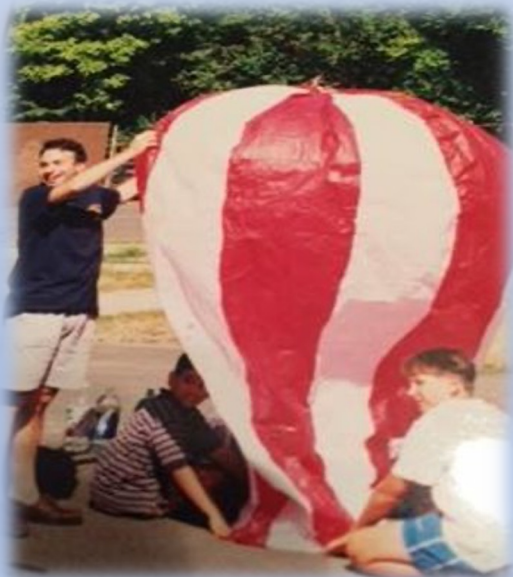


ALL STEM LEADS TO ROME





ROUTE 66 PODCAST



ROUTE 66 PODCAST

Extraordinary stories from the Mother Road



"They were told that NYC had been completely destroyed. They couldn't believe it was rebuilt so quickly."



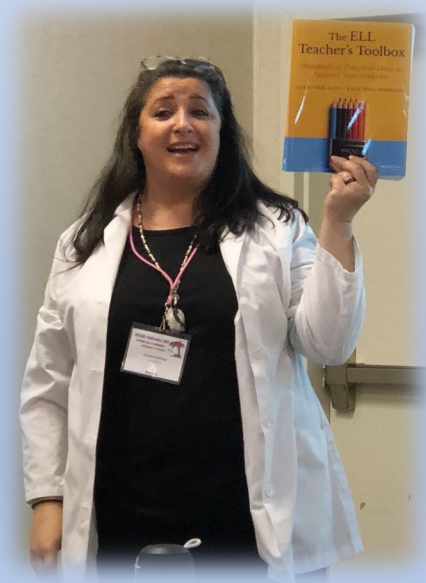
"Every home, every police car, and even the water tower. Gone. My town is completely gone."

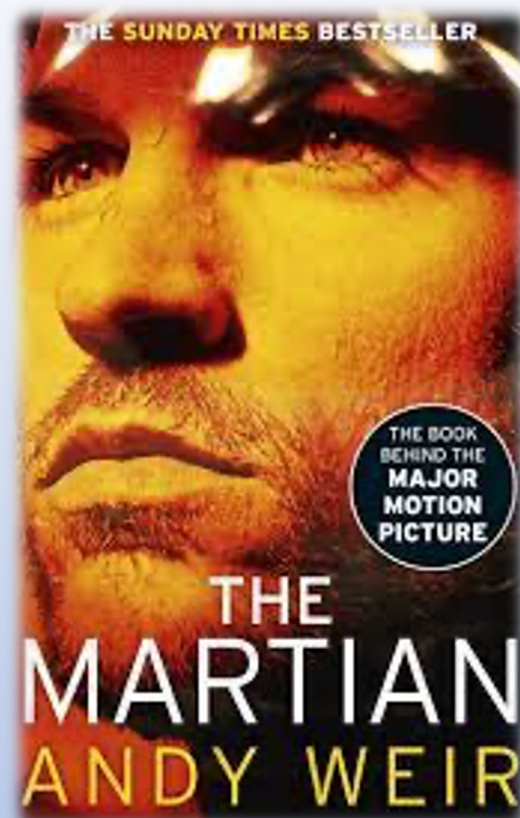
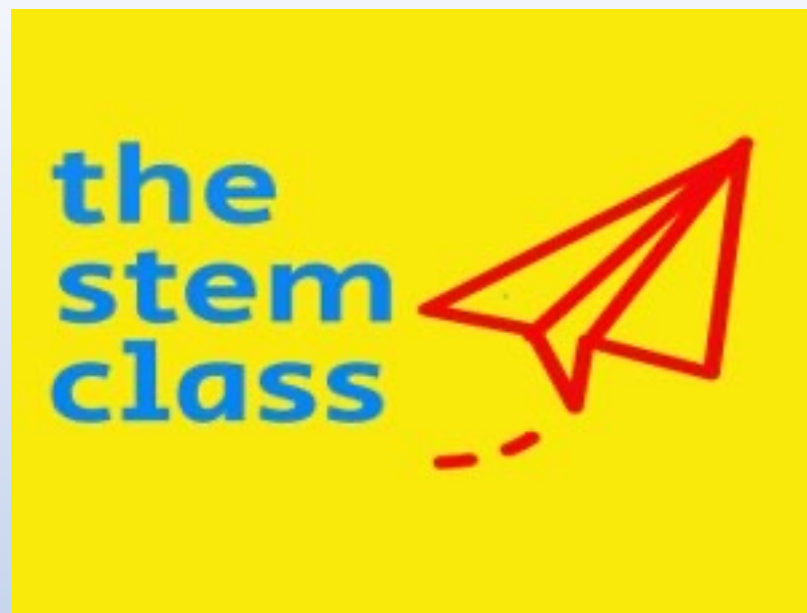
ROUTE 66 PODCAST SCHOLARSHIP PROGRAM



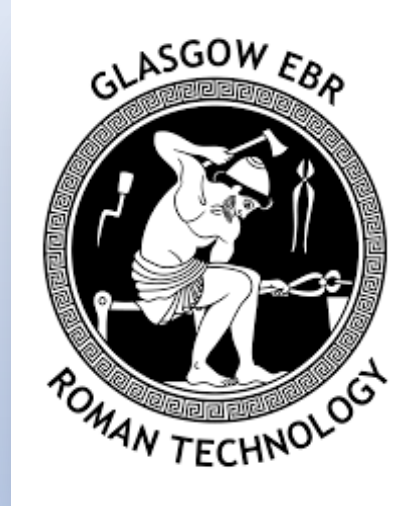
ROUTE 66 SCHOLARSHIP WINNER
DEANNA DEVALVE







LOUISIANA STATE TEACHER OF THE YEAR

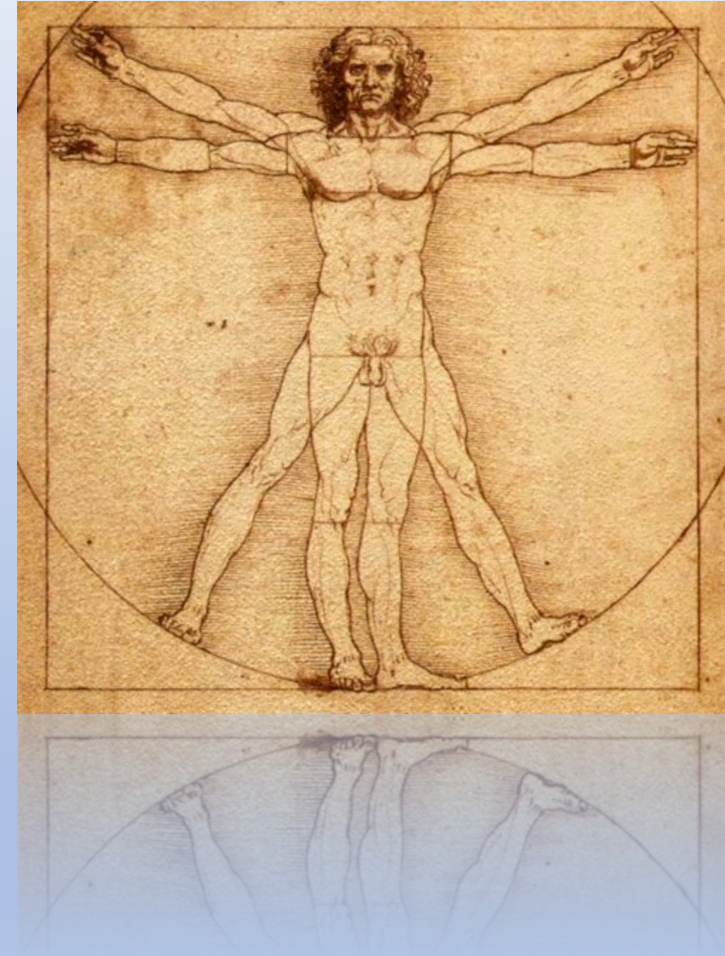
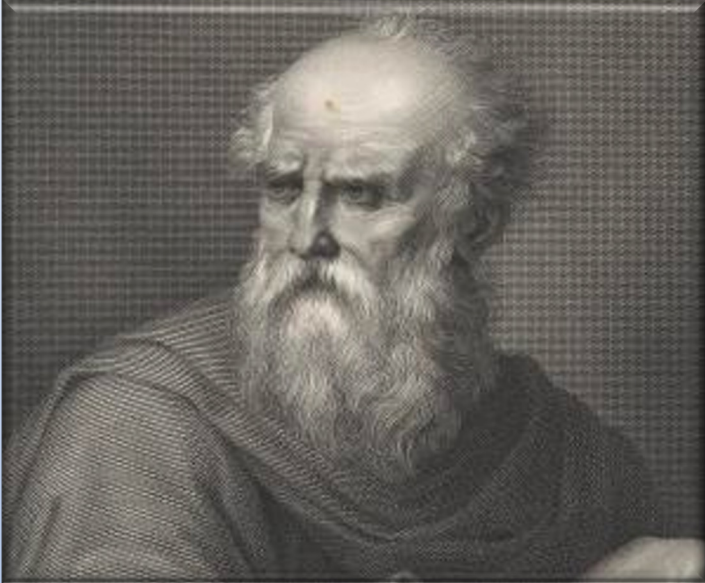


WHAT DID THE ROMANS DO FOR US?

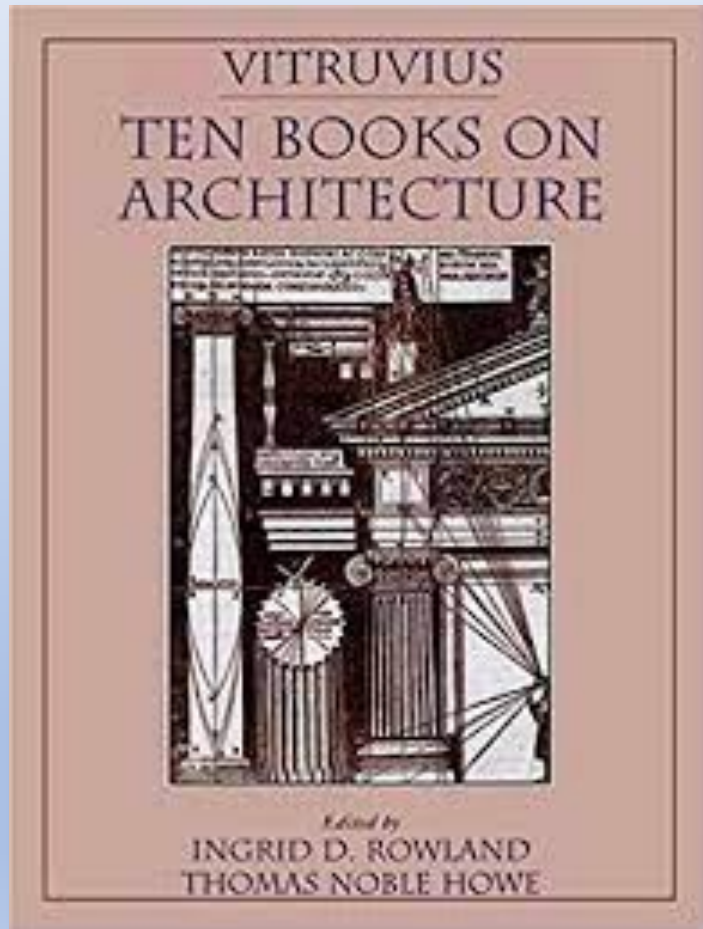


VITRUVIUS

- 50 BC
- Architect
- Military engineer
- De Architecture
- Inspired Da Vinci for Vitruvian Man



VITRUVIUS: TEN BOOKS ON ARCHITECTURE



- Book 1:* Landscape Architecture (City layout, streets)
- Book 2:* Materials (brick, sand, stone, method for building walls)
- Book 3:* Temples (symmetry and human body, columns)
- Book 4:* Temples (doorways, circular temples, alters)
- Book 5:* Public Places (forums, theatres, acoustics, baths)
- Book 6:* Private Houses (symmetry, rooms, foundations)
- Book 7:* Finishes and Colours (floors, stucco, marble)
- Book 8:* Water (moon phases, sundials, water clocks)
- Book 9:* Mechanical Engineering (waterwheel, water screws, catapults)

ROTA

ROMAN VERSION OF TIK-TAC-TOE



Rota Etchings
300 BC

- Rota (Latin) wheel
- Roman poet Avid (The Art of Love) 2CE
- The first player to place three game pieces in a row across the center or in the circle of the board wins

ROTA: STEM CHALLENGE



- Is there an advantage to going first?
- Game Strategy: Placing your piece in the center
- How similar is Rota to tic-tac-toe?
- Can the game ever end in a tie?

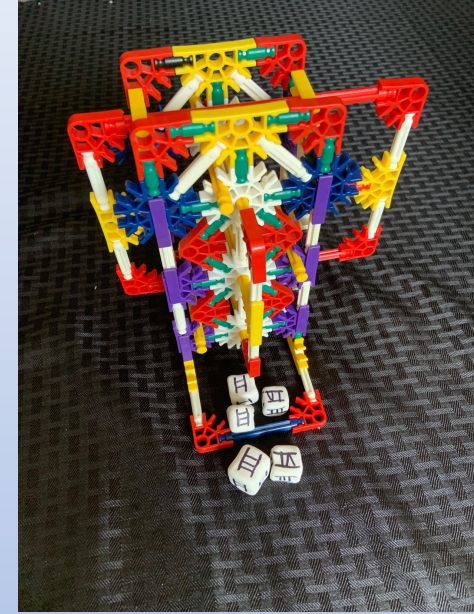
DICE TOWER



Dice Box, 12 AD

- Dice Tower (12th Century)
- Often triggered bells during cascade
- Early dice made of bone and ivory
- Fairness guarantee

DICE TOWERS: STEM CHALLENGE



- Probability and collection of data
- Comparing commercial dice with student made dice
- Rolling in hand vs. Using a Dice Tower
- - add pic of dice tower and leggo

ARCH



- Allowed bigger buildings, longer roads, and better aqueducts
- The coliseum has 240 arches
- Compression without any adhesive

ARCH: STEM CHALLENGE

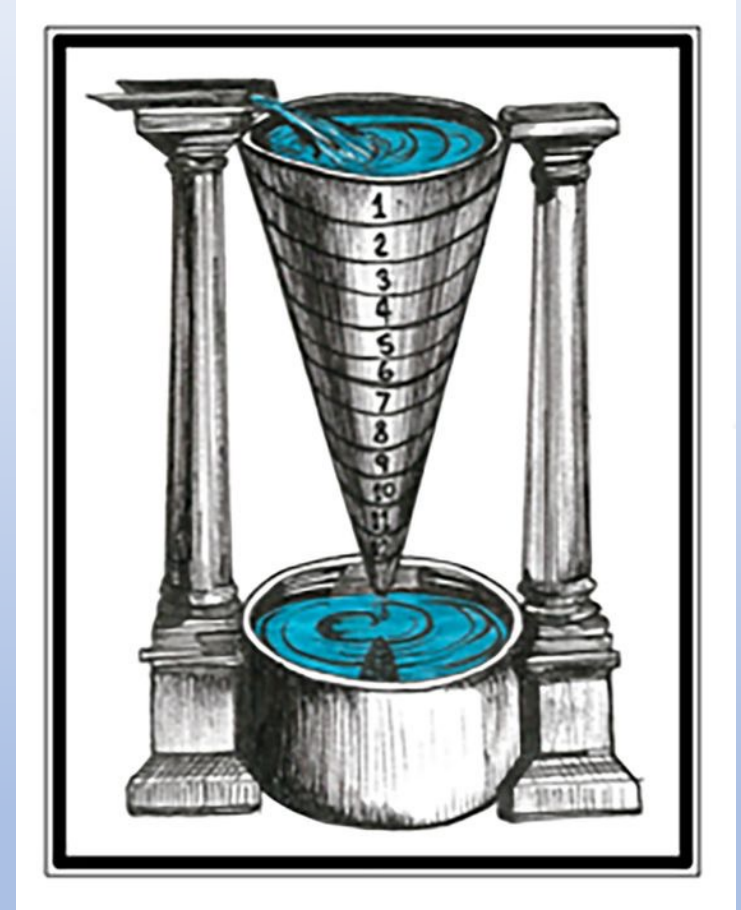


- Arch kits and paper puzzles
- Newspaper arches
- Weight challenges



WATER CLOCK <ADD PICT>

- Roman water clocks did not have seconds or minutes
- Both daytime and nighttime were divided into 12 equal segments



WATER CLOCK: STEM CHALLENGE

- Advance notification of 5-minute time limit
- Completely unknown variable - students provided with materials
- Unknown time given but students can use data sheets and tool kit on “new” supplies
- Use of a siphon



AQUADUCT



- 29 miles above ground/429 miles below ground
- 300 million gallons per day
- Network of 200 different aqueduct extensions in Roman Empire

AQUADUCT: STEM CHALLENGE

- Using water or marble
- Given distance/time
- Measurement of either water or time
- Aqueduct makes a bend or turn
- Water Warning!



WATER WHEEL



- 4000 BC
- Crop irrigation, Grinding up grain, Mining
- Water for community consumption

WATER WHEEL: STEM CHALLENGE

- Number of "buckets" (3,4,5,6)
- Controlling speed of water wheel based on water volume or diameter
- Lifting a weight
- Water measured



CONCRETE



- Volcanic ash key ingredient
- Mixed with aggregate (rocks) and lime
- Underwater adhesive

CONCRETE: STEM CHALLENGE

- Strength test for holding weight across a span
- Building the perfect form



WEAVING



Artwork depicting Standing Loom

- Greek story of Arachnia
- Story told by Roman poet Ovid (43 BCE – 17CE)

WEAVING: STEM CHALLENGE



- Student created designs using Roman colors (red, yellow, purple, green)
- Alternating patterns

WAX TABLETS



- Paper too expensive
- Extensive record keeping

WAX TABLETS



WAX TABLET: STEM CHALLENGE



- Message written using Roman alphabet
- Students depict scene of item learned in class

MOSAICS

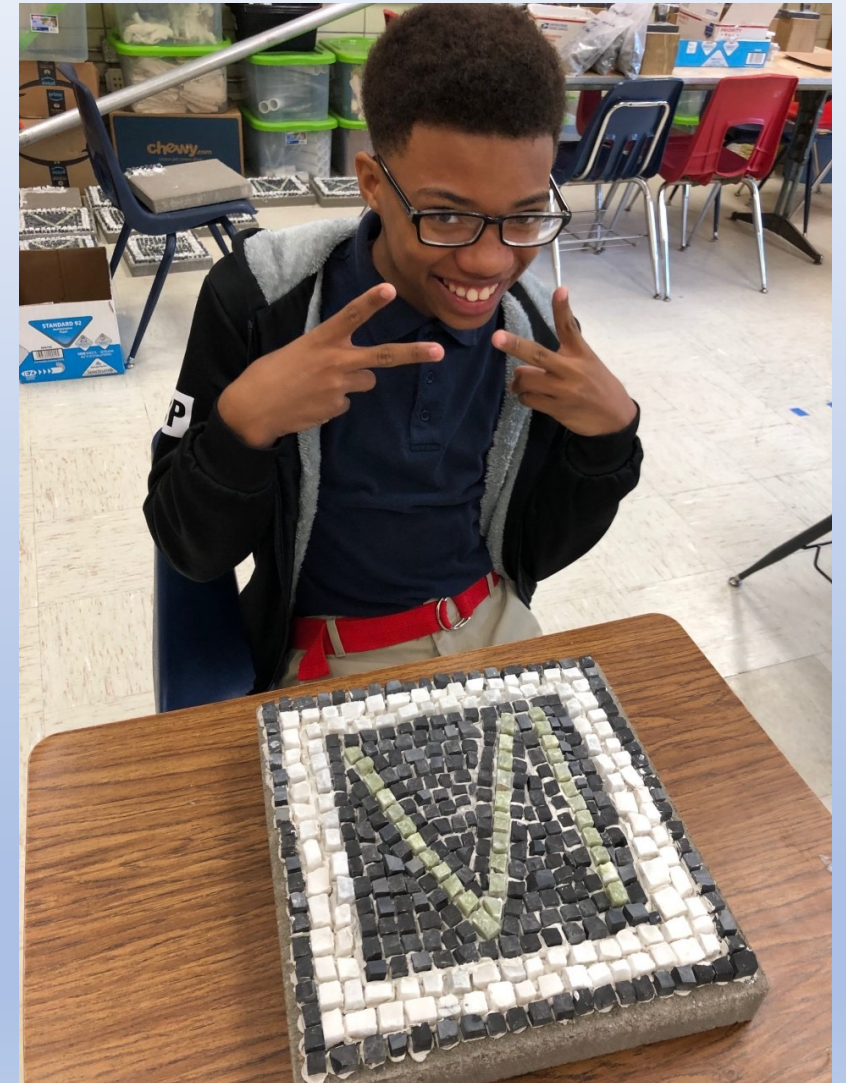


- Sign of Roman status
- Contain 100's or 1000's of tiles
- Depict Roman history and everyday life
- Created by craftsmen not artists (unsigned)
- Themes of geometry, animals, gladiators, mythology, and astronomy

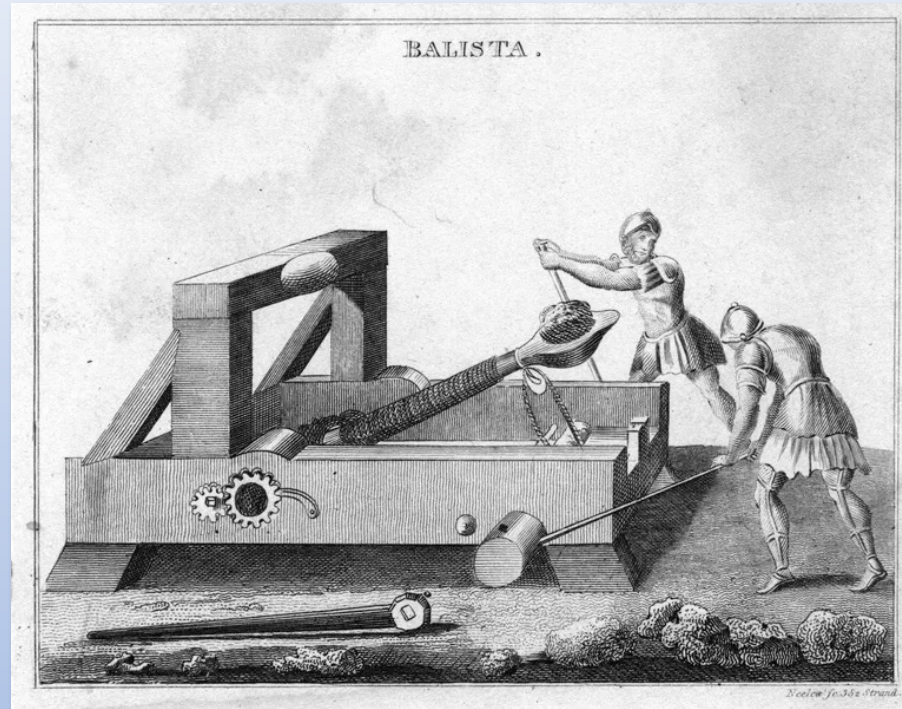
MOSAICS: STEM CHALLENGE



- Mosaic design contest – based on theme, color, event
- Recreation of animals, character, knot from Roman story



CATAPULTS



Catapults

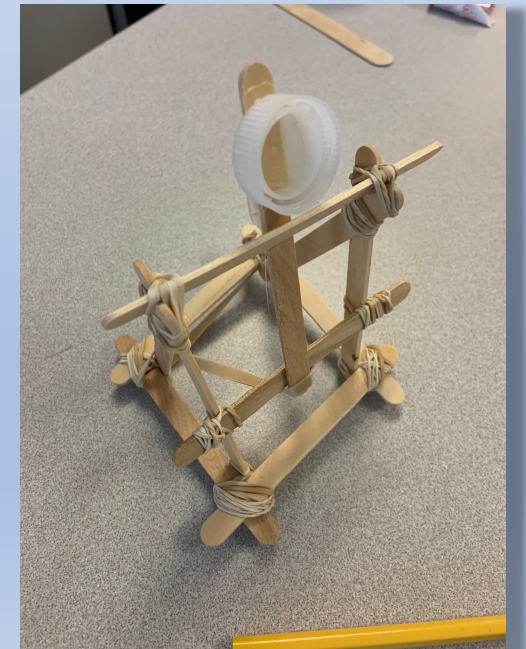
- Name origin (*Greek*) Kata *against* pollein *to hurl*
- Roman Use: 280 – 275 BC

CATAPULTS: STEM CHALLENGE

- Hit a target with percentage of accuracy
- Knock down a wall or tower made of blocks or cups
- Hit an “unknown” target using data collection sheets



THE PLAN STAGE



KAHOOT TIME!



FOR ADDITIONAL INFORMATION

The STEM Class Podcast: www.TheSTEMClass.com

Email: Teachthechildrenabc@Gmail.com

Route 66: www.Route66Podcast.com