

## The Mouse House

This is a verbal/hands-on (hybrid) challenge, you will have one minute to decide who will participate in the solution of the challenge. It is the decision of the team how many team members will participate. Your one-minute begins now.

**Challenge:** You must build a new "house" that is at least 6" high with a mouse hole in it. If you can roll a tennis ball through the mouse hole, and it is still intact, it will be big and strong enough.

**Time:** You will have six minutes to design and build the mouse house and 2 minutes to roll the tennis ball through the mouse hole and add the "family members, represented by ping pong balls.

**Scene:** You are a tiny house mouse living in house that your family has inhabited for generations. It is getting very crowded as your family grows. Your problem is to build a new "house" that is at least 6" high with a mouse hole in it. If you can roll a tennis ball through the mouse hole, the house will be big enough for the whole family.

### Materials:

<ul style="list-style-type: none"> <li>▪ 10 spaghetti</li> <li>▪ 10 "ziti" (pasta)</li> <li>▪ 6 straws</li> <li>▪ 2 rubber bands</li> <li>▪ 2 sheets notebook paper</li> <li>▪ a 12" piece of string</li> <li>▪ 5 paper clips</li> <li>▪ 3 cotton balls</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1 12" piece of wax paper</li> <li>▪ 2 sheets construction paper (8.5 x 11)</li> <li>▪ 5 index cards</li> <li>▪ 1 paper cup</li> <li>▪ 1 paper plate</li> <li>▪ 4 mailing labels</li> <li>▪ 12" piece of aluminum foil</li> </ul>
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**Directions:** You will have six minutes to design and build the mouse house. You may also practice rolling a tennis ball or the ping pong balls. After the six minutes are over, you will be given 30 ping pong balls and one tennis ball. During the next two minutes, you must first roll the tennis ball until it goes through the mouse hole once. You may not push the tennis ball at all. You may only place it on the top edge of the ramp and let it go. After the tennis ball successfully passes through the hole you may remove the tennis ball and start to roll ping pong balls, one at a time into the mouse house until time runs out.

**Set-Up:** Must be on a flat surface. Tape an 18" square with masking tape and a line 18" from the front edge of the square. The entire ramp must be placed behind the line. The ramp must be made of a piece of 2 x 4, about 6" high and an 8" piece of cove molding wide enough to hold a tennis ball.

### Scoring:

2 points for every inch over 6" high; 10 points if you can roll the tennis ball through the mouse hole without breaking your house; 3 points for each ping pong ball that can be contained within the house, up to 30.

Creativity of the design of the mouse house	12 pts.
Creativity of the use of materials	8 pts.
Number of types of materials used (1 pt per material)	8 pts (maximum)
Teamwork	12 pts.