

JANUARY STEM CHALLENGE

Once There was a Snowperson



CHALLENGE: January means winter is in full swing here in the northern hemisphere, and for many of us that means SNOW. Lots and lots of snow. But snow melts when you bring it inside. Design and build a snowperson that will not melt when you bring it inside. The bigger and taller, the better! Don't forget to give it a face and snow clothes!

CONSTRAINTS:

- * Snowperson should be freestanding
- * Use only materials from the allowable materials list, but you can use any combination and as much as you want, as long as it matches your schematic.
- * Any materials may be used for the face and snow clothes.

MATERIALS:

- * Sugar cubes
- * Spaghetti
- * Marshmallows (any size)
- * Toothpicks
- * White gum drops
- * Tape or glue

DESIGN:

- * Brainstorm, then draw a labeled schematic (blueprint or outline) of your design *before* you start building
- * Decide what materials you need and how much of each item. *Write it down.*

BUILD, TEST, ANALYZE:

- * Did it work how you expected?
- * What changes could you make to improve your design?

Tips for Teachers:

- ★ Choose materials and size constraints at your convenience
- ★ Have students work in small teams to improve communication and collaboration skills
- ★ When testing and analyzing, students may find their choice of materials was not the most effective. Getting new materials can be part of the redesign process.

December Student Challenge Worksheet



Design Challenge: January means winter is in full swing here in the northern hemisphere, and for many of us that means SNOW. Lots and lots of snow. But snow melts when you bring it inside. Design and build a snowperson that will not melt when you bring it inside. The bigger and taller, the better! Don't forget to give it a face and snow clothes!

Draw and label schematic of your design

Build: Build your design based on your plan.

Test: Record the results of your snowperson testing

	Trial			
	1	2	3	4
Did the snowperson stand alone? Was it the size you wanted?				
Changes to be made				

Analyze:

What worked the best? What could you do differently with more time?