Board/Authority Authorized Course Framework Template

School District/Independent School Authority Name: Chilliwack School District	**School District/Independent School Authority Number:** SD #33
Developed by: Matthew Greenfield	**Date Developed:** October 5th, 2022
School Name: GW Graham Secondary	**Principal's Name:** Chuck Lawson
Superintendent Approval Date (for School Districts only):	**Superintendent Signature (for School Districts only):**
Board/Authority Approval Date:	**Board/Authority Chair Signature:**
Course Name: Principles of Strength Training 10	**Grade Level of Course:** 10
Number of Course Credits: 4	**Number of Hours of Instruction:** 120

Board/Authority Prerequisite(s): Physical and Health Education 9

Special Training, Facilities or Equipment Required: Weight room with machine and free weights (Olympic), classroom, track, skipping ropes, plyometric boxes, treadmills, exercise bikes, elliptical machines, and aerobic exercise equipment

Course Synopsis: This course will be offered throughout the year for grade 9 and 10 students. It will provide students with an introduction to strength training and will include education and experience with lifting weights, performing plyometric drills, and running drills. This course is intended for students wanting an introduction to concepts needed to develop their overall strength, cardiovascular ability and fitness, develop a lifestyle that will maintain health for a lifetime and to learn the general principles of strength training.

Goals and Rationale: There are many physiological and psychological benefits to strength training (The Physician and Sports Medicine. Vol 26-No. 5 – May 1998). Some of those include: Improved self-esteem and confidence, increases in bone strength/density and improved functional strength for sports and daily activities. Strength training for sport has never been more popular. Many students express the desire to be on an official weight training program. Students will also learn other ways to enhance and develop their athletic skills. Regular PHE courses only cover

weight training in a generic and simplistic fashion. This course offers an in-depth introduction to strength training in much greater detail. Principles of Strength Training focuses on an introduction to compound lifting techniques and on improving physical strength and cardiovascular performance.

Aboriginal Worldviews and Perspectives:

Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).

Learning involves patience and time.

Learning requires exploration of one's identity.

Learning involves recognizing the consequences of one's actions.

Course Name: Principles of Strength Training 10 **Grade: 10**

BIG IDEAS

Compound lifting movements are essential for increasing functional strength.	Proper lifting technique is essential for safety and progression.	The human body adapts to overload and fatigue.	Training program design is dependent upon specific goals and desired outcomes

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Exercise Program Design:** • Incorporate compound movements into training programs • Identify and describe different training techniques • Use correct terminology for equipment and muscle groups • Establish and implement effective warm-up techniques • Demonstrate correct lifting and stretching techniques • Set short- and long-term personal goals **Initial Training Phase:** • Demonstrate and describe the importance of developing core muscles • Demonstrate and describe the importance of compound movements • Demonstrate appropriate conduct and safety procedures in the weight room • Describe and demonstrate circuit training and a general body workout • Analyze and re-evaluate goals as necessary	*Students are expected to know the following:* • Correct form for the main compound movements - Bench press - Squat - Dead lift • Basic human anatomy • High Intensity Interval Training and its role in strength training • Overtraining symptoms and prevention • Weight room etiquette and safety procedures • Correct spotting techniques • Correct form for all exercises • Critique of exercise programs

Continued Training Phase: • Demonstrate increased levels of strength development • Describe and demonstrate advanced lifting techniques such as pyramids, supersets, and strip/drop sets • Correctly analyze and offer guidance within the movements of others • Identify ways to adapt a training program around illness, life commitments, injury, and low-energy days • Analyze and re-evaluate goals as necessary **Supplementary Information Phase:** • Describe the pros and cons of different weightlifting programs • Identify ways that fitness can improve one's quality of life and the benefits of lifelong fitness • Identify the relationship between physical activities and overall physical and mental well being	

Big Ideas – Elaborations

Compound lifting movements are essential for increasing functional strength

Sample questions/opportunities to support student inquiry

- How are compound lifts related to movements in daily life?
- Why are compound lifts the most effective way to improve strength and body composition?

Proper lifting technique is essential for safety and progression

Sample questions/opportunities to support student inquiry

- How does proper technique prevent injury?
- How does proper technique lead to improvements in strength?

The human body adapts to overload and fatigue

Sample questions/opportunities to support student inquiry

- Why is progressive overload necessary within a strength training program?
- How is fatigue and perceived exertion related to improvements in strength and endurance?

Training program design is dependent upon specific goals and desired outcomes

Sample questions/opportunities to support student inquiry

- How is defining personal fitness goals necessary for effective program design?
- How can one's fitness goals change during their lives?
- Why do fitness goals change over time?
- Why is setting S.M.A.R.T. goals important?

Curricular Competencies – Elaborations

Exercise Program Design

Sample opportunities to support student inquiry:

- How are an individual's goals related to the design of training programs (sport specific, hypertrophy, weight loss)?
- How can you identify and correct common lifting movement mistakes in yourself and others?

- What are the correct movement patterns for compound lifts?

Initial Training Phase

Sample opportunities to support student inquiry:

- Why are compound lifts considered to be the most important for overall development of strength?
- How does core strength and stability decrease the risk of injury and increase athletic performance?
- How does the timing of different macro nutrients lead to improvement of strength?

Continued Training Phase

Sample opportunities to support student inquiry:

- Is my workout plan still effective for my current goals?
- How much has my strength improved?
- Can I identify and correct movement pattern errors?

Supplementary Information Phase

Sample opportunities to support student inquiry:

- How do different exercise programs lead to different strength outcomes?
- How has strength training improved my quality of life?
- What are some general concerns related to health while participating in strength training?

Content – Elaborations

Correct form for compound movements

- Squat
  - Back extension
  - Slight supination of feet, weight on heels
  - Prevent inward knee collapse
  - Eyes up, shoulders back

Content – Elaborations

- Bench Press
  - Neutral spine
  - Grip width
  - Range of motion
  - Hand and wrist position
- Dead Lift
  - Back extension
  - Grip width and type
  - Eyes up
  - Feet wider than shoulders

Correct names for muscles groups

- Biceps, Triceps, Pectorals, Latissimus Dorsi, Deltoids, Quadriceps, Hamstrings, Calves, Abdominals, Core, Back Extensors

High Intensity Interval Training and its role in strength training

- Improvements in cardiovascular performance
- Promote loss of fat tissue while conserving muscle mass
- Completion of cardiovascular training in a shortened period

Overtraining symptoms and prevention

- Symptoms of overtraining
  - Decreases in strength
  - Prolonged excessive soreness
  - Decreased motivation to train
- Prevention of overtraining
  - Acknowledgement that rest is an essential component of strength training
  - Understanding that progressive overload is specific to individuals
  - Approval of workout program by teacher to ensure that individual muscle groups are not going to be trained too frequently

Weight room etiquette and safety procedures

- Etiquette
  - Appropriateness of exercises in different areas of the gym
  - Correct use and cleaning of equipment
  - Avoiding excessive noise
  - How to correctly “work in”
  - Appropriate amount of time to spend of a given piece of equipment
- Safety procedures
  - Correct methods for moving weights
  - Correct methods for re-racking plates and bars
  - Understanding of correct footwear

Content – Elaborations
- Reporting of accidents, injuries, and damaged equipment. Correct spotting techniques - Spotters hands close to bar when partner doing overhead lifts - Only providing as much help as necessary - Proper hand position for spotter - Demonstrate correct movement pattern for all lifts - Identify and correct movement pattern for other lifters Progressive overload is necessary for continued development - Muscles need to continually be challenged to promote changes in strength - Monitoring the amount of weight lifted is necessary to plan for progressive overload - Without progressive overload, strength increase will be minimal as muscles will not hypertrophy Critique of exercise programs - Is a certain exercise program relevant for a specific set of goals? - Is a given exercise program reasonable for certain individuals? - What components are lacking from a given exercise program Technology and training - Heart rate monitoring and its relation to exercise goals - Observation and critique of own movements through video analysis - Trial of various exercise and nutrition apps

Recommended Instructional Components:

Direct instruction

Indirect instruction

Modelling

Student led instruction

Analysis and critique of athletic articles

Video analysis

Recommended Assessment Components: Ensure alignment with the Principles of Quality Assessment

Daily evaluation

- Student maintenance of daily training journal
- Daily student assessment of effort
- Daily teacher assessment of effort and correction of technique

Monthly evaluation

- Re-visit/Reflect upon goals and adjust exercise programs
- Fitness and strength assessments
- Movement testing: Students demonstrate how to properly execute specific exercises
- Athletic article analysis
- Self-evaluation based on Daily Participation Rubric

Learning Resources:

Coach and Athletic Director Periodical

Encyclopedia of Weight Training. Dr. Paul Wood

Strength and Conditioning for young athletes; Scott Roberts

Power Lifting; Barney Groves, PhD.

Theorem Performance & Lifestyle, Matt Chapdelaine

Additional Information:

Benefits of strength training:

- Enhances bone modeling to increase bone strength and reduce the risk of osteoporosis
- Strengthens connective tissues to increase joint stability and help prevent injury
- Increases functional strength for sports and daily activities
- Increases lean body mass and decreases non-functional body fat
- Raises metabolic rate because of an increase in muscle mass
- Improves self-esteem and confidence
- Decrease risk of diabetes and cardiovascular disease
- Improved sleep and metabolic function
- Decreased risk of suffering depression
- Decreased risk of being overweight or obese
- Decreased stress

Source: The Physician and Sports Medicine. Vol 26. No. 5. May 1998