STEM Stacker Spectacular

Challenge Examples

Years 7 - 12

For as many blocks as you can, you'll write two types of challenges:

Pull Challenge: A quick, engaging activity for when the tower stays standing.
Crash Challenge: A longer, hands-on challenge for when the tower falls.

If adding both challenges to a block, write "Pull Challenge" on one side with the activity and "Crash Challenge" on the other side with its task. If you're only adding one challenge type per block, that's perfectly fine too!

The goal is to create fun, STEM-related challenges that encourage students to think, experiment, and learn.

Pull Challenge Examples

Name three animals that are vertebrates.

Name one renewable and one non-renewable energy source.

Pretend you're gravity and explain why objects fall to the ground.

Name three states of matter.

Identify a body part where a hinge joint can be found.

Explain why the moon looks different on different nights.

Name two liquids that mix well and one that doesn't (e.g., oil and water).

Act out how a plant grows from a seed.

Describe what happens when ice melts.

Name a bird that cannot fly.

Point to where the north star would be (estimate and explain why).

Share a pattern you've seen in nature, like shapes or colors.

Name one thing astronauts need to survive on Mars.

Think of a problem and come up with an invention to solve it.

Explain how to do a simple task, like tying your shoes, in 3 steps.

Imagine a new animal that could live in a very cold place. What would it look like?

What makes a snowflake unique?

What do the letters in STEM stand for? Can you think of one example for each one?

Crash Challenge Examples

Build a tower using only pencils and erasers.

Write down as many mammals as you can in 30 seconds.

Create the tallest tower possible using just one piece of paper and tape.

Sketch a design for a container that could protect an egg from being dropped.

Design a shelter that could protect humans on Mars. Sketch it and describe the materials you'd use.

Create a simple parachute using paper and string. Test it with a small object like an eraser.

Guess how many sheets of paper are needed to stack as high as your arm. Then measure and see how close you were.

Stand in three different places and watch how your shadow changes. Can you make different shapes with your shadow?

Can you find two things from the same plant that have different patterns? What makes them different?

How would you build a bridge for a toy car using only your hands? What shapes or ideas would make it strong?

Drop two objects of different weights from the same height. What happens? Why?

Stand next to a wall and try to lift one foot off the ground without leaning. What happens? Why is it difficult?

Blow up a balloon and then release it without tying the end. What direction does it go? Why?