Grade 4

Content Alignment Matrix

Grade 4	L1	L2	L3	L4	L5
Questions	• What are muscles? • What is muscular endurance? • How do muscles move body parts?	• How long can your muscles work without tiring?	• How do you increase muscular endurance?	• Do some muscles work harder than others in some activities?	• How do I find the right intensity or resistance to build muscular strength?
Objectives	• Students will review/ learn muscle pairs (triceps, biceps; quadriceps, hamstrings) and muscle function to compare muscular strength and muscular endurance.	• Students will review muscle groups to learn that muscular endurance is the ability to contract muscles many times without tiring.	• Students will learn to increase muscular endurance using the scientific Principle of Progression.	• Students will learn to identify the primary muscle in specific activities. • Students will learn that primary muscles can become tired in specific activities because they are required to do more work than other muscles. • Students will learn that the primary muscles require endurance.	• Students will learn to select resistance equipment to gradually build muscular strength.
Rubric	**O:** The students could list each muscle and its partner, and effectively compare criteria for muscular strength and endurance. **S:** The students could list each muscle and its partner but were unable to compare criteria for muscular strength and endurance. **U:** The students were unable to identify muscle partners and could not compare criteria for muscular strength and endurance.	**O:** The students could name the muscles/muscle groups and define the term muscular endur-ance. **S:** The students could name the muscles/muscle groups, but could not define the term muscular endurance. **U:** The students could not name the muscles/ muscle groups or define the term muscular endurance.	**O:** The students could explain the component of muscular endurance as it relates to the Principle of Progression. **S:** The students could explain the component of muscular endurance, but could not relate it to the Principle of Progression. **U:** The students could not explain the component of muscular endurance nor relate it to the Principle of Progression.	**O:** The students could name the primary muscle groups used in specific activities and could explain that continued use of the muscles requires muscular endurance. **S:** The students could name the primary muscle groups used in specific activities, but could not explain that continued use of the muscles requires muscular endurance. **U:** The students could not name the primary muscle groups used in specific activities or explain that continued use of the muscles requires muscular endurance.	**O:** The students selected the proper resistance equipment to build muscular strength and understood the relationship of resistance to the development of strength. **S:** The students selected the proper resistance equipment to build muscular strength but could not explain the relationship of resistance to the development of strength. **U:** The students were unable to select the proper resistance equipment to build muscular strength and could not explain the relationship of resistance to the development of strength.
Concepts	Muscular Endurance Muscle Groups	Muscular Endurance Abdominals Deltoid/Trapezius/ Pectoralis Gluteus Maximus	Principle of Progression Muscular Endurance Deltoid/Trapezius/ Pectoralis	Principle of Progression Gastrocnemius	Muscular Strength Toners Repetitions
Test Items					

Content Alignment Matrix (cont.)

Grade 4	L6	L7	L8	L9	L10
Questions	• How can I group exercise repetitions within sets? • How does the Principle of Specificity help me match muscles to corresponding exercises?	• Why use a toner band? • How can I develop muscular endurance without a toner band?	• How can I use the Principles of Progression and Overload to increase my muscular endurance?	• How can I apply the Principles of Progression and Overload to increase my muscular endurance?	• Which activities should I select to exercise a specific muscle or muscle group? • How can I perform these exercises to increase muscular endurance?
Objectives	• Students will learn to use the Principle of Specificity within the concept of exercise sets to match the muscles to their corresponding exercise.	• Students will learn to compare two types of activities (ie., toner and skill based) to determine which is more effective for increasing muscular endurance.	• Students will learn to use the Principles of Progression and Overload to adjust exercise repetitions to increase muscular endurance.	• Students will learn to apply the Principles of Progression and Overload to adjust exercise sets to increase muscular endurance.	• Students will learn to design activities to exercise a specific muscle or muscular group. • Students will learn to adjust the number of repetitions and sets to increase muscular endurance.
Rubric	**O:** The students were able to match each muscle to its corresponding toner exercise and were able to explain the relationship between exercise repetitions and sets. **S:** The students were able to match each muscle to its corresponding toner exercise, but were unable to explain the relationship between exercise repetitions and sets. **U:** The students were unable to match each muscle to its corresponding toner exercise or to explain the relationship between exercise repetitions and sets.	**O:** The students were able to determine the difference between skill-based and toner-based exercises and to explain that toner exercises are more effective for increasing muscular strength. **S:** The students were able to determine the difference between skill-based and toner-based exercises, but were unable to explain that toner exercises are more effective for increasing muscular strength. **U:** The students were unable to determine the difference between skill-based and toner-based exercises or to explain that toner exercises are more effective for increasing muscular strength.	**O:** The students were able to increase repetitions and differentiate between muscular strength and muscular endurance exercises. **S:** The students were able to increase repetitions, but were unable to differentiate between muscular strength and muscular endurance exercises. **U:** The students were unable to increase repetitions or to differentiate between muscular strength and muscular endurance exercises.	**O:** The students were able to apply the Principles of Progression and Overload by adjusting the number of exercise sets to increase muscular endurance. **S:** The students were able to apply the Principles of Progression and Overload but could not adjust the number of exercise sets to increase muscular endurance. **U:** The students were unable to apply the Principles of Progression and Overload and could not adjust the number of exercise sets to increase muscular endurance.	**O:** The students were able to adjust self designed activities by increasing repetitions and/or sets. **S:** The students were able to design activities, but could not adjust them by increasing repetitions and/or sets. **U:** The students were unable to design activities nor adjust them by increasing repetitions and/or sets.
Concepts	Muscular Endurance Repetitions/Sets Principle of Specificity	Muscular Endurance Types of Exercise/ Activities	Muscular Endurance Principle of Overload Principle of Progression	Concentric Contraction Muscle Endurance Principle of Progression Principle of Overload	Muscular Endurance Fitness Circuit
Test Items					

Grade 4 - Lesson 7

KEY QUESTIONS:

- Why use a ***toner band***?
- How can I develop ***muscular endurance*** without a ***toner band***?

INSTRUCTIONAL OBJECTIVE AND RUBRIC:

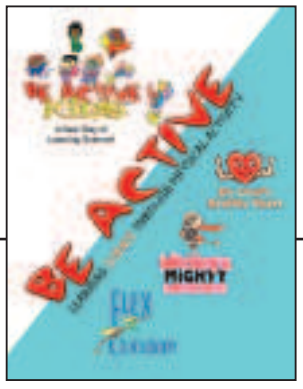
- Students will learn to compare two types of activities (i.e., ***toner*** and skill-based) to determine which is more effective for increasing ***muscular endurance***.

Target – Outstanding	Acceptable - Satisfactory	Unacceptable – Unsatisfactory/ Needs Work
The students were able to determine the difference between skill-based and toner-based exercises and to explain that toner exercises are more effective for increasing muscular strength.	The students were able to determine the difference between skill-based and toner-based exercises, but were unable to explain that toner exercises are more effective for increasing muscular strength.	The students were unable to determine the difference between skill-based and toner-based exercises or unable to explain that toner exercises are more effective for increasing muscular strength.

EQUIPMENT NEEDED:

<u>Large Space</u> (Lesson requires a large indoor or outdoor space)

- Toner bands (variety of colors)
- 16 balls to throw, kick, and dribble
- 4 cones for stations
- Station cards
- Carpet squares or mats



Vocabulary:	Explanation:
CONDUCT	Carry out a scientific inquiry or experiment
F.I.T.T. PRINCIPLE	Criteria used to determine the correct amount of exercise: **Frequency:** How often you should exercise **Intensity:** The amount of effort or energy required to perform an activity **Time:** The length of time spent each time you exercise **Type:** The kind of physical activity you are performing
MUSCULAR ENDURANCE	Ability to contract or shorten muscles many times without tiring or to hold a contraction for a long time

Safety: Demonstrate the safe and proper way to use the toners. Explain how to use the visual charts as a reminder of the proper procedure if you forget. Do not permit students to mishandle the toners.

TONER INSTRUCTIONS

1. Perform each exercise as illustrated/pictured.
2. Perform the extension on a slow count of one, two and return on count three and four.
3. As the count of four is reached, the toner should still have some tension. The toner should never go completely slack.
4. Select the toner color that will allow a minimum of 10 repetitions to be completed.
5. Once capable of completing 20 repetitions, a thicker toner should be used.
6. When using the toner under the foot, make sure to center the pad in the middle of the shoe, not under the toe.
7. Maintain good posture and focus forward.
8. Use a slow, steady cadence, rather than jerking the toner into positions.

ENGAGEMENT (5 minutes):

Instant Activity

Locomotor Laps

Teacher's Directions: Students are in a huddle after Instant Activity.

- Zip, Zap, Zing! You are junior ***scientists.***
- Today we are going to ***conduct*** an ***experiment*** to decide which type of activities are most effective or do the best job of increasing ***muscular endurance***.
- As you look around you see four stations.
- Each station has TWO types of activities.
- One type at each station uses the ***toner*** activities that we learned will increase ***muscular endurance***.
- The second type is a skill activity that also works that same ***muscle group***.
- The problem you need to solve today, junior scientists, is "Which type of activity (the toner or the skill) does a better job of increasing ***muscular endurance***."
- I know you really want to find out the answer to this question.
- Let's ***explore*** and find out.

EXPLORATION (15 minutes.):

Experiment:

Skill Activities vs. Toner Exercises (not in Activity Directory; see below)

- At each station, you will have the opportunity to compare a Skill Activity against a ***Toner Exercise*** to decide which is better if you want to increase ***muscular endurance***.
- I will show each of the ***Toner Exercises***. You have done two of them in previous lessons, so only two are new.

Teacher's Directions: Demonstrate the Single Arm Curl, the Arm Extension, and the new exercises, the Supine Chest Press and the Reclining Leg Press.

- Now, let's watch a demonstration of the four skill activities. (Have student demonstrate, if possible.)
- You and a partner will alternate performing either the skill or the ***toner exercise***.
- You will perform the skill activity or the ***toner activity*** for nine ***reps***.
- After the nine ***repetitions***, rest for 20 seconds and perform another nine ***repetitions***.
- Then you and your partner will switch activities.
- Both will then do two ***sets*** of nine ***repetitions***.
- Move to the next station after you and your partner have both used the ***toner*** and the skill equipment.

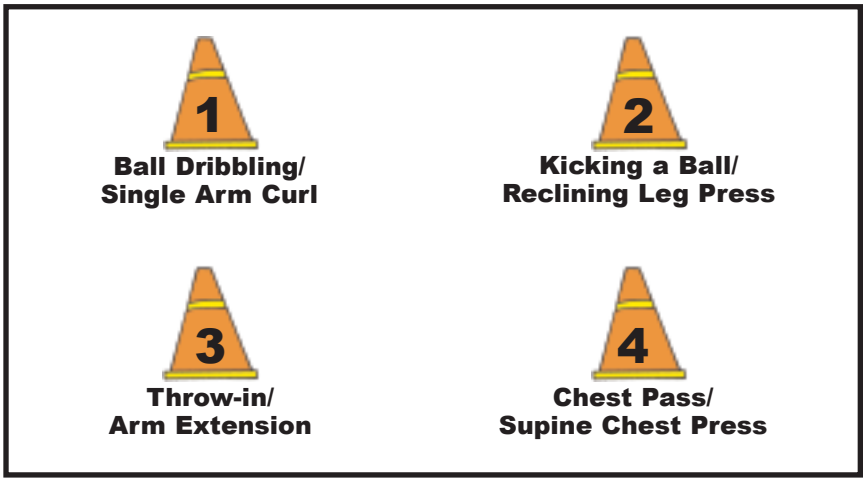
Station	Skill Activity	Toner Activity	Sets
1	Ball dribbling with hand (stationary)	Single Arm Curl	9, 9
2	Kick to a wall or fence	Reclining Leg Press	9, 9
3	Two hand soccer throw-in to a wall or fence	Arm Extension	9, 9
4	Chest pass to wall or fence	Supine Chest Press	9, 9

Toner Exercises

Toner Exercise	Muscles Used	Directions
 **Single Arm Curl**	Biceps	• Begin in a standing position, feet apart. • Loop the band under one foot. • With your palm facing up, and your arm extended by your side, pull up the toner handle to your shoulder, keeping your elbow at your side. (Count 1 and 2) • Slowly return to the starting position. (Count 3 and 4) • Repeat 10 times using proper cadence. • Using other arm foot, repeat 10 times.
 **Reclining Leg Press**	Quadriceps	• Begin by lying on the floor on the back. • Bend one knee and loop the pad of the toner securely under the arch of the other foot. • Pull in the stomach and keep the lower back on the floor. • Straighten the leg with the toner toward the ceiling on counts 1 and 2. • On counts 3 and 4, slowly lower the leg back to bent position. • Complete a set and then repeat with the other leg.
 **Arm Extensions**	Triceps	• Right hand grasps toner handle with palm up and the back of the right hand resting on the shoulder. The toner is behind the back. • Place the left hand behind the back and grasp the other handle. • On counts 1and 2 extend the right arm overhead. • On counts 3 and 4 lower the right hand slowly to the shoulder. Repeat for nine reps and then switch to the other hand.
 **Supine Chest Press**	Biceps Triceps Pectoralis	• Wrap toner around back at chest level, holding handles in each hand. • Begin lying on back in a supine position, knees bent, feet on floor. • Extend arms to a straight position with wrist aligned with lower arm. • Slowly return to starting position.

- On my signal, you will select a partner and sit at one of the stations.
- Be Active!
- Open your ***Journals*** to Lesson 7.
- Ready,
- Be Active!

Teacher's Directions: Follow the station directions and rotate approximately every two minutes.



EXPLANATION (5 minutes):

Teacher's Directions: Students come to a scattered huddle.

- Today we compared two types of activities, a ***toner*** and a skill activity, to determine which was better for increasing ***muscular endurance***.
- You ***exercised*** each ***muscle group*** using two different types of activities; one was a ***toner*** **activity** and the other a skill activity.
- One created more ***resistance***, made you work for a longer time, and caused ***physiological changes***.
- We know that if your ***muscles*** are ***exercising*** longer and helping ***muscular endurance***, they are going to demonstrate ***physiological changes*** (such as tired, shaky, hot).
- Which ***exercises*** made your ***muscles*** work for a long time and helped ***endurance***?
- Let's talk about each station; look in your ***Journal*** at your records of each activity.

Teacher's Directions: Compare each station.

- We can ***conclude*** that ***toners*** make your ***muscles*** tired and work harder and create ***physiological changes*** in your ***muscles*** that help ***muscular endurance***.

EVALUATION (3 minutes):

- Open your *Be Active Kids Journal* to Lesson 7 and complete the entry.

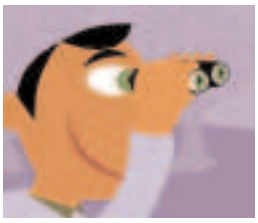
ELABORATION & CLOSURE (2 minutes):

Teacher Tip: Right here you could really impress upon your students how important it is to not always take the easy road, but to think, instead, about the importance of health, and making healthy choices. Use some examples to paint a vivid picture for them of the consequences of these choices. (e.g., playing video games or doing your homework, etc.)

- Can both types of activities, skill and toners, help your ***muscular endurance***?
- How long would it take you to get the muscles tired when doing a skill activity?
- Will doing the skill activity for a long time lead to the ***physiological changes*** that you get with a toner?
- If you need to work on your ***muscular endurance***, the toners will get the job done more quickly.
- If you perform the skill activities until your ***muscles*** are tired, they too can help your ***muscular endurance***.

HOMEWORK:

Make a list of activities or chores at home that are similar to the toner activities we did today. If you were using a broom to sweep the floor, what ***muscles*** would you be using? At home, try sweeping the kitchen floor and name the ***muscles*** you are using.



WHAT'S NEXT?:

In the next lesson, we will work on ***toner*** activities, and learn about more ***muscular endurance***.