The Challenge

20 sticks of spaghetti + one yard tape + one yard string + one marshmallow
Build the tallest freestanding structure

The winning team is the one that has the tallest structure measured from the table top surface to the top of the marshmallow. That means the structure cannot be suspended from a higher structure, like a chair, ceiling or chandelier.
The Entire Marshmallow Must be on Top:

The entire marshmallow needs to be on the top of the structure. Cutting or eating part of the marshmallow disqualifies the team.
Use as Much or as Little of the Kit:

The team can use as many or as few of the 20 spaghetti sticks, as much or as little of the string or tape.

The team cannot use the paper bag or the scissors as part of their structure.
Break up the Spaghetti, String or Tape:

Teams are free to break the spaghetti, cut up the tape and string to create new structures.
The Challenge Lasts 18 minutes:

Teams cannot hold on to the structure when the time runs out. Those touching or supporting the structure at the end of the exercise will be disqualified.
Review

• Build the tallest freestanding structure

• The entire whole marshmallow must be on top

• Use as much or little of the kit

• Break up the spaghetti, string or tape

• The challenge lasts 18 minutes
Does everyone understand the rules?

Any questions?
Tom Wujec explains a design exercise: The Marshmallow Challenge first brought to TED by Peter Skillman
http://marshmallowchallenge.com/TED_Talk.html
Take-Aways

• Kids do better than business students

• Prototyping matters

• The marshmallow is a metaphor for the hidden assumptions of a project

• It takes a team!!!
The Challenge: Lessons Learned

• What team strategies did you use?
• How could your team improve?
• How is working with a team different to working: a) with one partner? b) by yourself?
• Did you use any computational thinking?
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<tr>
<th>Groups</th>
<th>Teams</th>
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<tr>
<td>• Members work independently and they often are not working towards the same goal.</td>
<td>• Members work interdependently and work towards both personal and team goals, and they understand these goals are accomplished best by mutual support.</td>
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<td>• Members focus mostly on themselves because they are not involved in the planning of their group's objectives and goals.</td>
<td>• Members feel a sense of ownership towards their role in the group because they committed themselves to goals they helped create.</td>
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<td>• Members are given their tasks or told what their duty/job is, and suggestions are rarely welcomed.</td>
<td>• Members collaborate together and use their talent and experience to contribute to the success of the team's objectives.</td>
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<td>• Members may not trust each other and are very cautious about what they say and are afraid to ask questions.</td>
<td>• Members make a conscious effort to be honest, respectful, and listen to every person's point of view.</td>
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<td>• Members are bothered by differing opinions or disagreements because they consider it a threat.</td>
<td>• Members see conflict as a part of human nature and they react to it by treating it as an opportunity to hear about new ideas and opinions.</td>
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<td>• Members may or may not participate in group decision-making, and conformity is valued more than positive results.</td>
<td>• Members are encouraged to offer their skills and knowledge, and in turn each member is able contribute to the group's success.</td>
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<td>• Members participate equally in decision-making, but each member understands that the leader might need to make the final decision if the team cannot come to a consensus agreement.</td>
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Adapted from: http://www.ndt-ed.org/TeachingResources/ClassroomTips/Teamwork.htm