

Spaghetti Tower

The Challenge: Your group has \$25 to spend on materials to build a spaghetti tower. Your job is to build a tower at least 6 inches tall using raw spaghetti that can hold 100 grams of weight for 30 seconds without breaking.

Tip: Think about how towers are structured to hold weight. How much of the materials will you need to build a strong tower?

Materials:

Spaghetti sticks.....\$0.25 each
12" piece of tape.....\$5.00 each
Marshmallows.....\$0.25 each

Be sure to record your materials and their costs on a separate piece of a paper.

Water Drop Racer

The Challenge: Can your group create a wax paper track that gets your water drop from one end to the other in the fastest time? You have \$10 to spend.

Tip: Think about roller coasters, how do they work?

Materials:

12" wax paper strips.....\$2.00/ea
12" piece of tape.....\$1.00/ea
Water with food coloring.....Free
Stopwatch.....Free

Be sure to draw your race track design on a separate piece of paper. Record your results.

Pom Pom Launcher

The Challenge: With your group, invent a device that launches a pom pom into the air. The further it travels the better! You have \$15 to spend.

Tips:

- Think about devices that launch things into the air. How do they work?
- Will your launcher be hand held or sit on the floor or table?

Materials:

Marshmallow Pom Poms.....\$3.00 for
5 marshmallows
Index cards.....\$2.00/ea
12" piece of tape.....\$2.00/ea
Straws.....\$0.50/ea
Popsicle sticks.....\$2.00/4
Rubber bands.....\$2.00/ea
Scissors.....FREE
1 Paper Cup.....FREE

*You do not have to use all materials!

Marble Run

The Challenge: Your group has \$12 to spend on materials. Create a track that must stand by itself. The marble must travel at least 5 feet.

Tips:

- Experiment with height. How does the height impact the distance the marble travels.
- Try to use the least amount of money.

Materials:

You do not have to use them all.
Marble.....FREE
12" tape.....\$2.00/ea
Cardboard tubes.....\$3.00/ea
Index cards.....\$0.50/ea
Popsicle sticks.....\$1.50/ea

You may also use any of the following:

- Scissors.....FREE
- Stapler and staple.....\$1.00/ea

Balloon Hovercraft

The Challenge: Can your group build a balloon hovercraft that travels the farthest distance?

Additional Challenge: Make your hovercraft hover the highest.

Materials:

- Balloon
- Plastic Plate
- Pop bottle cap with a small hole
- Tape



Water Bottle Racer

The Challenge: Create a race car using a water bottle and other recycled materials. The car must travel at least 3 feet.

You have \$15 to spend.

Tip: Think about how much air needs to go in the balloon to make it travel far.

Materials:

1 empty water bottle.....	FREE
1 balloon.....	FREE
6" piece of tape.....	\$1.00/ea
Straws.....	\$3.00/ea
4 bottle caps.....	\$1.00/ea
Toothpicks.....	\$1.00/ea

You may also use the following:

- Scissors (FREE)
- Glue (FREE)

*Be sure to practice.

Egg Drop

The Challenge: Create a structure that will protect a raw egg from a drop at several feet. The egg cannot crack in order to be successful.

Tip: Think of parachutes. How do they protect people from breaking bones when they land?

How fast or slow should your parachute be to keep the egg safe?

Materials:

- 1 raw egg
- 5 coffee filters
- 4 pieces of string
- Tape
- Aluminum foil
- Cardboard

You may also use the following:

- Scissors

*Be sure to practice WITHOUT the egg!

Popsicle Stick Bridge

The Challenge: Your group has \$15 to spend on materials. Can your group build a 1 foot long bridge from popsicle sticks that can hold 1000 grams of weight?

Additional Challenge: Use the least amount of money to complete the challenge.

Tip: Think of how bridges look. How are they able to hold weight?

- Test your bridge along the way.

Materials:

You do not have to use them all.

Popsicle sticks.....	\$0.25 each
Tape.....	\$3
Glue.....	\$7

Draw your design. Make sure it has labels.

Record the amount of materials and the cost of your project.