BERKSHIRE TREBUCHET PROJECT

Learning physics by launching things

A volunteer, hands-on STEM program built around medieval siege engines.

The Berkshire Trebuchet Project uses trebuchets, catapults, slingshots, and ballistae to make physics something kids can see, build, and measure. Students learn leverage, energy transfer, and projectile motion by building machines, testing them, and changing one variable at a time. Along the way they pick up some history and a lot of teamwork. The program began as an idea in fall 2025 and has gone through several revisions to reach this plan.

Start small, build big

Desktop	Tabletop	Yard-scale	6-footer	Full-scale
6–8 in · 3D-printed	12–18 in · wood kits	3–4 ft · lumber	heavy lumber	10–20 ft · timber
grapes & ping-pong balls	tennis balls & apples	grapefruit	basketballs	🎃 pumpkins!

What we're planning

FALL 2026	Reach out to collaborators; apply for grants
JAN 2027	Siege-engine course for Adventures in Learning at Williamstown Elementary (proposal submitted)
FEB–MAR	Repeat the course at Pine Cobble School (proposed)
WINTER–SPRING	Free library workshops
SPRING 2027	**Pumpkin Providing Partners:** farms, families, and classrooms plant pumpkins
SUMMER	Build larger trebuchets; growing check-ins
FALL 2027	Harvest-season demonstrations and school visits
NOV 2027	🎃 **Pumpkin Smash, ideally joining Second Chance Composting's annual event**

Who we are

Matthew Baya is a Networks & Systems administrator in Williams College's OIT, with 15+ years there. A longtime community volunteer, he led Adventures in Learning Minecraft courses before COVID.

Kaare Francis is a mechanical engineer (UNH) with hands-on fabrication experience. He has taught robotics at Pine Cobble School and is a lifelong Berkshire resident.

> We're both on the board of the **South Williamstown Community Association**, which gives the Berkshire Trebuchet Project deep roots in the neighborhood.

With help from **Michael Richardson** of Puzzled Antique (3D printing). We hope to bring in college faculty and student volunteers too.

Potential collaborators

Williams College (Physics, Science Shop & Center for Learning in Action) · MCLA · Williamstown Elementary · Milne Public Library · Williamstown Rural Lands · Williamstown Historical Museum · Green River Farm · Ioka Valley Farm · Armstrong Farm · Williamstown Farmers Market farms · Second Chance Composting · Whitney's Farm

Williams mathematics professor Steven J. Miller has agreed to advise us. The others are organizations we hope to work with, and we're reaching out now.

All our programs are free for participants, funded through grants, sponsors, and donations.

Want to get involved?

Matthew Baya & Kaare Francis, Berkshire Trebuchet Project organizers

"The best way to learn physics is to launch