

General Information

Grant Number	752
Project Title	Coasting To Success!
Please select the MAIN curriculum area your grant addresses.	Science
Does your grant have a technology component? (Will you have technology equipment, software, etc. in your budget?)	<input checked="" type="radio"/> No <input type="radio"/> Yes
Primary Contact Information	
First Name	Rob
Email	robert.burke@allenisd.org
Last Name	Burke
Phone Number	972-727-0430
Campus	Curtis Middle School
Main Subject	Science - Secondary
Grade(s)	8
I have co-applicants.	<input type="checkbox"/>
Social Media	
Please provide your work-related social media contact information.	
Facebook	
Twitter	
Other (please specify)	

Describe details of the project

Grant Number	752
Campus/Student Information	
Your campus:	Curtis Middle School
Will other campus' be involved/impacted by this grant?	<input checked="" type="radio"/> No <input type="radio"/> Yes
Your grade(s):	8
Will other grades be involved/impacted?	<input type="radio"/> No <input checked="" type="radio"/> Yes
Please select all grades that will be involved/impacted by the grant.	7 8

Project Purpose

What is the problem, need or opportunity that this grant will address? Describe the impact of this project on your students. (500 words or less.)

The student need is to be able to gather, understand, analyze, and apply scientific data about potential and kinetic energy in a fun, easy to understand manner that keeps them engaged. This grant will allow the students to do this by exploring models of rollercoasters. Students will work together to make precise measurements and graphs of data collected using the rollercoaster models. They will also discover the law of conservation of energy as they develop explanations for the motion they observe. This will reinforce the concepts of speed and motion covered in the difficult to understand Physics unit. This will also support STEM concepts as the students research, design, test, and refine a model of a rollercoaster using the CPO Science Kit.

Project Description

How will the project or program be implemented? Describe activities and tasks.
Who is the target population and in what ways will they benefit? (500 words or less.)

The target populations will primarily be 8th grade students, although the equipment will be available for any teacher to use. These students will benefit by being able to view and work with a concept that grabs their attention and makes learning fun. The CPO Science Kit comes with three different rollercoaster tracks, including a straight line section, a curved section, and a loop. During the lab, the students will conduct speed trials as the included marbles work their way through the rollercoaster sections. They will also accurately calculate the amount of potential and kinetic energy at various points on the tracks to understand how energy and physics affect rollercoaster motion. They will then use this data to refine and create their own model of a new, improved coaster. The, the students will be able to compare and contrast their own rollercoaster to real life coasters like the Texas Giant at Six Flags.

Project Summary

Provide a brief summary for use on the Foundation's website and social media. (2-3 brief sentences)

Students will explore models of rollercoasters to see potential and kinetic energy in action. They'll use STEM concepts as they research, design, test, and refine a rollercoaster model to show the Law of Conservation of Energy and the physics behind amusement park rides.

Allen ISD Goals/ TEKS

Which Allen ISD goals/TEKS does this project support? Provide only two or three examples.

Allen ISD cultivates innovation in education that empowers every learner. Students are required to investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches (TEKS 8.6C) Students are also required to compare and contrast potential and kinetic energy (TEKS 6.8A)

Measurement

What specific measurements will be used to evaluate the effectiveness of the project? (500 words or less)

The best measurement will be the student's being able to explain what they are doing during the lab investigation as they are hands on with the equipment and the data. These kits will allow the students to focus on understanding the concept in real time, in a dramatic attention grabbing fashion. Students should see an increase in their higher level thinking skills as they use the concepts learned to create their own rollercoaster model. With a deeper understanding of the scientific concepts, students' scores on unit tests, district benchmarks, and ultimately the STAAR test should increase dramatically.

Teaching Methods

What teaching methods will be used to implement this project? (500 words or less.)

Students will use the kits in a collaborative, group environment consisting of lab partners working together to complete the lab in question. Eventually, as the lab progresses, and students master using the equipment to understand physics and energy, they will connect into the upper levels of Bloom's Taxonomy...creating their own models to solve scientific questions. They will be able to evaluate the data they gather to support or disprove their initial questions. In the end, we want to transform the kids from students following directions during a lab into inquisitive scientists with the tools to effectively ask and answer their own (guided) questions.

Timeline

What is the project timeline and the date of implementation?

The kits will be used following the district pacing calendar, especially throughout the difficult physics unit to reinforce multiple concepts related to energy and motion. Kits will also be used again in the Spring to review material for the 8th grade STAAR test.

Curriculum/System Support

Explain how this idea or project enhances/supports Allen ISD curriculum or existing systems.

This project would enhance/support the 8th grade curriculum by engaging students more in the understanding of one of the more difficult concepts throughout the year. It allows for increased rigor while providing students success and relevance in the field of science. It would enhance students' ability to think critically and design scientific models while collaborating together to collect

and analyze data. All of these items are necessary to be an Allen ISD graduate and would allow students to realize their full potential.

Budget details

Budget Details ** All awarded funds will be available by September of the next school year.

Budget Item	Item Type	Unit Cost	Quantity	Total Cost
CPO Physics Stand	Instructional Supplies or Resources	99.95	7	699.65
CPO Loop Track	Instructional Supplies or Resources	94.95	7	664.65
CPO Rollercoaster Module	Instructional Supplies or Resources	114.95	7	804.65
CPO Straight Track	Instructional Supplies or Resources	89.95	7	629.65

BUDGET TOTAL 2,798.6

Are there any additional funds available for this grant? Campus or District Funds? PTA funds? Let us know if you have or will be seeking funds from other sources to help with this project.

Additional funds? No
 Yes

Signature page and principal contact

Principal Approval Required

Please provide the Name and Email of your PRINCIPAL. (Not your name)

First Name	Last Name	Email Address(Completed)
Sonya	Pitcock	sonya.pitcock@allenisd.org

Applicant Signature

By entering my name below I signify that I understand that if I move within the District and have written the grant myself, I may take the grant with me to my school (as long as it is appropriate for my classes). If I have written the grant as part of a team, I will leave the grant behind with the team. If I leave AISD, I will leave the grant with the school for which I wrote the grant. As a condition of this grant, I will complete an evaluation form provided by the Foundation.

Signature Robert Burke

Date 01/30/2018

Principal's approval form

I certify that this would be a good use of funds for our school and this grant supports the district goals and/or our campus improvement plans. **Do NOT include any identifiers, such as: campus name, your name, teachers name or mascot **

No actions possible.

Comments

We are excited to have the opportunity for additional resources to support a difficult concept for kids.

History and final disposition of application

State Change History

State Change	***** 01/30/2018 07:23:26 Submitted
State Change	***** 02/02/2018 11:51:40 Accepted

Grant Status

Grant Awarded Yes
 No

