

120+ minutes

Wagi's **WILD & WACKY**

World-Changing Contraption Challenge

Inspired by my childhood friend, Rube Goldberg

Welcome to the most ridiculously fun, mind-bending, marble-launching mission ever invented. Yes, **your mission is to drop a marble into a paper cup.**

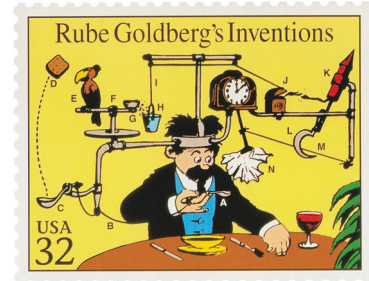
But not in one step. Not even two. Try **twenty-six**. Or more. Using simple machines. Using chain reactions. Using imagination. Using a marble.



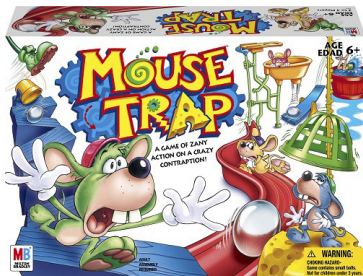
Who Was Rube Goldberg?

Rube Goldberg (1883-1970) was a cartoonist, sculptor, engineer, and inventor.

Rube created wacky, complicated contraptions that performed simple tasks like opening an umbrella, scratching someone's back, or sharpening a pencil. People loved his cartoons so much, they put one on a U.S. Postage Stamp.

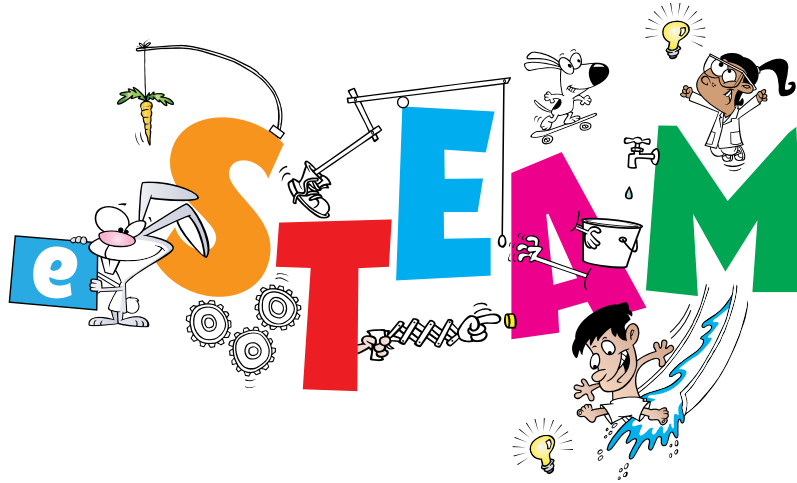


A Rube Goldberg contraption consists of a series of simple machines linked together to produce a domino effect, in which each device triggers the next one, and the original goal is achieved only after many steps.



You may be more familiar with his work than you think. If you've played the classic **"Mouse Trap"** board game, you've experienced the fun of Rube's creations.

The Power of eSTEAM



At WAGiLabs, we believe that real invention comes from mixing all kinds of creativity. We call it e**STEAM**:

**Entrepreneurship + Science + Technology +
Engineering + Arts + Mathematics**

Mix them together and you get the most powerful skill on Earth:



Here's Your Wild & Wacky Goal

Design and build a Rube Goldberg-style contraption that uses at least 6 simple machines and 26 steps to get a marble into a cup.

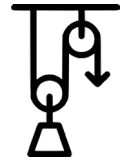
Sound simple? Think again.

Winning this creative adventure will be full of twists, flips, chain reactions, loud pops, weird noises, exploding balloons, spinning things, and total joy.



The Six Simple Machines

1. **Pulley** – A wheel and rope. Raises flags. Use it to lift a giant spoon. Or a shoe tied to a banana.



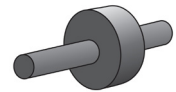
2. **Inclined Plane** – A ramp. Great for rolling. Let your marble ski down a ruler mountain into a cereal box.



3. **Lever** – A bar that pivots. Think seesaw. Flick a ping pong ball. Launch a LEGO.



4. **Wheel and Axle** – A round object attached to a rod. It helps you roll things fast—like a toy car.



5. **Wedge** – A triangle used to split things apart. Wedge open a mini door. Or slice through paper.



6. **Screw** – A spiral ramp. Tightens things together. Spin a lid to trigger a falling spoon.



FUN FACT: Your bicycle combines all six simple machines into one powerful machine—can you label them all?



The Four Levels of **wackinE**ss:

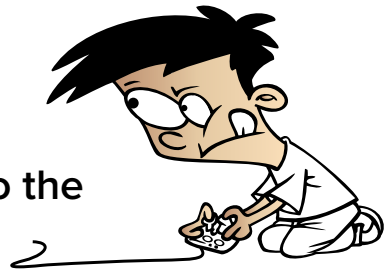
- **Bronze:** Include **six** different **simple machines**.
- **Silver:** Also has **twenty six** distinct **steps**.
- **Gold:** Also has a theme (space, underwater, jungle, cheese) and tells a story.
- **Platinum:** Also, one step triggers something unexpected like like popping a balloon, spraying glitter, or setting off a fan.

A step is a single action—like a ball rolling, a lever flipping, or a marble landing in a cup.

Why 26 Steps?

Think of it like a video game adventure!

Imagine if you could get from the beginning to the end of a game by just walking or running straight there - that would be boring!



But what if instead, you got to explore 26 different exciting levels (one for each letter of the alphabet), with each level having its own challenges, surprises, and cool discoveries?



That's what Rube Goldberg wanted! Instead of taking the quickest path from A to B, he wanted to visit every letter in between (A, B, C, D... all the way to Z).

Each step in your contraption is like a new letter in your alphabet adventure, giving you a chance to discover something amazing you might have missed if you took the shortcut!

WAGiWays to Follow:

Dream BIG: No idea is too silly.

Yes, AND: Build on ideas together.

Do GOOD: Focus on ideas that make life better.

Get Messy: Mistakes = learning.

Keep Going: Don't stop when it fails. Try again.

Scoring Guidelines

These points will be awarded based on your final design.

Number of simple machines used ____ x 15 points = ____

Number of different materials used ____ x 15 points = ____

How imaginative and clear your story is (up to 25 points) = ____

* Bonus points if a sound makes your teacher jump!

TOTAL ____

Building Your Contraption

Step 1. IMAGINE: See it before you build it!

Close your eyes. Can you see the marble flying off a ramp, hitting a switch, lighting up a sign, and knocking over a tower of paper cups?

Can you hear the sounds? A squeak, a pop, a ding? Let your brain go wild.

Share your vision with your team.



Step 2. DEFINE: Write a “How might we...” Statement.

Try this: **How might we** roll a marble into a cup in 26 wacky steps using all kinds of machines and materials, and tell a story about life’s biggest challenges?

Step 3. EXPLORE: Brainstorm like you’ve just had five scoops of “imagination” ice cream.

Ask:

1. What simple machines and materials can we use?
2. What if our contraption was HUGE? Tiny? Underwater?
3. What if parts of it talked? Sang? Danced?



Write your ideas on sticky notes.

Now, it’s time to **FAIL** on purpose and use **Opposite Thinking**:

Ask:

1. What would make the **WORST** contraption ever?
2. How can we make sure the marble **NEVER** reaches the cup?

Write down your **“NEVERs”** on sticky notes:

I’d never use breakable parts.

I’d never make boring steps.

Now flip them:

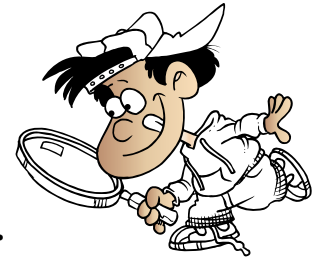
Breakable parts might create a cool explosion!

A boring step might be followed by a surprise explosion!

Write your ideas on more sticky notes.



Now, let's **Borrow** some ideas. Think like a detective looking for clues.



1. Here is a “Turn On a Light” contraption that might give you ideas to write on sticky notes.



2. Here is a link to Rube Goldberg videos on YouTube that might give you more ideas to write on sticky notes.

<https://www.youtube.com/channel/UCp7FcZAAyqnBunO6eAAh8NQ>

Create a Storyboard

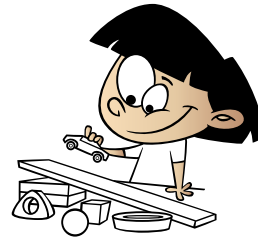
Your brainstorming goal was to devise creative ways to put the marble in the cup using as many steps as possible.

Now, let's create a **Storyboard** showing where each idea will go in your contraption. You can easily move your ideas around to revise the steps.



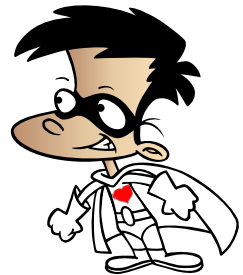
Step 4. BUILD

1. Label every step and every machine.
2. Give your pieces silly names.
3. Add a theme: outer space, health, environment, bullying
4. Decorate it with flags, signs, sounds and lights.
5. **Test it.** Fix it. **Try again.** And again.



Step 5. PRESENT

1. Now it's showtime. Your contraption isn't just a machine—it's a story. It's your journey.
2. What does your machine say about bouncing back from failure? About using courage? About teamwork?
3. Pick your presenters.
4. Practice your story.
5. Assign helpers to guide the marble if it gets stuck.
6. Then...



... 3 ... 2 ... 1  roll the marble!

Step 6. JOURNAL

After the marble has landed in the cup, it's time to reflect:

1. What did I learn?
2. What surprised me?
3. What was hard? What was awesome?
4. How did trial and error help?
5. What life problem could I solve using the same steps?

