

Engineering with Lego Blocks: Catapults and Trebuchets

::7 WEEK COURSE OUTLINE::

Day 1

- Introduction
- **Lesson :** How Levers Work
- **Challenge :** Building a lever to lift up a heavy box
- **Concepts learned:** Basics of a lever, Force

Day 2

- **Lesson :** Balancing Scales
- **Challenge :** Building a scale and balancing LEGO blocks with coins
- **Concepts learned:** The effect of arm length and force

Day 3

- **Lesson :** Launching Devices 1
- **Challenge :** Building a rubber band powered catapult
- **Concepts learned:** Potential & Kinetic Energy, 1st law of Thermodynamics

Day 4

- **Lesson :** Launching Devices 2
- **Challenge :** Building a Trebuchet
- **Concepts learned:** Potential & Kinetic Energy

Day 5

- **Lesson :** Review catapult designs
- **Challenge:** Students create their own catapult design that can complete certain distance challenges.
- **Concepts learned:** Review of previous weeks

Day 6

- **Team Competition:** Students team up and start their catapult design for the final day challenge.

Day 7

- **Team Competition :** Students compete to see who can build a launching device that shoots the furthest!