles, strategies and tactics related to movement and performance **STANDARD 3:** Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.	Apply critical elements and biomechanical principles (e.g., stability, rotation, linear and angular motion) to perform increasingly complex movement forms. Analyze and evaluate performance of self and others across multiple movement forms. Apply biomechanical principles, knowledge of critical elements, cues, practice drills and fitness activities to improve movement performance.	Students will be able to describe the anatomy and physiology of the muscular and skeletal systems. Students will be able to identify proper form and technique in strength and conditioning exercises. Students will be able to analyze the physiological responses to different types of exercise.	Hands-on activities such as muscle identification, joint movements, and proper lifting techniques. Lecture and discussion on the importance of proper form and technique in strength and conditioning exercises. Laboratory experiments and data analysis to measure physiological responses to exercise.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



III. Principles of Strength and Conditioning

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 2: Applies knowledge of concepts, principles, strategies and tactics related to movement and performance **STANDARD 3**: Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.	Apply critical elements and biomechanical principles (e.g., stability, rotation, linear and angular motion) to perform increasingly complex movement forms. Analyze and evaluate performance of self and others across multiple movement forms. Apply biomechanical principles, knowledge of critical elements, cues, practice drills and fitness activities to improve movement performance. Identify different types of strength activities and apply fitness principles to develop muscular strength and endurance. Identify activities and apply FITT principles to improve or maintain flexibility.	Students will be able to identify and explain training principles such as specificity, overload, and progression. Students will be able to describe different types of training methods for strength and conditioning. Students will be able to develop and implement a training plan that incorporates principles and methods for enhancing physical fitness.	Lecture and discussion on training principles and methods for strength and conditioning. Group projects and presentations on specific training methods such as circuit training, interval training, and plyometrics. Use of fitness trackers and apps to develop and track progress towards training goals.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



IV. Assessment and Program Design

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 1: Demonstrates competency in a variety of motor skills and movement patterns. **STANDARD 2:** Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.	Conduct fitness assessments to determine current fitness levels. Create a health-related fitness plan that applies fitness concepts and principles for each component of fitness	Students will be able to conduct fitness assessments to determine current fitness levels. Students will be able to design and implement a personal fitness program that aligns with fitness goals and incorporates principles of strength and conditioning.	Use of fitness assessment tools such as the YMCA fitness test, VO2 max testing, and body composition analysis. Guest speakers from the fitness industry to share their expertise on program design and implementation. Use of software and apps for designing and tracking progress towards fitness goals.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



V. Resistance Training

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 1: Demonstrates competency in a variety of motor skills and movement patterns. **STANDARD 2:** Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.	Demonstrate consistency in individual specialized skills in health-related fitness activities Create a health-related fitness plan that applies fitness concepts and principles for each component of fitness	Students will be able to identify and describe various types of resistance training exercises . Students will be able to explain the principles of resistance training such as muscle hypertrophy, progressive overload, and specificity. Students will be able to develop and implement a resistance training program that aligns with personal fitness goals.	Hands-on activities such as weight lifting and resistance band exercises. Lecture and discussion on the principles of resistance training. Collaboration with local gyms or personal trainers to provide guidance and expertise on resistance training.

Course: Strength and Conditioning
Year: 2023

VI. Cardiovascular Training

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 1: Demonstrates competency in a variety of motor skills and movement patterns. **STANDARD 2:** Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.	Demonstrate consistency in individual specialized skills in health-related fitness activities Create a health-related fitness plan that applies fitness concepts and principles for each component of fitness	Students will be able to identify and describe various types of cardiovascular training exercises. Students will be able to explain the principles of cardiovascular training such as aerobic and anaerobic training, heart rate zones, and recovery time. Students will be able to develop and implement a cardiovascular training program that aligns with personal fitness goals.	Hands-on activities such as running, cycling, and rowing. Lecture and discussion on the principles of cardiovascular training. Use of heart rate monitors and fitness trackers to monitor progress and optimize training.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



VII. Flexibility Training

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 1: Demonstrates competency in a variety of motor skills and movement patterns. **STANDARD 2:** Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.	Demonstrate consistency in individual specialized skills in health-related fitness activities Create a health-related fitness plan that applies fitness concepts and principles for each component of fitness	Students will be able to identify and describe various types of flexibility exercises. Students will be able to explain the principles of flexibility training such as dynamic stretching, static stretching, and PNF stretching. Students will be able to develop and implement a flexibility training program that aligns with personal fitness goals.	Hands-on activities such as yoga, Pilates, and stretching routines. Lecture and discussion on the principles of flexibility training. Collaboration with local yoga studios or Pilates instructors to provide guidance and expertise on flexibility training.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



VIII. Nutrition and Supplementation

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 3: Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.	Design a plan to maintain an appropriate energy balance for a healthy, active lifestyle.	Students will be able to identify and describe the components of a healthy diet. Students will be able to explain the role of macronutrients and micronutrients in maintaining health and fitness. Students will be able to evaluate the effectiveness and safety of dietary supplements.	Guest speakers from nutrition and supplement industries to share their expertise. Lecture and discussion on the principles of nutrition and supplementation. Use of nutrition and calorie tracking apps to monitor dietary intake.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



IX. Injury Prevention and Rehabilitation

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 4: Exhibits responsible, personal and social behavior that respects self and others	Contribute to the development and maintenance of rules that provide for safe participation in physical activities. Recognize unsafe conditions in an athletic venue and independently take steps to correct them.	Students will be able to identify and describe common injuries related to strength and conditioning. Students will be able to explain strategies for preventing injuries during exercise. Students will be able to develop and implement a rehabilitation program for a common injury.	Hands-on activities such as foam rolling and stretching to prevent injuries. Guest speakers from physical therapy or sports medicine industries to share their expertise. Use of injury prevention and rehabilitation apps for designing and tracking progress towards recovery.

Course: Strength and Conditioning
Year: 2023

LAKEWOOD CITY SCHOOLS



X. Lifelong Fitness and Wellness

Content Standards and Benchmark	Grade Level Indicators	Learning and Performance Expectations	Assessment of Learning Options/ Resources
STANDARD 3: Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness **STANDARD 5:** Recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.	Analyze the impact of physical activity on the body and explain the health benefits of regular participation in moderate to vigorous physical activity. Analyze the impact of physical activity on emotional health. Analyze the connection between physical activity and intellectual health as it relates to the positive effects of physical activity on brain function Share the specific reasons for participating in a selected physical activity. Identify the challenges in learning a new physical activity. Articulate reasons that specific physical activities would be enjoyable as lifetime pursuits.	Students will be able to identify and describe the benefits of lifelong fitness and wellness practices. Students will be able to demonstrate the ability to set and achieve personal fitness and wellness goals. Students will be able to apply self-awareness and self-management skills in physical activity settings. Students will be able to demonstrate social awareness and relationship skills in physical activity settings.	Education on the benefits of lifelong fitness and wellness practices through lectures, discussions, and readings. Goal-setting activities and opportunities for students to track their progress towards achieving their fitness and wellness goals. Incorporation of activities that promote self-awareness, self-management, social awareness, and relationship skills. Group discussions and reflections on social and emotional learning experiences in physical activity settings.

	Share the specific social benefits resulting from participation in a selected physical activity.		

Course: Strength and Conditioning
Year: 2023

Resource: Fitness Log

Date: _____

Strength/Weights:

Date	3-27			3-28		3-29		3-30	
Exercise	Sets #	Weight	Reps	Weight	Reps	Weight	Reps	Weight	Reps

Course: Strength and Conditioning
Year: 2023

Strength/Weights:

Course: Strength and Conditioning
Year: 2023

Cardio/Other:

Exercise	Time	Dist	Int*	Time	Dist	Int	Time	Dist	Int

***Intensity: L - Light / M - Moder ate / V – Vigorous**

Course: Strength and Conditioning
Year: 2023

Chest Exercises
Bench Press
Dumbbell Bench Press
Chest Fly Machine

Back (Latissimus) Exercises
Lat Pull Down
Rowing Machine
Dumbbell Rows

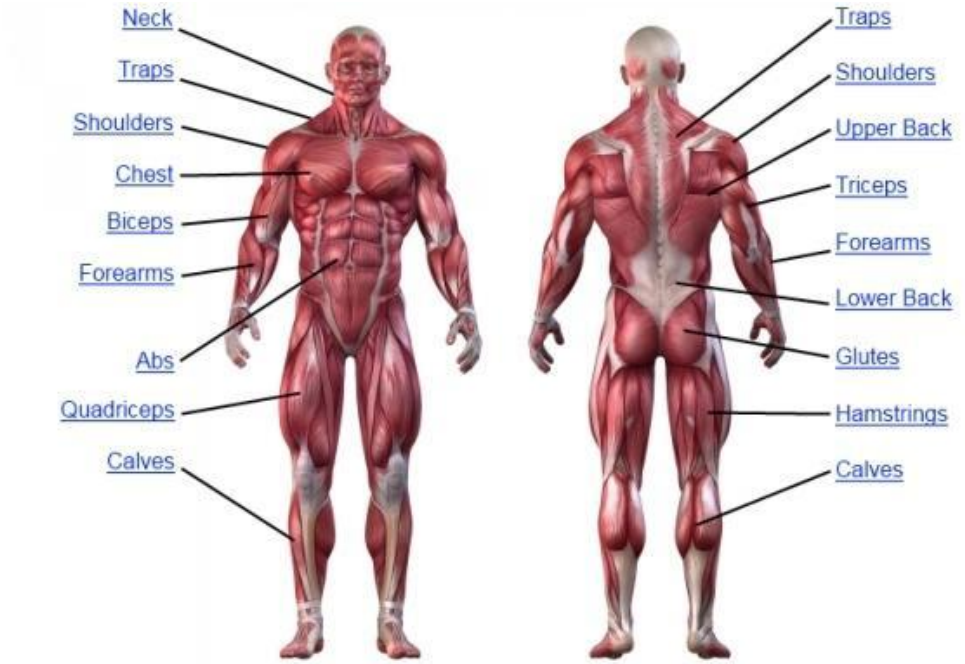
Shoulder Exercises (Deltoids)
Dumbbell Anterior Raises
Dumbbell Lateral Raises
Dumbbell Rear Delt Raises

Shoulder/Trapezius Exercises
Overhead Press
Dumbbell Overhead Press
Upright Row
Rowing Machine

Arms (Biceps
Dumbbell Bicep Curls
EZ Bar Bicep Curls
Preacher Curls

Arms (Triceps)
Tricep Extensions (Cable)
Dumbbell Tricep Extensions

Legs
Squats
Leg Press
Leg Extension
Leg Curl



Course: Strength and Conditioning
Year: 2023

Resource: Strength and Conditioning Anatomy Exam

1. What is the name of the muscle that connects the shoulder blade to the upper arm bone?
A. Deltoid
B. Trapezius
C. Rhomboid
D. Latissimus dorsi

2. Which muscle group is responsible for extension of the leg at the knee joint?
A. Hamstring muscle group
B. Quadriceps muscle group
C. Adductor muscle group
D. Gastrocnemius muscle group

3. Name the three types of muscle tissue found in the human body.
A. Skeletal muscle, smooth muscle, and cardiac muscle
B. Ligaments, tendons, and cartilage
C. Red muscle, white muscle, and gray muscle
D. Long muscle, short muscle, and thin muscle

4. What is the name of the muscle that runs along the back of the thigh and is responsible for hip extension and knee flexion?
A. Adductor longus
B. Quadratus femoris
C. Semitendinosus
D. Psoas major

5. What is the difference between tendons and ligaments?
A. Tendons connect muscles to bones, while ligaments connect bones to other bones.
B. Tendons connect bones to other bones, while ligaments connect muscles to bones.
C. Tendons are found in joints, while ligaments are found in muscles.
D. Tendons and ligaments are the same thing.

6. Which bone in the arm is located between the elbow and the wrist?
A. Ulna
B. Radius
C. Humerus
D. Scapula

7. What is the function of the diaphragm muscle?
A. The diaphragm muscle is responsible for breathing and separates the chest cavity from the abdominal cavity.
B. The diaphragm muscle is responsible for movement and stabilization of the shoulder blades.
C. The diaphragm muscle is responsible for flexion of the elbow.
D. The diaphragm muscle is responsible for extension and rotation of the neck.

8. Which muscle is responsible for flexing the elbow?
A. Triceps brachii
B. Biceps brachii
C. Brachialis
D. Deltoid

9. What is the name of the largest muscle in the human body?
A. Quadriceps femoris
B. Gluteus maximus
C. Hamstring muscle group
D. Gastrocnemius muscle group

10. Name the three types of joints found in the human body.
A. Ball-and-socket joints, hinge joints, and pivot joints
B. Synovial joints, cartilaginous joints, and fibrous joints
C. Elbow joints, knee joints, and shoulder joints
D. Red joints, white joints, and gray joints

11. Which muscle is responsible for rotating the arm laterally?
A. Infraspinatus
B. Supraspinatus
C. Teres major
D. Teres minor

12. Which bone in the leg is commonly known as the shin bone?
A. Fibula
B. Patella
C. Tibia
D. Femur

13. What is the name of the muscle that separates the thoracic and abdominal cavities?
A. Diaphragm
B. Abdominal oblique
C. Transverse abdominis
D. Rectus abdominis

14. Which muscle is responsible for abduction of the arm?
A. Deltoid
B. Pectoralis major
C. Latissimus dorsi
D. Teres major

15. What is the function of the gastrocnemius muscle?
A. Flexion of the knee.
B. Dorsiflexion of the foot.
C. Plantar flexion of the foot.
D. Extension of the hip.

16. What is the name of the muscle that allows for adduction of the arm?
A. Pectoralis major
B. Deltoid
C. Trapezius
D. Latissimus dorsi

17. Which bone in the human body is commonly referred to as the collarbone?
A. Scapula
B. Clavicle
C. Humerus
D. Ulna

18. What is the function of the trapezius muscle?
A. The trapezius muscle is responsible for movement and stabilization of the shoulder blades, as well as extension and rotation of the neck.
B. The trapezius muscle is responsible for flexion of the elbow.
C. The trapezius muscle is responsible for dorsiflexion of the foot.
D. The trapezius muscle is responsible for adduction of the arm.

19. Which muscle is responsible for dorsiflexion of the foot?
A. Tibialis anterior muscle
B. Gastrocnemius muscle
C. Soleus muscle
D. Flexor digitorum muscle

20. What is the name of the muscle that makes up the bulk of the chest?
A. Pectoralis major
B. Deltoid
C. Biceps brachii
D. Brachialis

Answer Key:

1. C
2. A
3. A
4. C
5. A
6. A
7. A
8. C
9. B
10. A
11. A
12. C
13. A
14. A
15. C
16. A
17. B
18. A
19. A
20. A