



3rd grade – PE/Math/Technology

Standard (subject, number, text):

PE-FITNESS CONCEPTS.3.1

Demonstrate warm-up and cool-down exercises.

PE-AEROBIC CAPACITY.3.3/3.4

Participate three to four days each week, for increasing periods of time, in continuous moderate to vigorous physical activities that require sustained movement of the large muscle groups to increase breathing and heart rate.

PE-MUSCULAR STRENGTH/ENDURANCE.3.4

Perform increasing numbers of each: *forward lunges, side lunges.*

PE-ASSESSMENT.3.8

Measure and record improvement in individual fitness activities.

PE-SELF-RESPONSIBILITY.5.1-5.3

List the benefits of following and the risks of not following safety procedures and rules associated with physical activity.

PE-SOCIAL INTERACTION.5.4-5.6

Use appropriate cues for movement and positive words of encouragement while coaching others in physical activities.

Demonstrate respect for individual differences in physical abilities.

PE-GROUP DYNAMICS.5.1-5.3

Work in pairs or small groups to achieve an agreed-upon goal.

CCSS.MATH.CONTENT.3.NBT.A.2

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

CCSS.MATH.CONTENT.3.OA.A.1

Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.

CCSS.MATH.CONTENT.3.MD.A.1

Tell and write time to the nearest minute and measure time intervals in minutes.

CCSS.MATH.CONTENT.3.MD.B.3

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

Objective(s):

Students will visit the trail to participate in various physical activities related to third grade PE standards including lunges, sprinting, and various endurance activities.

Students will work in groups/pairs to track the heartbeat of their partners after each



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exercise on the trail. Students will use Google Spreadsheets to enter data and create bar graphs.

6Cs:

- **Communication** - Students will use appropriate cues for movement and positive words of encouragement for their partners.
- **Critical Thinking** - Students will use critical thinking when deciding how to display their mathematical findings and when calculating and converting data, and when evaluating which activity will benefit the body more.
- **Collaboration** - Students will work in pairs or small groups to achieve an agreed-upon goal.
- **Creativity** - Students will use their creativity to draw their data using bar graphs, charts, plots or line graphs.
- **Character** - Students will demonstrate respect for individual differences in physical abilities.
- **Global Citizenship** - Students will participate in the Vine Trail using the features of AgRespect which encourage participants to “Respect the farmers. Protect our heritage and future. Love the land!”

Materials:

- 1 cardboard tube from a paper towel roll per every 2 students
- 1 stopwatch per every four students.
- Teacher made worksheets/graph paper.
- Journal or notebook for each student.
- Pencil for each student.
- See also the [Vine Trail Teacher Info Sheet](#) for more recommendations of what to bring.

Prerequisite Knowledge (Vocabulary, part of trail, technology, etc):.

- Heart rate
- Heart health
- Lunges
- Stethoscope
- How to use a stop watch
- How to record data



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- Prelesson on using Google Spreadsheets to create bar graphs

Lesson Summary (5-7 sentences): (list time of year if necessary)

- On the trail, students will walk the section in groups of 4 students (or split teams in 2).
- Assign students roles in the group that will rotate so that each person performs each task for each exercise: Timer (who have a stopwatch to record the time), Counter (to count the number of exercises or steps performed by the performer in the set time), Recorder (who will use the paper towel roll to count heartbeat and record the data), and Performer (who will perform the given exercise).
- The teacher will instruct students to perform specific activities for a predetermined amount of time on a specific stretch of the trail.
- Students will perform the task after various physical activities. Ideas include:
 - Resting heart rate
 - Using 6-Minute Walk Test 6 - At “go” the student walks as fast as possible (without running) for 6 minutes.
 - Run in place (or up and down a stretch of the trail) for one minute, then listen again.
 - Perform forward lunges for 30-60 seconds depending upon appropriateness. (* Teachers be sure to demonstrate proper form!)
 - Perform side lunges for 30-60 seconds depending upon appropriateness. (* Teachers be sure to demonstrate proper form!)
- After the activity, the recorder will listen for their partner’s heartbeat by placing the tube over the partner’s heart.
- Count the number of beats per 30 seconds. Add this number together twice to find out how many times the person’s heart beats after the activity, per minute.
- Follow-Up Discussion: The heart beats faster after exercise in order to pump more blood (oxygen) to the working muscles.
- Students will then take their group data and use Google Spreadsheets to create a bar graph for each activity demonstrating the various heart beats. See [sample bar chart](#) for examples and instructions.
- Back at the classroom, all of the data can be aggregated onto chart paper or in Google Sheets in various categories (by activity, by group members, by gender, by age of students, time spent on activity, etc.) for further discussion about patterns they may notice.



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- **Extension:** Students can do additional research on the benefits of cardiovascular and muscle strength activities on the heart. Students can then write a one paragraph persuasive essay indicating which activity they felt was the best for the heart based upon the classroom data using their research to support their claims.

Map of Trail (state if zone specific): All zones.

Additional Resources: As adapted from “[Walk Across Texas](#)” lesson plan, courtesy The Franklin Institute Online (<http://www.fi.edu/>) from “The Heart: An Online Exploration” Enrichment Activities.