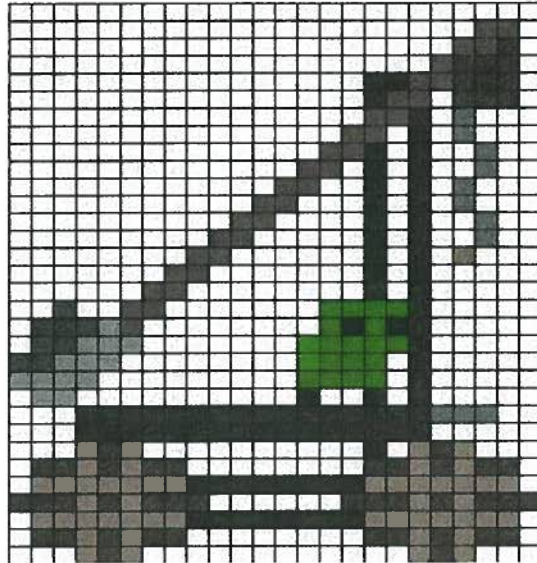


Partners in Physics IV:

An Exciting Catapult Outreach Project



Society of Physics Students
Colorado School of Mines

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Amount Requested: \$300

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Abstract:

Partners in Physics is a fun two-weekend outreach event, aimed at reaching students of all ages. For the first weekend, middle and high school students are taught about catapults and projectile motion. Then for the second weekend, SPS and our “Partners in Physics,” the middle and high schoolers, come back and teach elementary students the basics of catapults and how to build their own small catapults to take home.

The Colorado School of Mines Society of Physics Students would like to reach out to the entire Golden community with a fun-filled catapult outreach project. Our project will collaborate with local middle school and high school students in an elementary school outreach program. The members of our SPS chapter will act as “Partners in Physics” with middle school and high school students to teach elementary school students. We will deliver an exciting science show and workshop on catapults and other contraptions that turn potential energy into kinetic energy.

In March 2013, SPS members will demonstrate catapults to Bell Middle School STEM students, Golden High School, and assorted high school students from the Golden, CO area. We will teach our “Partners in Physics” basic projectile motion and conservation of energy, as well as how to help build the make-and-take demos. SPS members will build a large catapult, and a large trebuchet for demonstration purposes. These projectiles will have adjustable components, like the mass of the counter weight, to demonstrate how energy is transferred and which construction method is more effective.

The following week, SPS will join its “Partners in Physics” from the middle school and high schools to demonstrate the large catapult and trebuchet to elementary school students. The middle and high schoolers will also help us teach the elementary students the basics of catapults and aid in construction of the make-and-take. The make-and-take catapult will be made of popsicle sticks to minimize safety concerns. Having the middle and high schoolers be part of teaching the younger students helps them gain ownership of the knowledge and imparts the idea that physics is fun for older kids not just adults. The elementary school students benefit from the enthusiasm of the older students, and are able to leave the event with their very own demonstration. Finally, this teaching model allows SPS to reach a wider audience of students in the community.

This event strongly correlates to the purpose and goals of the Colorado School of Mines SPS chapter. We have a strong commitment to connect the CSM physics department and students with the community and to garner strong interest in the sciences in young minds. This

event is a key outreach event for our SPS chapter, which has been an annual project for the past four years.

The Marsh White Award monies will be used to purchase materials for the make-and-take demonstrations, as well as the large catapult and the large trebuchet. Our chapter will cover the costs of tax and shipping as well as the costs for snacks provided during the event. Our goal is to reach fifteen middle and high school students, and thirty elementary school students in this outreach effort.

	Item	Cost
Large Catapult	Lumber	\$60
	Bolts, Nuts, Screws, Bearings & Bushings	\$25
	Surgical Tubing	\$20
	Basket	\$5
	Cinder Block Counter Weights	\$2.52
	Steel Rod for Axel	\$8
	<i>Total</i>	<i>\$120.52</i>
Large Trebuchet	Lumber	\$60
	Bolts, Nuts, Screws, Bearings & Bushings	\$25
	Rope	\$10
	Sling	\$5
	Cinder Block Counter Weights	\$2.52
	Steel Rod for Axel	\$8
	<i>Total</i>	<i>\$110.52</i>
Make-&-Take Catapults	Craft sticks (1000 count box)	\$5
	Plastic Cups (for basket)	\$5
	Rubber Bands	\$5
	Counterweights	\$15
	<i>Total</i>	<i>\$30</i>
Projectiles	Water Balloons, ping pong balls, etc	\$34.94
	<i>Total</i>	<i>\$34.94</i>
<i>Grand Total</i>		<i>\$300</i>

Electronic Signatures:

President

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Jennifer Buechler

Vice President of Outreach

Linnea Jones

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