STEAM CHALLENGE

Reinforced Sand Castles

1

Introduction

Buildings need to be able to sustain a lot of weight. What makes a building strong to support loads or weights? Often one type of material needs to be stronger to meet demands. That is why materials in buildings often need to be reinforced.

2

Materials

- Sand or Kinetic sand
- Plastic molds
- Toothpicks
- Weights

3

Instructions

Place the kinetic sand in a mold and compress the sand. Fill the mold to the top. Repeat the same process but place toothpicks along the way as reinforcements as you fill-up the mold. Carefully remove the sand from the molds and place them next to each other.

Place the same number of weights on top of each sand structure.

4

Let's Discuss

Which sand structure was stronger? What was the difference between them? Did the structures give any warning that it was going to fail?
Do you think the result will change if the number or placement of toothpicks is changed?
How do you think engineers apply this concept in real life structures and buildings?

5

Tell the World!

Liked this activity? Learned something new? Shared what you discovered with your friends. Keep asking questions and stay curious!