

# STEM Challenge

# Materials

## Cheat Sheet

Over  
**50**

STEM challenge  
ideas  
using common  
supplies

# THANK YOU!

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## ABOUT VIVIFY

Vivify is a team comprised of two Aerospace Engineer friends, Natasha and Claire, who live in Texas. We met as college classmates and roommates at Texas A&M University and later left engineering careers in the Department of Defense and Air Tractor to pursue our passion for STEM education. Learn more of our story [here](#).

Our goal is to bring engineering to life—to vivify learning—for kids of all ages. Please connect with us so we can learn how to better serve your students!

- Natasha & Claire, The Vivify Team



## Connect with us for free STEM resources!

Subscribe to our newsletter and receive access to a library of free STEM resources through [www.vivifystem.com](http://www.vivifystem.com). Follow us on social media or listen to “The STEM Space” podcast for more resources and ideas. We also welcome you to join [“The STEM Space”](#) Facebook group to connect with other educators across the world.



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## ABOUT THESE ACTIVITIES

The following STEM Challenge Materials Cheat Sheet is a list of supplies and corresponding recommended challenge ideas. This is intended to be a starting place to come up with activities to boost critical thinking skills and STEM knowledge. Helpful links are provided for further details on a challenge or related products. Follow us on social media to get the latest version of this resource as we update it in the future. Enjoy!

**TOILET PAPER ROLLS**

- Tallest Tower
- Ping pong ball run
- [Rubber band car](#)
- Kazoo
- [Bridge](#)
- Bird feeder
- Telescope
- Kaleidoscope

**PLASTIC BOTTLE**

- [Volcano](#)
- Rocket
- [Coke/Mentos explosion](#)
- [Rubber band car](#)
- Paddle boat
- [Lava lamp](#) / Blobs in a Bottle

**CRAFT STICKS**

- [Bridges](#)
- [Catapults](#)
- [Candy grabber](#)
- Raft
- Marble run
- Sundial

**NEWSPAPER**

- [Tallest tower](#)
- [Support a weight](#)
- [Make a chair](#)

**CUPS**

- [Parachute challenge](#)
- [Lander challenge](#)
- Air vortex cannon
- [Greenhouse](#)
- Art robot
- Anemometer
- Tower
- Telephone

**PLAYDOUGH**

- Towers (with toothpicks, straws)
- Squishy circuits
- "Fossil" impressions
- Stopmotion Animation
- Makey Makey controller

**INDEX CARDS**

- Tallest tower
- Support textbook 5" above the table
- [Bridge](#)
- Windmill

**RUBBER BANDS**

- Trampoline
- [Suspension/Rope bridge](#)
- Slingshot
- [Rubber band powered vehicle](#)

**PIPECLEANERS**

- [Tallest tower](#)
- [Suspension bridge](#)
- Bird feeder

**PAPERCLIPS**

- Motor
- Compass
- Circuits

**BALLOONS**

- Balloon rockets
- Hovercraft
- [Balloon powered car](#)

**PAPER**

- Tallest tower
- [Bridge](#)
- Paper airplane
- [Sailboat](#)
- Helicopter
- Roller Coaster

**ALUMINUM FOIL**

- Tallest tower
- [Sailboat](#)
- Matchstick rocket

**STRAWS**

- [Hoop Glider](#)
- Tower
- Boats
- Sockets

# WANT MORE STEM?

For a complete list of all of Vivify STEM resources broken down by standards, topics, and grade levels, go here: <http://bit.ly/VivifyResourceGuide>



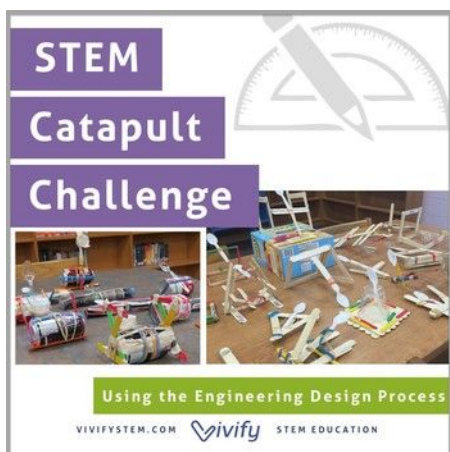
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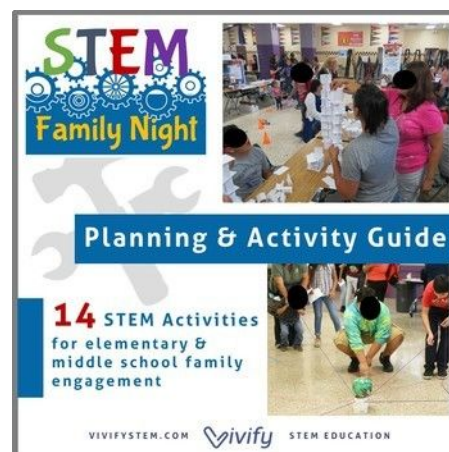
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## Vivify's Overview of STEM Education

Successful STEM education is an empowering interdisciplinary approach that brings math and science concepts to life through problems that mimic the complexities and excitement of the real world. STEM revolves around the Engineering Design Process that embraces failure, relies on teamwork, and requires critical thinking and creativity. While exciting, educators often become intimidated as a search for curriculum leads to an overwhelming range of activities from index towers to robotics competitions. At Vivify, we believe that not all STEM is created equal. Educators should adopt a [3 Stages of STEM](#) approach by progressively building towards more complex projects.

To learn more about the 3 Stages of STEM, go here: <http://bit.ly/stemstages>