

Black Horse Pike Regional School District

Strength and Conditioning

Unit # 1 - Basics of Strength and Conditioning

Curriculum Date: June 2024

Unit Overview

This unit is designed to guide students' understanding of the sciences that are involved with athletic performance and strength training. It also provides students who are more kinesthetic learners an opportunity to learn in a classroom setting and then apply the knowledge physically in the weight room, cardio room, and on the track.

Instructional design and discussion seeks to guide students in their consideration of multiple perspectives about the best ways to maintain an active and healthy lifestyle and uses inquiry to engage students in learning processes that develop critical thinking about the importance to their future to be able to maintain a level of health and wellness that allows them to achieve goals in all areas and aspects of life. Students are then able to take these ideas and concepts and apply them physically in their strength and conditioning programs.

Students will analyze and evaluate the workouts and training programs as they consider real-world connections to their personal goals and individual fitness journey (athletes, weight loss, general health and wellness, etc.) which will allow them experiences relevant to the culture of learners in the classroom.

Students will have agency to create workouts and training programs to maximize their ability based on their current ability, personal goals and aspirations. Students will have a voice in how they want to modify the training in the class to allow individualization to the workouts being performed.

Assessment will engage students in their written and verbal knowledge of the basics in strength and conditioning as well as their ability to properly perform the movements and exercises being taught in the class. These assessments will be used to make sure the students are able to safely participate in the class and to ensure that they are able to exit the class and use the knowledge learned throughout their adult life to maintain a healthy lifestyle.

Essential Questions:

- What is strength and conditioning?
- What is the benefit of strength training for sports? For general health? For mental health and wellness?
- What is the difference between "Weightlifting" and "Powerlifting?" What exercises fall into each category?
- What is a FAD workout? Why are they not effective?
- What are the basic principles of strength training? (FIT, Principle of overload, specificity, individuality, etc.)
- What is the difference between a compound movement and an isolation movement? Which is better for building muscle and burning fat? Which is better for sports performance? When should each be used in a strength and conditioning workout/program?
- What are the different types of muscle contractions? How can you train your muscles using each type of contraction?
- Do I need to warm up before exercising? How important is a proper warm up to a workout program? What type of movements should I do to warm up? (Dynamic, static, etc.)
- Do I need to do a cool down after a workout? What is the benefit of a cool down?
- Why do I need a spotter? How do I properly spot my training partner to prevent injuries and accidents?

- What is the proper technique for free weight lifts such as the bench press (and its variations), shoulder press, the squat, the deadlift, lat pull down/pull up, seated/bent over row, the power clean, etc. What muscles do these exercises develop?
- What rep range should I be working in to build larger, stronger muscles? More endurance? Hypertrophy?

Learning Targets & Standards

This section establishes WHAT skills will be developed, WHAT content will be understood, applied, analyzed, evaluated, and created.

- *Students will understand the positive health benefits to their physical, mental, and emotional state that is a result of taking part in a strength and conditioning/physical fitness program. Students will examine the short term benefits of a Strength and Conditioning program as well as the long term benefits of taking part in a Strength and Conditioning program.*
 - 2.1.12.PGD.2: Predict how healthy and unhealthy behaviors can affect brain development and impact physical, social and emotional stages of early adulthood.
 - 2.2.12.PF.1: Compare the short- and long-term benefits of physical activity and the impact on wellness associated with physical, mental, emotional fitness through one's lifetime.
 - 2.2.12.PF.5: Analyze fitness knowledge in strength, conditioning, agility, and the physiological responses of the energy systems effects on the mind and body before, during, and after physical fitness activities.
- *Students will create personal goals based on their current fitness level/sport and perform strength and conditioning routines to achieve those goals during the course of the semester. During the course of the class, students will be paired up and/or placed in groups for workouts where cooperation, teamwork, and encouragement will be needed to complete the workout and achieve the desired result. Through this, students will gain an appreciation for the efforts of others and build camaraderie amongst classmates.*
 - 2.1.12.EH.1: Recognize one's personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle.
 - 2.2.12.PF.2: Respect and appreciate all levels of ability and encourage with care during all physical activities.
 - 2.2.12.LF.4: Exhibit responsible social behavior by including and cooperating with classmates of all skill levels, assisting when needed, and collaborating respectfully to solve problems in groups, teams, and in pairs during physical activity.
- *Students will spend time in the classroom learning the science behind strength and conditioning (i.e., anatomy and physiology, kinesiology, exercise science, etc.) and will apply this knowledge in the weight room, cardio room, and track to improve on their overall fitness level. Students will understand that the benefits of a S and C program are lifelong benefits that need to be practiced on a regular basis as they age. Students will also be encouraged to bring this information and knowledge home to create an environment and community of lifelong fitness enthusiasts to help change the rapid number of preventable deaths in the United States.*
 - 2.2.12.PF.3: Design and implement a personal fitness plan, using evidence and evaluate how that reflects knowledge and application of fitness-training principles (FITT) and the components of skill related fitness
 - 2.2.12.PF.4: Determine the role of genetics, age, nutrition, sleep, the environment, and exercise type on body composition and personal health (e.g., anabolic steroids, human growth hormones, stimulants).
 - 2.2.12.LF.1: Apply and share a movement and physical fitness vocabulary that is intrinsic to motivate oneself, to impact family, and others in a community.

- 2.2.12.LF.3: Examine building to a level of fitness to successfully participate in a range of different physical activities during a lifetime.
- *A positive classroom culture will be created through the bond of working through a strength and conditioning program allowing the students to be honest about their fitness journeys and establish them as lifelong participants in sport and exercise.*
 - 2.2.12.LF.2: Develop a sense of openness and willingness when participating in physical fitness activity to share and learn experiences from your own and other cultures.
 - 2.2.12.LF.5: Describe the social benefits gained from participating in physical activity (e.g., meeting someone, making friends, team work, building trust, experiencing something new)
- *Students will be able to explain the correlation between nutrition and strength training in terms of achieving their personal fitness goals whether that be gaining muscle, losing weight, etc.*
 - 2.2.12.N.2: Determine the relationship of nutrition and physical activity to weight loss, gain, and maintenance.

Assessments:

This section establishes HOW student learning will be evaluated.

● Written Assessments

- *Written exams on the classroom material (i.e. vocabulary, exercise principles, concepts of strength and conditioning, etc.). Exams will consist of multiple choice, short answer, and essay questions where students will need to explain their thought process on the concepts of strength and conditioning. 2.2.12.PF.3, 2.1.12.PGD.2, 2.2.12.PF.1, 2.2.12.PF.5, 2.2.12.LF.1*

● Physical Skill Assessments

- *Students will be assessed on their ability to perform the essential lifts and will be graded on their ability to perform each lift using proper technique and safety guidelines. 2.2.12.PF.5, 2.1.12.EH.1*
 - *Bench Press - Feet flat on floor, hips in contact with bench, shoulder blades in contact with bench, hands equidistant apart, breathing properly during the lift.*
 - [*Bench Press Physical Assessment Rubric*](#)
 - *Squat - Feet slightly wider than shoulder width, proper spinal alignment throughout the lift, hips go down and back preventing the student from raising up on the toes, knees stay in alignment (i.e. do not cave in or bow out), breathing properly during the lift*
 - [*Squat Physical Assessment Rubric*](#)
 - *Deadlift - Bar positioned at the mid point of the feet, feet slightly wider than shoulder width, hips lowered and proper spinal alignment to start the lift, knees and hips used in unison to lift the bar off of the ground, back stays straight and does not round during the lift, breathing properly during the lift*
 - [*Deadlift Physical Assessment Rubric*](#)

● Fitness Notebook

- *Students will maintain a fitness notebook where they will write down their results from all of their workouts so that they can*

track their progress from the start of the semester until the end of the semester. The notebook will be monitored by the teacher during the workouts and checked for completeness at the end of each quarter. 2.2.12.PF.3, 2.2.12.PF.2, 2.1.12.EH.1

- [Notebook Rubric](#)

Instructional Strategies & Unit Resources:

This section establishes HOW student learning will be supported.

Unit Resources include:

- NSCA Strength and Conditioning Manual
- ISSA Personal Fitness Manual
- Collaboration with colleagues and coaches
- Articles and Videos on websites:
 - <https://csc.ca.org/>
 - <https://csc.ca.org/educationalresources/strength/proper-technique-videos>
 - <https://www.crossfit.com/media>
 - <https://www.youtube.com/>

Lesson Specific Activities and Assignments

- *Students will maintain a fitness notebook throughout the semester tracking every workout they complete to monitor their progress and celebrate their successes in all areas of strength and conditioning. 2.1.12.EH.1, 2.2.12.LF.3*
- Students will contribute to class discussions and think-pair-shares to help create workouts to be implemented in the weight room, cardio room, or track. 2.2.12.PF.5
- Students will analyze and monitor the technique and form of their workout partners to maintain a safe and healthy workout environment. 2.2.12.LF.4, 2.2.12.PF.2, 2.2.12.LF.2, 2.2.12.LF.5
- Students will be actively engaged in lectures and discussion to fully comprehend how to perform strength and conditioning exercises and workouts safely with proper technique and to begin to build a knowledge base of exercises to begin to build an S and C program from. 2.2.12.PF.5, 2.1.12.EH.1, 2.2.12.PF.3, 2.2.12.PF.1
- Students will be monitored by the teacher during all workouts and the teacher will provide appropriate feedback to ensure that all students are maximizing their physical potential while maintaining a safe and inviting classroom environment. In addition, the teacher can share their own personal fitness journey with the students so that they can understand the importance of being active throughout their lifetime. 2.1.12.EH.1, 2.2.12.PF.2, 2.2.12.PF.3, 2.2.12.PF.4, 2.2.12.LF.3

Vocabulary

- ***Tier 2***

- ***Tier 3***

- Repetition
- Set
- Intensity
- Speed
- Agility
- Strength
- Endurance
- Aerobic
- Anaerobic
- Power
- Individuality
- Specificity
- Overload
- Progression
- Diminishing Returns
- Reversibility
- Tendon
- Ligament
- Rotation

- Hypertrophy
- Exertion
- Anterior
- Posterior
- Medial
- Lateral
- Biomechanics
- Hyperthermia
- Rhabdomyolysis
- Strain
- Sprain
- Phosphagen System
- Glycolytic System
- Oxidative System
- Frontal Plane
- Sagittal Plane
- Transverse Plane
- Abduction
- Adduction

Accommodations & Modifications

Instructional Activities:

1. Build background knowledge of content and vocabulary before entering into the physical component of the class
2. Provide oral and written instructions.
3. Incorporate multimedia/audio visual representation (YouTube, How to videos, etc.) to build understanding.
4. Provide guided notes and/or copies of notes.
5. Provide guiding questions to complete during and/or after class lectures or discussions to ensure the understanding of main ideas
6. Repeat and clarify directions when needed

Gifted and Talented:

1. Allow students more input and ownership of their workouts and activities
2. Allow students time to help others in the class who could benefit from peer mentoring

Assessments:

1. Provide study guides and support outside of class time to review before assessments (after school or common time).
2. Include word banks.
3. Bold, highlight, or underline instructions.
4. Review, repeat, and clarify directions.
5. Chunk sections of assessment and/or reduce the quantity of sections.
6. Reduce the number of questions on an assessment, answer choices in a multiple-choice test, or parts of a writing assignment.

7. Allow use of notes on assessments.
8. Allow for partial credit.
9. Allow for extra time when needed. Offer options for completion during common time or after school.
10. Offer retest or re-do for assignments or assessments where effort was made but comprehension and skills need more time or opportunity to develop.

Interdisciplinary Connections & 21st Century Themes & Skills

- **HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.**
 - *Students will be able to explain the importance of appropriate warm ups and cool downs to prevent injuries to muscles, bones, ligaments, and tendons. We will discuss how feelings of pain and discomfort can be normal (i.e. sore muscles after a workout) or an area of concern (i.e. muscle/ligament/tendon strains, fractures, et.c) depending of the severity and body's natural reactions (swelling, bruising, etc.).*
- **SL.PI.11-12.4 Present information, findings and supporting evidence clearly, concisely, and logically. The content, organization, development, and style are appropriate to task, purpose, and audience.**
 - *When discussing and creating our workouts, students will need to be able to explain their reasoning behind their exercise selections by providing supporting details about the muscles involved and benefits of the selected exercises.*
- **RST.9-10.7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.**
 - *Students will be using a notebook to track their fitness goals and achievements throughout the semester. The students will then be taking that information and turning it into a chart to obtain a visual of their progress in terms of increases in weight lifted (i.e. max lifts), decreases in running times, and body fat changes.*
- **9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition**
 - *As students progress through the semester, they will be tracking their fitness progress in a journal and will be looking at ways that they can improve themselves and their overall health to increase the likelihood that they maintain a healthy and active lifestyle from now through adulthood.*
- **Standard 9.2 Career Awareness, Exploration, Preparation and Training: This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.**
 - *Through the course the students will gain an understanding of how to train their bodies in a safe and correct manner. They will also begin to learn how a S and C program should be designed and this knowledge can be used in the future to gain a certification as a personal trainer and/or strength and conditioning coach.*

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