

## Brick Drop Challenge

Can you build a strong brick structure? Wear the hat of an engineer as you attempt to design a LEGO structure that can withstand a 4-foot drop. Experiment by changing the way you stack bricks together. Consider elements like surface area and impact locations as well. See your bricks survive the fall?

### Materials needed:

- 20 LEGO® bricks, all the same size
- Measuring tape

### Step-by-step instructions:

1. Use 20 of the same-sized LEGO® bricks (e.g., 2x4) to build a structure.
2. Using the measuring tape, drop your structure from a height of 4 feet.
3. If it breaks, change the design of your bricks and try again.
4. If your structure survived, see if it can handle an even higher drop!

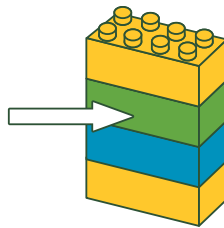
### Optional explorations:

- Experiment with the way you drop your brick structure. Is your structure more likely to survive if a large or a small surface area hits the ground first?
- Try the experiment again using a different size of LEGO® brick. Is it harder or easier to create a design with the different sized bricks?

### Discussion questions:

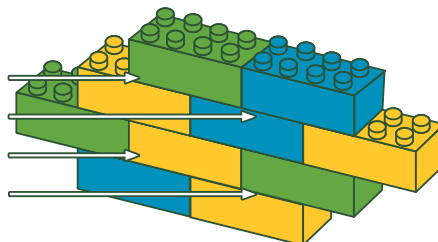
- Did you make changes to your design? How?
- What made your structure more durable?
- Was your structure stronger when the bricks overlap or when they are stacked on top of each other?

**Smaller surface area** = Large amounts of force impact the structure in one concentrated place



**Stacked bricks** = Connection between all bricks not as strong

**Larger surface area** = Smaller amounts of force are distributed across the structure



**Overlapped bricks** = Connection between all bricks is strong

