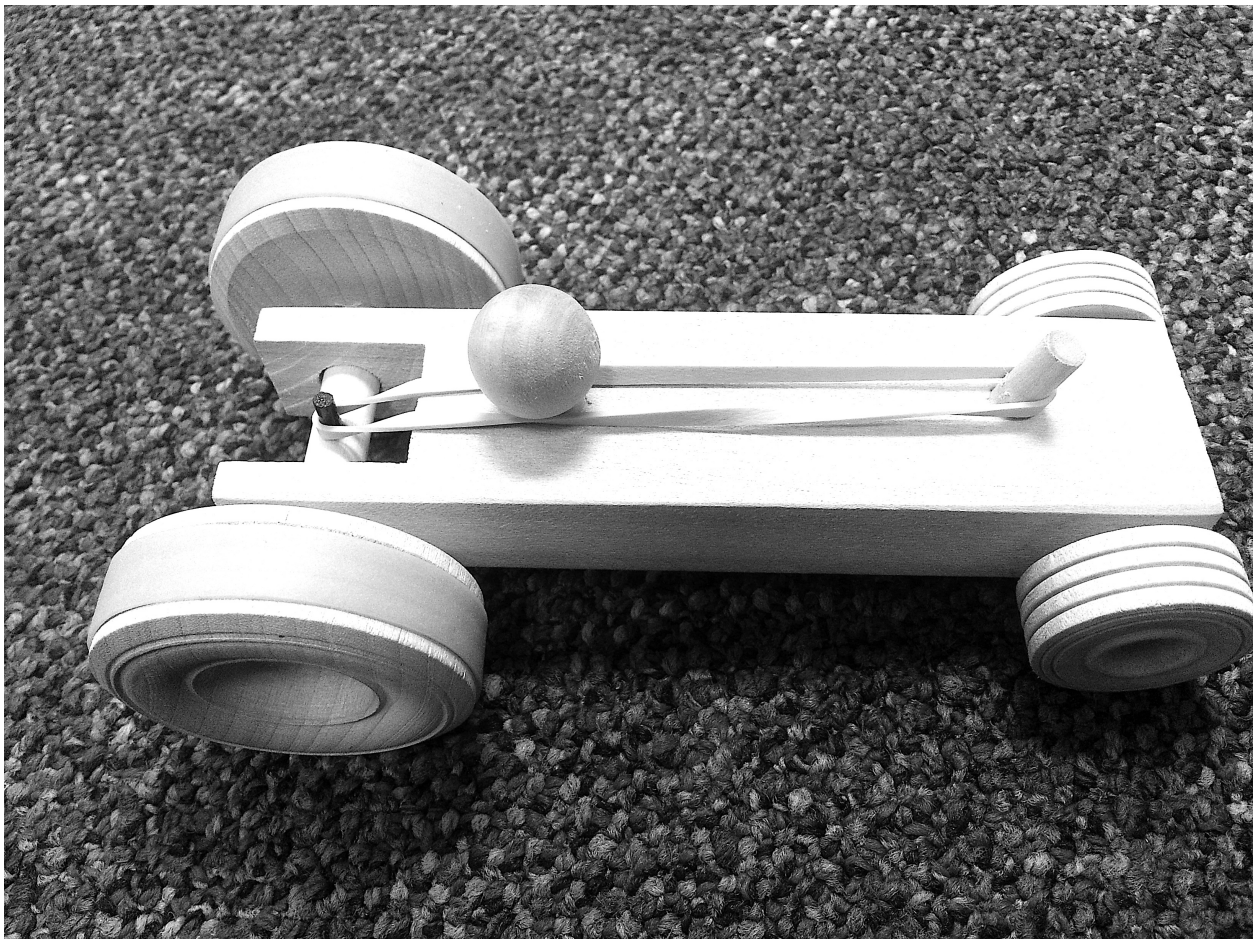


Name _____

Date: _____

Focus on Energy

Student Notebook



Engineering Design Challenge

The Energy Tracking Lens

Part 1. Describe what you observe.

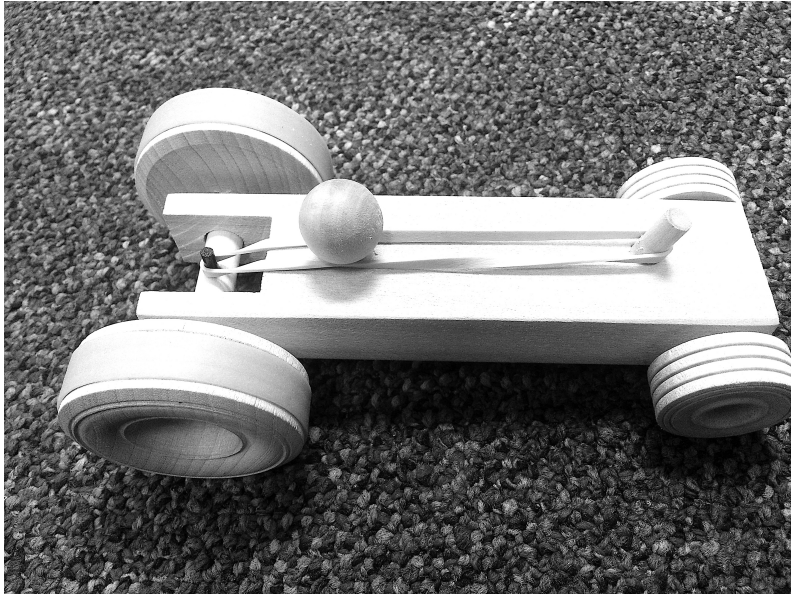
Part 2. Tell the energy story.

- System components?
- Form(s) of energy?
- Energy gains and losses?
- Energy transfers?
- Energy transformations?
- Where does the energy come from and where does the energy go?

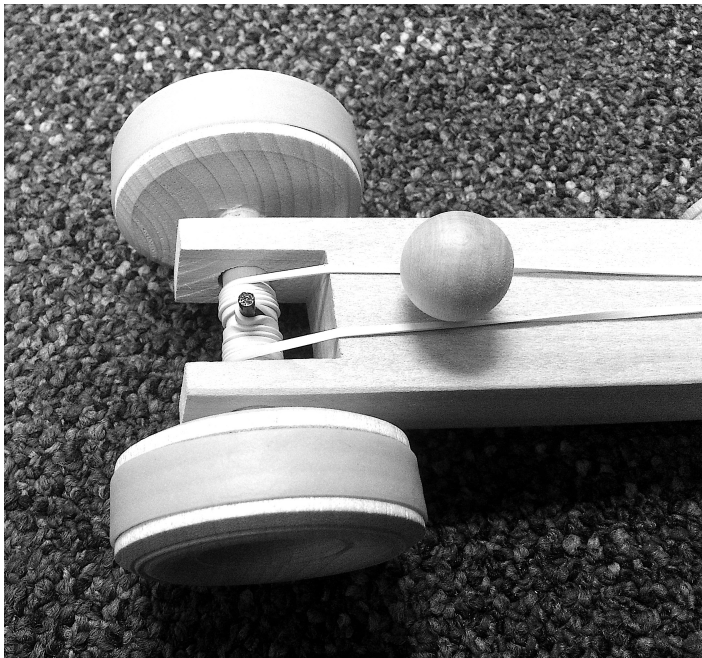
Use observations to support your energy story.

Winding the Rubber Band

Start with the black peg straight up.



Turn the rear wheels back six full turns. It should look something like this.



Test Run

Before you start to work on the brakes, wind the rubber band six times around the axle.

Place the front wheels on the starting line and let the car go.

How far did the car travel? Measure to where the front wheels touch the floor.



Design, Build and Test the Brakes

Use any of the materials in the zip lock bag to design the braking system.

You may also use the zip lock bag as part of your design.

The wide rubber bands on the back wheels are part of the car. Leave them on the wheels.

Keep Records

For every test of the brakes, check one of the boxes to show how far the car traveled. You can stop testing after the car has stopped in the target zone three times in a row.

	Stopped Before Target Zone	Stopped In Target Zone	Stopped Past Target Zone
Test 1			
Test 2			
Test 3			
Test 4			
Test 5			
Test 6			
Test 7			
Test 8			

Last Test

For the last test you completed, how far did the car travel? **Measure** to where the front wheels touch the floor.

Summary Sheet

For Rows 1, 2, and 3, copy the circles from your energy cube drawing and show where you put the energy cubes.
For Row 4, talk with your partner and then show where you think the energy cubes would be 30 minutes after the car stopped.

1. Rubber band wound 6 times around axle. Car is **not** moving.

2. Car is moving.

3. Car just stopped.

4. 30 minutes after car stopped.

Summary Sheet

For Rows 1, 2, and 3, copy the circles from your energy cube drawing and show where you put the energy cubes.
For Row 4, talk with your partner and then show where you think the energy cubes would be 30 minutes after the car stopped.

1. Rubber band wound 6 times around axle. Car is **not** moving.

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