

# MEDIEVAL ENGINEERING IN ACTION

## Building Trebuchets and Battering Rams in STEM Class

---

This month in our STEM class, we embarked on an exciting set of engineering projects: MEDIEVAL TECH. We built moveable battering rams one week. Now we are building our very own trebuchet! This ancient siege weapon, known for its ability to hurl projectiles over great distances, provided the perfect opportunity for hands-on learning and teamwork.

We learned that Medieval engineers did not have the advantage of Isaac Newton's calculus nor his Laws of Motion and gravity, but must have built their trebuchets through trial and error! Wow, there must have been several unsung geniuses back then. Sir Isaac Newton published his treatise on his mathematics in the year 1687, some 500+ years after the first appearance of the trebuchet.

### The Design Process

We began by researching the history and mechanics of trebuchets. Students worked in small groups to design their models, considering factors like leverage, weight distribution, and projectile trajectory. After sketching their designs, each team presented their ideas to the class, fostering collaboration and critical thinking.

### Construction Day

With designs approved, we gathered in teams with our materials: popsicle sticks, tape, hot glue, and rubber bands. The construction process was filled with creativity and problem-solving. Teams learned to measure accurately, assemble their trebuchets, and utilize the flexibility of rubber bands or other materials for launching. Despite a few challenges, including design tweaks and structural adjustments, the enthusiasm never waned.



# The Test Launches

After a week of hard work, we will arrive at the moment of truth: test launches! We will take our trebuchets and set up a target area. Each team will take turns launching projectiles, cheering for one another and taking notes on distance and accuracy.

## Reflection and Learning

Following the launches, we will hold a reflection session where students discuss what worked, what didn't, and how they could improve their designs. This exercise emphasizes the importance of the engineering design process, from brainstorming to testing and revising.

Building trebuchets not only teaches us about physics and engineering principles but also highlighted the value of teamwork and perseverance. God's universe is governed by laws that people have been able to discover and take advantage of. God has made us able to learn these principles and apply them to all the challenges we may face, not only for war, but for building all the infrastructure and the machines we see around us everyday.

We can't wait for our next project and to see what we'll create together!

Stay tuned for more exciting updates from our STEM class!

