

Math Ball

Item #11319

What Are the Educational Applications?

Using the Math Ball in your physical education lessons is a great way to connect your students' experience to the classroom. The following guide offers starting blocks for fun and exciting lessons that bring math skills into the gym.

How Can I Use This Equipment With My Students?

Developmentally appropriate applications for the Math Ball are endless. However, in order to give a starting point for developing lessons, this guide will focus on two types of activities for upper elementary classes: cooperative relays and station activities. All of the station activities can be modified for small-group cooperative settings.

Cooperative Relays

Organize students into equal teams of 4 to 6. Line them up in relay race formation (Figure 1).

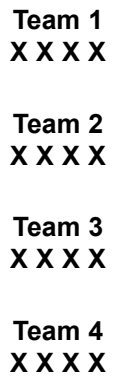


Figure 1 - Relay Race Formation

Math Relays (With one Math Ball)

Before each round of racing begins, the instructor will specify a fitness activity for the race, such as jumping jacks or push-ups. The Math Ball will then be rolled in front of the class to assign a number of repetitions to the set activity.

Exercises that are going to be used as part of this activity should be taught and practiced during the warm-up portion of the lesson.

The race will begin on the instructor's cue. The students will run to a cone across from their starting line and complete the correct number of repetitions. After completing the specified exercise, the student will run back to the group and the next student will begin.

In round two of the race, the Math Ball will be rolled twice and the numbers will be totaled for the number of repetitions in that round. For round three, the Math Ball will be rolled three times with this pattern continuing for additional rounds.

There are different ways you can use the plus and minus signs within this activity. One way is to just ignore the symbols and if they are rolled, the instructor simply rolls again. Another is to roll the Math Ball again either adding or subtracting the next number rolled to the total number of repetitions for that round.

Math Relays (With multiple Math Balls)

If you have enough Math Balls for each relay team, you can modify the activity in this way. Again, organize the class into equal teams. Place a Math Ball across from each team next to a cone (Figure 2). Announce the set fitness activity for the round and give the cue to start (Figure 2).

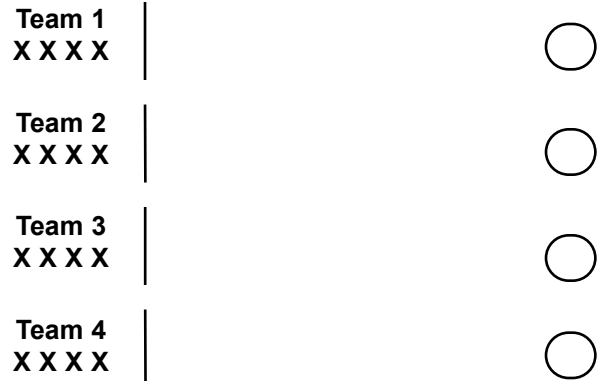


Figure 2 - Math Ball Placement

The students must run to the Math Ball assigned to their team, pick it up, roll it, and complete the activity according to what is rolled. Again, increase the number of rolls to correspond with the round number. The plus and minus signs can be used in the same ways as before.

Race for the Right Answer (With multiple Math Balls)

With the class organized in the same manner, place a large writing tablet or piece of newsprint on the wall in a space that is lined up with each team (Figure 3).



Figure 3 - Tablet Placement

On the instructor's cue, students will run to roll the Math Ball and record the number on their team's tablet. After the first student has gone, each student will be responsible for adding the numbers that have been rolled to that point. For example, if the first student rolls a 5 and the second student rolls a 3, the second student must record 8 as the sum of the two numbers. The following student might roll a 4. She will then add 8 to her 4 for a total of 12. The next student will then continue with adding to the sum of 12 (Figure 4).

$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \\ \\ 8 \\ +4 \\ \hline 12 \\ \\ 12 \\ +5 \\ \hline 17 \end{array}$$

Figure 4 - Sample Race

Again, you can choose to ignore the plus and minus signs or you could incorporate negative numbers into the addition problem.

A modification of this activity is to have each of the students simply write their numbers on the tablet with the final student in each group totaling the numbers rolled. Or, the entire class could total every tablet at the end of each round.

Station Activities

The Math Ball is a perfect way to add math into station practice drills. Each of the activities that follows allows groups of two to five students an opportunity to have fun and be successful.

Sport-Specific Skill Practice

During a variety of sport-specific drills, students can roll the Math Ball in order to obtain a target number for their practice.

For example, when practicing push passing within a soccer unit, students can roll the Math Ball prior to starting their drill. The number rolled then becomes the group's goal for successfully completed passes.

Let's say that the group rolls a five. They must then pass the soccer ball within their group five times without making an error. As the students improve their skill level, the number of rolls increases. In other words, if a group can easily complete 6 passes in a row they should then roll the Math Ball two or three times to obtain their target number.

Fitness Activities

Like the fitness relay activities, fitness activities within a format can give students the number of repetitions to be completed. Again, proper techniques should be taught prior to the students' attempts.

An additional way to use the Math Ball for fitness activity stations, is to assign a number and symbol to an activity. Below is an example of appropriate assignments.

- 1 = Jumping Jacks
- 2 = Sit-ups
- 3 = Push-ups
- 4 = Squats
- 5 = Pull-ups
- 6 = Leg Lifts
- + = Jump Rope
- = Dips

A sign posted at the station area should clearly identify the activity assignments. Once the students roll to obtain an activity, they should then roll again to obtain the number of repetitions.

How Do I Make Activities Developmentally Appropriate For My Students?

Knowing your students' fitness and skill levels is crucial to maintaining student interest and fostering success. Closely monitor students as they move through the Math Ball activities. If they are becoming bored, add an element of challenge. If they are struggling, encourage them to roll the ball fewer times.

More mature students who clearly understand the expectations of a Math Ball lesson can easily monitor their own needs and should be encouraged to adapt as they feel it is appropriate.

How Does This Product Relate to Current Educational Thinking?

There has been a movement to integrate core subject areas such as math and literacy into physical education lessons. Within this setting, there is an opportunity to foster real-life connections to student learning.

Further, according to the National Content Standards for Physical Education, physically educated students will understand that physical activity provides opportunities for enjoyment and challenge. The Math Ball can provide an opportunity for students to enjoy math skills in a fun and challenging way.



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