

Fernbrook Farms Environmental Education Center 2021 Winter Upper Level Homeschool Semester Simple Machines on the Farm



Ages 12-14 Years Old (students must be 12 years old by the start of classes)

<u>Class Sessions:</u> Tuesdays 9:30am-11:30am, Tuesdays 1:30pm-3:30pm, Thursdays 9:30am-11:30am, OR Thursdays 1:30pm-3:30pm

Simple Machines on the Farm is an exciting hands-on program for this year's Winter Semester. The class will investigate simple machines with activities that are both indoors and outdoors each week. Students will also look at some of the machines at Fernbrook to see how they help us do work on the farm. The order of the classes may change depending on the weather. Students should always dress for the weather.

Ms. Patty Gurgul

P.S. Please save a skinny shoe box or other small box for one of our classes.

Intro to Simple Machines & Investigating Inclined Planes

January 12th or 14th

What are simple machines and how do they help us on the farm? After going over an intro to simple machines,

we will set out to see how they could help make daily work easier. The students will test out some inclined planes to see which is the most efficient.

Wheel and Axle

January 19th or 21st

Of course, the wheel and axle are particularly important to the farm! As a class, we will explore how the combination of the two simple machines can make far work much easier for us. The students will be building a vehicle which we will be racing down inclined planes.





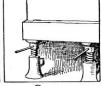


Lever

Wheel and axle

Pulley





Inclined plane

Wedge

Screw

Levers - Part I January 26th or 28th

The students will experiment with building different types of levers in the classroom and then take their machines outdoors to see how we can put them to work.

Levers - Part II

February 2nd or 4th

A catapult on the farm? Yes, indeed! The class will make some of our own and see how successful they are at catapulting different objects!

Pullevs

February 9th or 11th

Have you ever wondered how to get a hay bale up in the loft of the animal barn? We will test some pulley systems in this class and discover the usefulness of this simple machine.

Automaton

February 16th or 18th

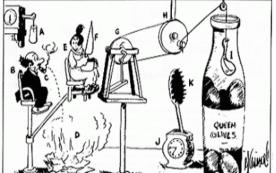
The students will be making an automaton. What is that you ask? We will be making a model that imitates a human movement using a small box, making our own cams, and using some dowels. Each student will be making their own automaton to bring home.

Fish an Olive Out of a Long-Necked Bottle



The Screw and the Wedge February 23rd or 24th

In this class, we will investigate both the wedge and the screw. The students will investigate how these machines work using real life examples. The class will also use part of the class to plan for their final projects.



Final Project – Rube Goldberg Device March 2nd or 4th
For the final class of the semester the students will work together in

small groups to construct a Rube-Goldberg device that contains sever simple machines.



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Name of Child		Age Date of Birth		Male	Female
Address		City	State		
Zip Code		Current Grade Level			
Parent's Name		Parent's Name			
Home Phone#	Work#	Home Phone#	Work#	1	
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Email		Email	•		
Cell#		Cell#			
Employer		Employer			
Emergency Contact (Name, Phone	#, Relationship)				
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• **REGISTER ONLINE**:

On our website at www.FernbrookFarms.com