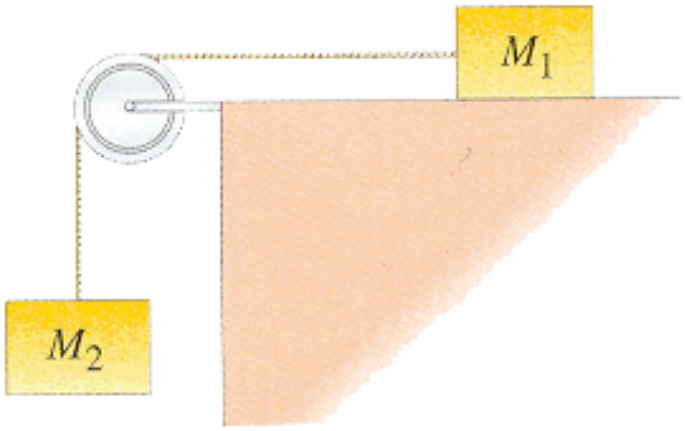
Two-Masses and a Pulley Module



-Based on classic physics problem and developed with student testing

-Aiming for $35-$70 price point

-Covers 4 principles in depth, 6 in total
Inclined Planes, Friction, Pulleys,
Weight Misconception, Tension, Newton's 2nd

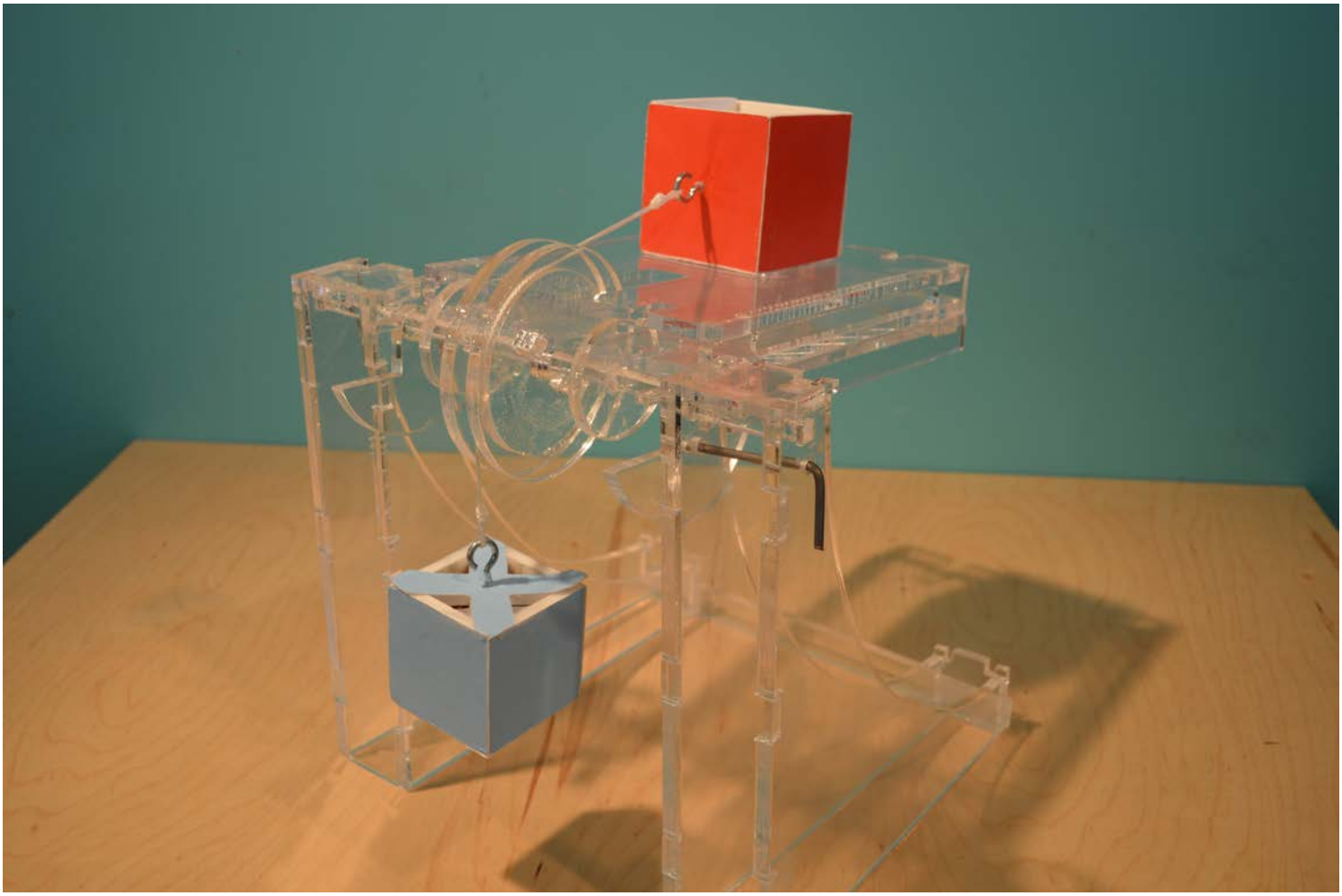
-Designed for front of class explanations

-Comes with a "Suggested Use" guide

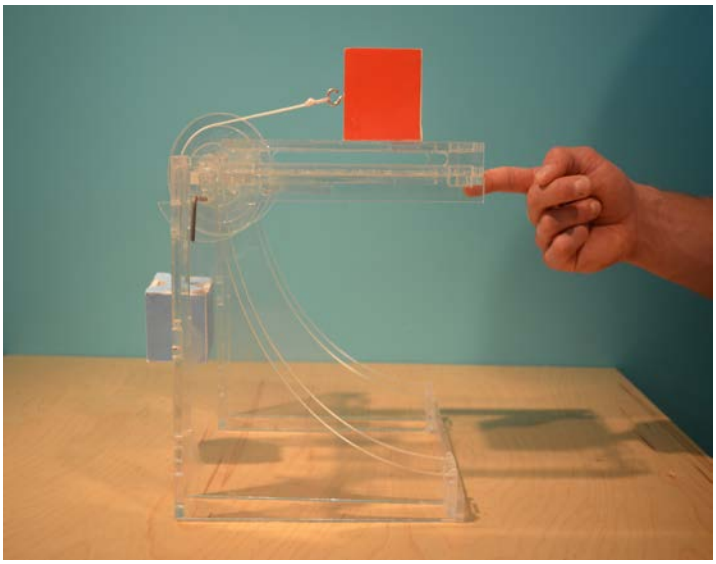
-Laser cut plastic (most likely ABS, acrylic pictured below), shipped as snap in pieces with no required adhesive, assembly time: >15 minutes

-Laser Camm Schematics are free to download

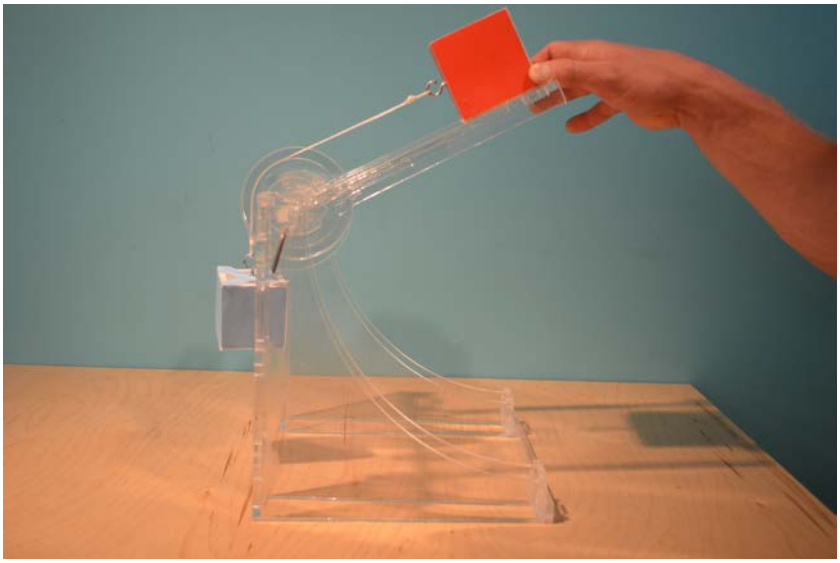
-Following photos are of our 3rd prototype



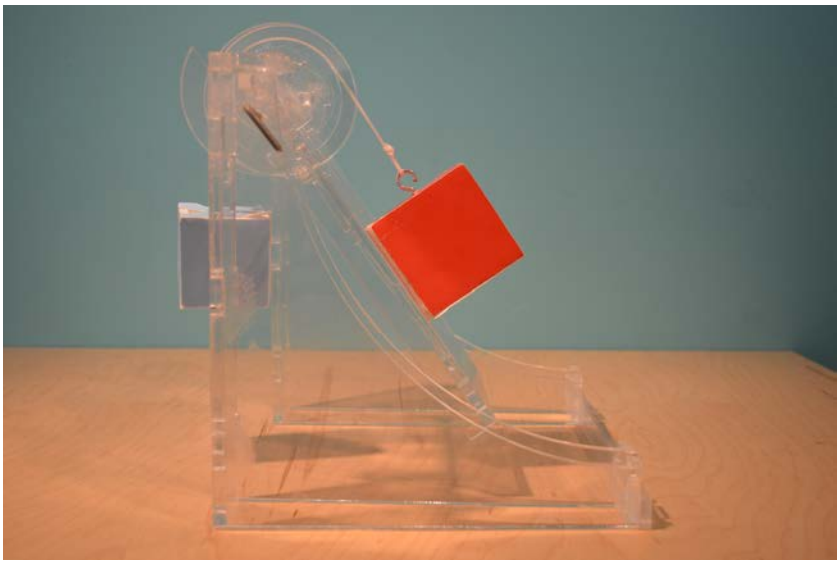
Inclined Plane



0 degree



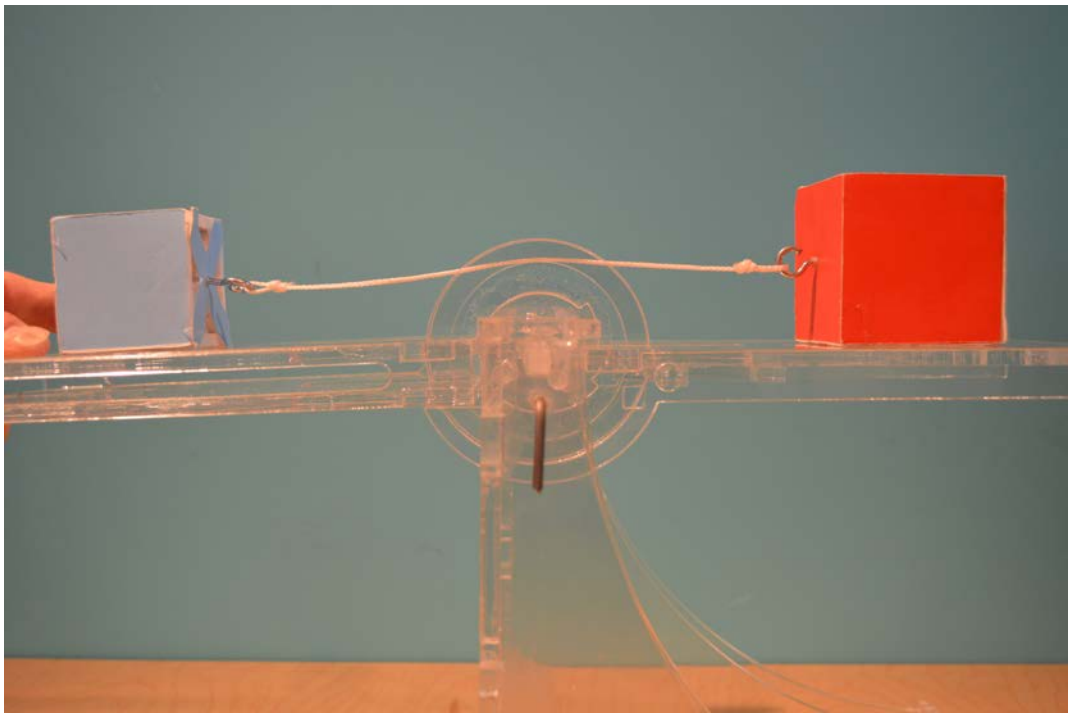
30 degree Incline



45 degree Decline

Pulley Explanation

I discovered that students get caught up on the pulley, specifically the “redirection” of the force happening



Just pull the box up to make it linear, the pulley becomes a non-issue

Not pictured: A block and tackle add-on to help those students who believe normal pulleys lend mechanical advantage

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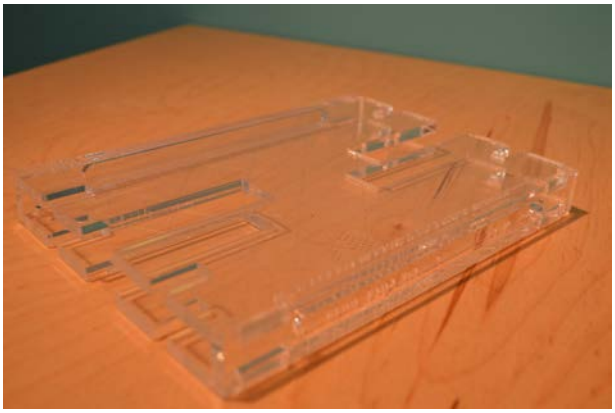
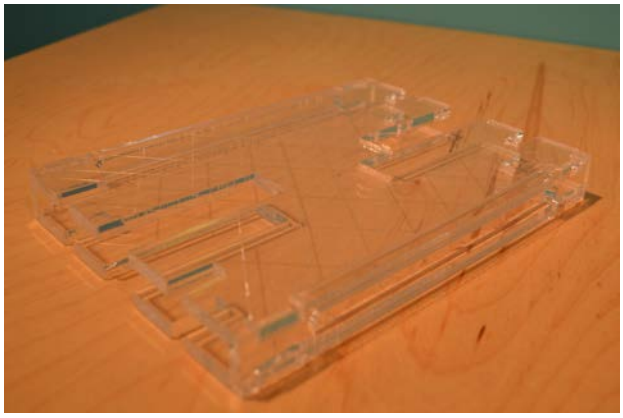
Interchangeable Friction Slates



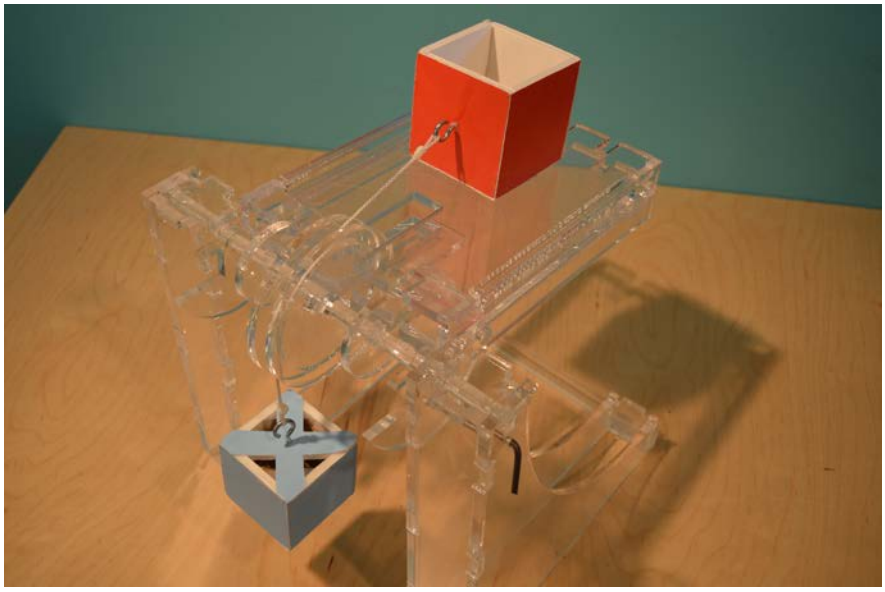
Small coefficient of Friction



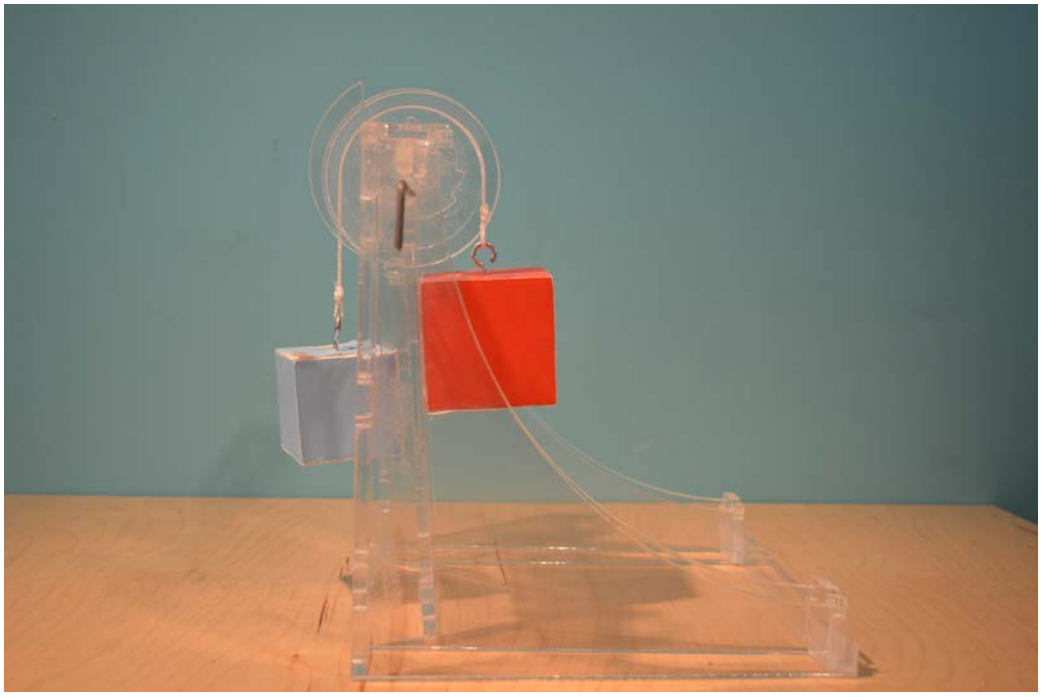
Large coefficient of Friction

Weight Misconception

I would ask students this question:
If the red box had a mass of 100 grams, what is the minimum mass that the blue box needs in order to move the system?



Most of them would respond:
“It has to weigh more”
This is wrong because it is not a gravitational force preventing the system from moving, but a frictional force.



The idea is to confront students with a scenario in which their answer is actually correct, so that they have a contrasting context to cement a correct conceptual understanding.

Feedback

Thank you for taking the time to look through the handout!

If you have the time, I would love any and all feedback.
-What would you improve?
-Would you actually purchase this product? At what price point?
-Anything else?

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fisixed.com (website should be up in around 2 weeks)

Thanks again,
Brogan Miller