K-6 Muscular Fitness Concepts for SPARK
Based on WV Content Standards & Objectives (CSOs)

Major Muscle Groups

**Kindergarten:** Students will learn that the muscles help move and shape their body.

**1st Grade:** Students will know two major muscles that help their body move (Triceps and biceps). They will understand the concept that the bicep flexes the arm and the triceps extends the arm.

**2nd Grade:** Student will learn about the major muscles in their leg. These include the quadriceps, hamstring, and gastrocnemius. Students will learn that there are three major muscles in the leg which help it move.

**3rd Grade:** Students will know four major muscle groups that help their body move (triceps, biceps, pectorals, and deltoids) and be able to label them on a diagram. The students will learn that the deltoid elevates the arm. The pectoral muscle gives the students most of their upper body strength.

**4th Grade:** Students will learn that the torso muscles (e.g. abdominals, oblique, and lumbar) help with balance and posture. The oblique muscle allows for torque and twisting motion. All these muscles help in supporting the back for proper posture and support. The oblique muscles aid in twisting and turning of the torso. While the lumbar also supports and aids in balance and posture.

**5th Grade:** Students will learn that their gluteus muscle is the largest and most powerful muscle in their lower body. It is the densest muscle in the body. Also, students will become aware that the heart is a different type of muscle (Cardiac Muscle) that pumps blood throughout the body.

**6th Grade:** By sixth grade the students will know all about the muscles in their body and what the major muscle groups do. Students will also differentiate between skeletal, smooth, and cardiac muscles.

Dev inapp. Overload, Progression, Specificity, and Terms:

**Strength, Endurance, and Flexibility**

**Kindergarten:** Students will participate in various movements that incorporate the muscles (modified push-ups, sit-ups, etc.). Students will participate in stretching. While they are stretching, they will be told that stretching prepares their muscles for activity and increases flexibility.

Students will engage in various movement forms that incorporate large and small muscle groups to develop muscular strength by using modified exercises (push-ups, sit-ups, squat thrusts etc.) using one's own body weight for resistance. Students will participate in flexibility exercises and understand that stretching prepares their muscles for activity.

**First Grade:** Students will be able to understand how much physical activity they should take part in each week. Students will be able to realize that too much activity at a time can be dangerous and that as time goes on, more physical activity can be added on. Students will be able to understand the term flexibility means to stretch muscles, what types of stretches increase flexibility, and explain the importance of flexibility in that it decreases risk of injuries. Students will be able to determine the appropriate amount of physical activity they should participate in each day of the week (30 minutes of structured physical activity and several hours of “play”). Students will be able to recognize the term flexibility (flexibility= The ability of the joint and the muscles and tendons surrounding it to move freely and comfortably through its intended full range of motion.) and the importance of flexibility and how it applies to warm-up activities. Students will continue to perform various movement forms that incorporate large and small muscle groups to develop muscular strength by using modified exercises with body weight resistance.

**Second Grade:** Students will be able to understand the concepts of flexibility, muscular strength, and muscular endurance. Students will continue to learn more about the concepts of working too
hard while participating in physical activities. Students will understand the importance of progressing into other activities and longer exercise periods as time goes by.

Students will recognize the concepts muscular strength and endurance. (Muscular strength= the ability of the muscle or group of muscles to exert a maximum force against a resistance. Muscular endurance= the ability of a muscle or muscle group to exert force over a period of time against sub-maximum resistance.)

(PE. 2.4.1) Students will identify components associated with health-related fitness (strength, flexibility, body composition) and participate in activities to improve fitness.

**Third Grade:**

**Components of muscle related fitness**
The learner will be able to achieve a reasonable level of health related fitness (identifies the effects of physical activity involving flexibility, muscle strength, muscular endurance, on the human body)

**Muscular Strength**
The learner will be able to increase muscular strength by extending personal strength through activities such as push-ups, pull-ups, jumping jacks, pushups, one minute bent sit-up, 40 yard dash, pull-up/flex arm hand, shuttle run, and standing long-jump and/or exercises involving large muscle groups.

**Muscular Endurance**
The learner will be able to increase muscular endurance by Reaching the healthy fitness zone on the fitness gram test, participating in activities such as monkey bars, climbing ropes, boxes and fitness circuits

**Flexibility**
The learner will be able to increase flexibility by stretching specific muscle groups in the shoulders, back, quads, claves, hamstrings, and Achilles tendon, and participating in individual tumbling activities and partner stunts, such as partner stand-up

The healthy fitness zone on the sit and reach component of the fitness gram test.

**Progression**
The learner will be able to define progression.

The learner will demonstrate progression of skill development using manipulatives such as footballs baseballs basketballs soccer balls.

The learner will show a progression of all basic locomotor movements. They will become more skilled at dribbling basketball, soccer balls, etc.

**UNRELATED TO CONCEPT:**(PE. 3.4.1) Students will meet the gender and age appropriate health related fitness standards defined in a selected program( P.P.F.T., FITNESSGRAM).

(PE. 3.4.2) Students will distinguish between physical activities that are moderate to vigorous in intensity. Students will begin to learn about the principles of overload and progression while participating in body weight resistant physical activities. Students will demonstrate competence in the importance of progressing safely in all physical activities.

**Fourth Grade:**

**Specificity** is an exercise that influences only the muscle groups actually involved.

**Overload** the muscle group must be worked above its normal operating level in order to obtain a training effect (increased strength or endurance).

**Progression** best results are achieved by making gradual increases in frequency, intensity, type, and time (FITT principle).

**Frequency:** do the activity more times per week or per day. (3-5 days a week)

**Intensity:** do the activity faster with moderate to vigorous resistance

**Type:** the kind of activity being done. Ex. Running, skill enhancing etc.

**Time:** do the activity longer or more repetitions or sets. (30-60min., 3sets of 8)

By the time children reach the fourth grade they should be actively participating in activities that increase muscle strength, muscle endurance, and flexibility.
Fourth grade students will:
Be able to list and define the five components of health.
Identify the components of the F.I.T.T. principle.
Meet the gender and age-appropriate health-related fitness standards.
Perform basic flexibility activities, muscular strength, and muscle endurance activities.
Define specificity, overload, and progression.
(PE. 4.3.1) Students will identify moderate and vigorous physical activities that can be done outside of the school environment.

**UNRELATED TO CONCEPT:** (PE. 4.3.2) Students will demonstrate participation in at least one physical activity (moderate or vigorous) outside the school environment.

**UNRELATED TO CONCEPT:** (PE. 4.4.1) Students will meet the gender and age appropriate health related fitness standards defined in a selected program (P.P.F.T., FITNESSGRAM)
(PE. 4.4.2) Students will list and define each of the health related fitness components: cardiovascular fitness, **muscular strength, muscular endurance**, body composition, and flexibility.

**Fifth Grade**
- Students will participate in warm up/cool down activities before and after vigorous activities
- Students will be able to define the FITT principle
- Students will know and understand why they perform activities for flexibility, muscular strength, and muscle endurance activities
- Students will begin to understand the relationship between and competency in relation to specificity, overload, and progression.
(PE 5.3.2.) Students will describe healthful benefits resulting from regular participation in physical activity.

**UNRELATED TO CONCEPT:** (PE. 5.4.1) Students will meet the gender and age appropriate health-related fitness standards in a selected program (P.P.F.T., FITNESSGRAM)
(PE. 5.4.2) Students will demonstrate knowledge of the five fitness components: cardiovascular fitness, **muscular strength, muscular endurance**, body composition, and flexibility.

**Sixth grade**
- Students demonstrate and understand the necessity of the warm-up cool down. (stretching prevents injury, cools body, and lowers heart rate.)
- Students will be able to explain the term overload training. (exerting energy that the body and muscles aren't used to.)
- Students will know the terms muscular strength and endurance.(MS-1rep max, max weight. ME-several reps. w/lighter weight.)
- Students will be able to explain and demonstrate the importance of flexibility (prevents injury, creates better range of motion.)
(PE. 6.3.3) Students will exercise at home to improve performance and fitness. Students will apply their knowledge of overload and progression when body weight training, partner resisted training, and resistance band training.

**UNRELATED TO CONCEPT:** (PE. 6.4.1) Students will meet the gender and age-appropriate health related fitness standards defined in a selected program (P.P.F.T., FITNESSGRAM).
(PE. 6.4.2.) Students will define the five components of fitness.

**FIT Principles for Muscular Strength and Endurance**

**Kindergarten** – have students begin to understand that the more they do an activity the better it is for them. The amount of activity that you do is directly related to the outcomes you will receive. Lower activity equals lesser outcomes greater activity equals greater outcomes. In accordance with PE.K.3.1, encourage students to participate and practice outside of class. There is such a thing as over exercising where too much exercise will cause negative benefits. It is important to be flexible to avoid injuries. Students will participate in activities that measure and improve fitness as per PE.K.4.2. Students will be able to identify physiological signs of physical activity such as fatigue, soreness, etc. as per PE.K.4.1.
First – have students realize the signs of intensity; sore muscles, tightness, fatigue as per PE.1.4.1. Students will increase frequency of out of class participation as per PE.1.3.1. Students will participate in activities that will measure and improve different types of fitness as per PE.1.4.2.

Second – have students begin to understand the concept of time. The more a student does physical activity the greater the benefits will be. If students are active on a regular basis their benefits will be better as per PE.2.3.1. Students will be able to identify health-related fitness components and participate in activities to improve fitness levels in these areas as per PE.2.4.1.

Third – students will begin to understand the type of activity. They will be able to identify various activities that will help increase muscular strength/endurance. Examples would be: push-ups, sit-ups, pull-ups, and flexed arm hang. This was covered by previous standards. Students are still encouraged to increase frequency of outside of class participation as per PE.3.3.1.

Students will be able to identify benefits of activities as per PE.3.4.5. For example, push-ups build arm strength. Students will be able to distinguish between activities that are moderate to vigorous in intensity as per PE.3.4.2.

Fourth – students will further their understanding of frequency and intensity. They will understand that to see benefits for muscle strength and endurance training must take place at least two times a week to achieve a moderate level of muscular fitness as per PE.4.4.5. Students will be able to distinguish between muscular strength and muscular endurance as per PE.4.4.2.

Students will be able to match fitness assessment items to the appropriate fitness component as per PE.4.4.3. Students will also be able to identify the components of the F.I.T.T. principles as per PE.4.4.5.

Fifth – students will further their understanding of time and type as per PE.5.4.3. Students will be able to distinguish between muscular strength and endurance. Strength is the ability to lift a maximal force one time. Endurance is the ability to do repetitions over a period of time with a sub-maximal resistance as per PE.5.4.2. Students will begin to learn about the body’s recovery time. During time of resting students can focus on stretching and flexibility to loosen up their muscles. Students will understand that your muscles need time to heal after working out.

Students need to understand that stretched and torn muscles must have time to heal before putting them through more strain again. [Intensity to activity is proportional to time required; walking for 60 minutes would not be the same as running for 60 minutes. As intensity increases time will decrease.] UNRELATED TO CONCEPT: MORE CARDIOVASCULAR THAN MUSCULAR FITNESS; NOT THE BEST EXAMPLE. This is mostly all under PE.5.4.3, which states that the student will be able to define the components of the F.I.T.T. principles.

Sixth – students will understand all components of FITT. Frequency - exercise at least two times a week. Intensity – the harder your body works and the longer your body works the greater the benefits will be to a certain extent. Students will know the amount of time the body takes to recover from a workout. Students will be able to identify the types of exercises that they can do to increase endurance and muscular strength. Students will also know the benefits of flexibility during training. Also make students aware of the dangers of weight lifting before the age of 17 and a KEY is always to focus on form. This is covered in the previous year. The student will use the FITT principles to maintain an activity log of participation in activity outside of class as per PE.6.3.1 and PE.6.3.3. The student will be able to relate fitness benefits of activities to specific fitness components as per PE.6.4.3.

Training methods; body weight, partner resistance, resistance bands

Kindergarten
1. Students will do modified sit-ups, leg raises, and recliner activities in a game of freeze tag when they are frozen.
2. Students will do a sit up activity in which every time they come up they are reinforced with a star sticker. DEV INAPPROPRIATE:3. Students will be able to use a resistance band in a simulated butterfly exercise.
1st Grade
1. Students should understand that a warm-up should precede exercise. We think this is important because the concept of warming up and cooling down can be explained in a way that first grade students can understand, without going into great detail.
2. Students will do crunches, leg raises with alternate feet, and modified push ups in a game of freeze tag when they are frozen.
3. Students will partner up and toss a foam ball to their partner when they come up for a sit up.
4. By doing push-ups and sit and reach have the students identify and understand muscle groups used and how strength is gained. More specific on individual muscles used in bar hangs. We like this because the goal is focused on the muscles as well as their movements, while keeping it age appropriate

2nd Grade
1. Students will do regular push ups if they are able or modified push ups if they are having trouble when they are frozen in a game of freeze tag. Line hops and crunches will also be implemented as activities to do when frozen.
2. Have the students identify one upper body muscle and one lower body muscle after playing hula hoopla in which they participate in activities like the crab walk, bear crawl, and locomotor skills to move from hoop to hoop.
3. Students will do jump up pull ups, flexed arm hang, and chin ups to develop different techniques on bar exercises. Form should be emphasized as well as safety.

NOT MUSCULAR CONCEPT: 4. Expand on the reasoning and different types of warm-up and cooling down activities. Make correlation between exercise, how the student feels and their heart rate

3rd Grade
1. Use the activities of sit ups, push-ups, and flexed arm hang to develop a monthly five-minute routine and log how many repetitions of each in a personalized notebook.
2. The students will use four strength-training exercises and be able to have close to perfect form in each. The exercises they will use are walking lunges, partner resistant training with arms, line jumps, and box jumps.
3. Students will be able to identify appropriate games that can be used as a warm up or a cool down.

4th Grade
1. The students will increase the number or repetitions of sit-ups, pull-ups, push-ups, and flexed arm hang over a five-minute station workout. We think this is appropriate because it gives the students a variety of exercises to do while accomplishing muscular strength goals.
2. The students will use partner resistance training to develop hamstring strength by having one partner lie flat on their stomach with legs in a curling fashion and the other resisting a leg curl.
3. The students will spend three to five minutes of continuous training using 4 upper and lower body strength stations with little time in between for rests. The idea is high repetitions and low weight. The four stations will be kangaroo jumps, light medicine ball passing in between sit ups.

5th Grade
1. Students will be able to list strength techniques to help increase their repetitions and intensity over time. Examples of this are breathing, correct form, spotting correctly, and stretching before and after lifting. Students should include warming up and cooling down as part of the techniques
2. Match partners that are same height and weight and use partner-resisted triceps extensions with one partner holding a towel behind their head and the other resisting the
pull of the towel toward the ceiling. Helps build muscular strength in push-ups, weight lifting, and flex arm hang.

6th Grade
1. Students should be well versed and able to come up with their own types of warm-up and cool down activities, and explain why they are important
   1. Students will use bodyweight activities in class. Examples of these activities are shoulder dips off the bleachers, sit-ups, and modified push-ups.
   2. Students will use understand the benefits of muscular strength such as less injuries in sports, protection, and enhancement of loco motor and non-locomotor movements.
   3. Students will be involved in a moderate to vigorous circuit training environment stressing low weight and high repetitions with little rest time. They will keep an exercise log with the name of the activity and number of repetitions they completed for the allotted time.
   4. The students should be able to create their own appropriate stations for circuit training
The muscular activity should be part of the 30-60 minutes of developmentally appropriate physical activity for elementary students.

Spotting and Safety

Kindergarten
-The students will learn what personal spatial awareness is and why it is safer to keep space from others in certain exercises that involve moving. Let them know that exercising can be dangerous if not done properly and they should always have supervision. Students will learn that exercising is important.

First Grade
-The students will learn to exercise as a group and learn what the benefits are from exercising. The students will recognize spatial awareness with objects as well as personally when playing in games and specific exercises. (Swinging arms, bats, and throwing objects…) Students need to know that safety always comes first when exercising.

Second Grade
Students will understand and safely demonstrate the proper way to stretch on their own and with others, placing an emphasis upon the concept of spatial awareness with the goal of safety in mind.

Third Grade
The students will first learn the concepts and benefits of spotting, placing an emphasis upon the major responsibilities the spotter carries in regards to the performers safety.
-Identify potential risk factors of unsafe exercise; working out without a spot, not following the rules while participating in physical education, and not following the principles of F.I.T.T. For example, the responsibilities of the spotter include helping the performer select an intensity level at which to work, in regards to their previous performances.
- Next, students will be given a demonstration on how to correctly and safely spot a partner in a particular exercise. GIVEN THE TYPES OF “EXERCISES” 3rd Graders Do Developmentally, Is Spotting An Issue?

Fourth Grade
-The students will be able to assist a partner in at least two-partner exercises in a safe and effective way (i.e. partner leg curl, partner lateral raises etc.)
-Students should be able to clean and put equipment away to provide a safe learning environment at all time.
-All students should be able to perform warm ups and cool downs on their own (using a partner is helpful at times). Make sure proper technique is used to insure pulls and tears in the muscles are reduced in chance through good stretching.
-Students will know proper techniques for spotting and when to apply help when needed.
Students will identify potential risk factors of unsafe exercise; working out without a partner spotting you, not following any posted rules, not following the principles of F.I.T.T., and not warming up and cooling down every time working out.

- Students will know proper techniques on how to lift and know what not to do.
- Not lifting more than the student is capable of, max established and then use only a certain percentage of that to establish everyday lifting.

**Fifth Grade**

- The students will be able to assist a partner in at least five partner exercises using the right form, and the proper resistance for the individual.
- The students must learn fitness etiquette understanding and respecting physical differences across individuals and gender. The students must respect the fitness of others and return all equipment use to its proper place when they are done. They also must respect the injury risks and follow every precaution to avoid accidents.
- The students will be expected to have the knowledge to spot several different fitness activities, but proficient in as many as they can. They should have complete understanding in spotting partner and body weight activities.
- Understand one’s own strength in consideration with weight or type of resistance being used. Also respect a partner’s strength and adjust that to the intensity they want to work at with regard to the F.I.T.T. principles.

**Sixth Grade**

- The students should have the knowledge and ability to spot and assist their peers in any resistance lift or partner exercise performed in class.
- The students will understand how F.I.T.T. training, done properly, will increase their awareness of safety and exercise guidelines. For example if the students understand the F.I.T.T. principles or overload and progression this will greatly help not only them in staying safe but also help their spotter and the other students around them.
- The students will be able to assist a peer in lifting, and be able to make the necessary modifications in their lifting style to make it safer and more beneficial to the lifter. Students should know proper techniques and speeds of lifting therefore making it safer to practice weight training. By understanding proper technique of lifting students can practice safer weight training and spotters know how and when they need to apply their help.