

All Balls On Deck

JUDGE READS TO TEAM

This is a Hands-On problem :

- 1) **You will have 7 minutes to complete this problem.** You may talk or ask questions at any time; however, time continues. Your solution will be scored when the team decides or at the end of 7 minutes.
- 2) **Your problem is to place as many balls as possible in the square in front of you. You will be given materials to be used in your solution. No other materials may be used.**
- 3) **Each ball must be placed one at a time into the square. The ball must be completely within the taped off area to count for score. Any part of any ball that extends past the plane of the taped boundary means that ball will receive no score.**
- 4) **You may not alter any of the balls in trying to solve this problem.**

Score will be as follows:

- Each ping pong ball completely within the square will receive 2 points
- Each plastic ball inside the square will receive 4 points
- Each tennis ball inside the square will receive 6 points
- How well your team works together will receive 1-20 points.
- Dented or damaged balls will have a penalty of 20 points each.

Your materials are:

- 1 sheet of 8 1/2 x 11": paper
- 1 piece of yarn 12" in length
- 4 straws
- 4 pieces of spaghetti
- 6 toothpicks

Repeat reading just (the bold) instructions in 1- 4

FOR JUDGES ONLY:

On a hard surfaced floor or tabletop , tape off a square to measure 7" x 7"
(For Divisions 2 and 3 make the square to measure 5" x 5") If the surface is not truly level, it won't matter for this problem!

Give each team a container with:

10 ping pong balls

10 plastic balls (about the size of tennis balls but smooth surfaced)

5 tennis balls.

The container used to hold the balls **may NOT** be used as part of the solution.

The team may use only the given materials for containing the balls in the taped area.

When scoring, use a ruler placed on the outside edge of the taped boundary to determine whether a ball is entirely within the plane of the boundary. Balls outside the plane of the boundary will NOT count for score.

If they ask...you may tell the team this BUT ONLY IF THEY ASK

They **do not have to use all the materials** to solve the problem.

It's the **outside edge of the taped boundary** that will be used to measure the plane of the box. If a ball is touching the tape or is a little over the inside edge of the tape, that's OK.

They can use their materials to create **some type of container** to hold the balls in the area but again, don't tell them this unless they ask.

They may use the plastic bag and may use the set of directions for extra materials if they ask.

They **may not** use any tools (like scissors or tape) to work with the materials.