

# RUBBER BAND RACER EGG-PRESS LANE CHALLENGE

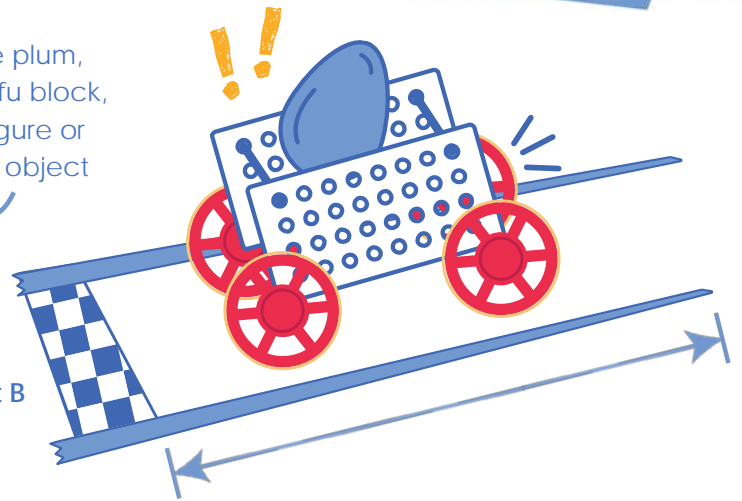
## THE CHALLENGE

Breaking fast...with *breakfast*?



Or ripe plum,  
firm tofu block,  
clay figure or  
fragile object

Using your rubber band racer, ferry an egg from **Target A** to **Target B** without cracking it. Keeping your egg safe also requires **speed** - will you deliver brunch on time?



Target B

**GO** → Build Guide → Sled Race (optional) → Ramp Roll Lab (optional) → Wind Up Lab (optional) → Design & Engineering Challenge → You Are Here

Before you start... Make sure you have built a **Rubber Band Racer** for use on this challenge.  
Documents & Supplies at: [teachergeek.com/learn](http://teachergeek.com/learn)

## THE DESIGN



Cotton, Tape,  
Styrofoam

Experiment with materials to protect your egg. Remember, your racer must move with only the **stored (potential) energy** in its rubber bands.

Your racer has **traction** (friction) between its wheels and the floor. How can you reduce this **resistance**?



**Tension**

**Kinetic Friction** = the friction force between two objects when one or both, are moving.

**Static**

**Static Friction** = the friction force between two unmoving objects (tension or potential energy.)

## CONSTRAINTS

(rules & limits for your design)

### Challenge Supplies:

Racer (from Build Guide), yardstick, fragile object, stop watch, target materials, recycling bin materials

### Teacher's Note:

Find more information on setting up targets and running this challenge in the [Racer Classroom Overview](#).

**Difficulty:** Hard

\* Compare with *Science Olympiad's "Scrambler" Event*

### Allowable Materials:

- TeacherGeek components
- Recycling bin materials
- other available materials: (e.g. wood, 3D printing, plastic)



### Ground Rules:

- Distance must be measured at front wheel(s)
- Must use at least two TeacherGeek wheels

**Time Limit:** \_\_\_\_\_

Fill in how much time you have to complete this challenge



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Name: \_\_\_\_\_ Set: \_\_\_\_\_

Mark your run time, distance score & whether the egg breaks or remains intact.



**Final Score = Run Time + Distance Score - Penalties**  
(in seconds)

The time it takes the racer to travel from the 0.5-meter line to the 8.5-meter line (or target).

Measured from the tip of the egg to the center of the target/finish line.

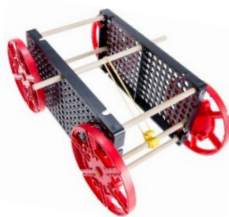
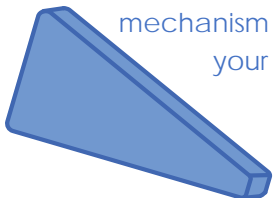
Did your egg fall or break?  
Multiply score by two.

Did your racer leave the lane or touch the lane barrier?  
Multiply score by two



Design Or Group	Trial #1		Trial #2		Trial #3		Final Score (Averaged)
	Distance	Time in seconds	Distance	Time in seconds	Distance	Time in seconds	
	Broken?		Broken?		Broken?		
	Broken?		Broken?		Broken?		
	Broken?		Broken?		Broken?		
	Broken?		Broken?		Broken?		

Use a **ramp** or launcher mechanism to propel your racer out the gate!



**Barrier Materials:** Mark your track with tape, string, cardboard, wood planks

