



# Rollercoaster Project

Grade: High school

## Overview

Students will be incorporating physics equations to construct a model of a roller coaster that is both ideal and realistic over a month with their assigned international groups. The Vawkr video-chat program will be used to assist students in corresponding with their international groups. The assignment will be completed with groups of 4. 2 partners from each school will make a group.

## Objective

Through this project, students will be applying their physics knowledge to solve a real-life problem: building an ideal and realistic roller coaster. As students interact with their international group members, they will be experiencing diversity and the use of new technology as well.

## Materials

Legos sticks for constructing the model, internet connected computer, Vawkr video-chat program, graphing calculator.

## Procedure

- Assign groups and international groups as well.
- Go over the necessary requirements, equations, and how to use the Vawkr program.
- Hold a meeting with international students on Vawkr to introduce each other and discuss responsibilities.
- Research and decide on what kind of roller coaster you want to create: design/speed/etc.
- Do several calculations and construct your roller coaster model. Calculations can be found in various physics textbooks.

- It will be your responsibility to keep in contact with your international group and to go over your work together.
- Write a report about your researches and experiment procedures and conclusions.

<sup>1</sup>Evaluation/Rubric for the activity

	<b>Excellent</b>	<b>Good</b>	<b>Poor</b>
<b>Understanding and Completion</b>	The student's work clearly shows that he/she has understood the assignment's physic concepts. His/her work contains no mistakes.	The student show an understanding about the material covered, but seems to be confused. His/her work contains minor mistakes.	The student has not understood the class material and the presentation is off topic. His/her work contains numerous minor and major mistakes.
<b>Participation</b>	The student actively participates by suggesting ideas and encouraging others in the group to work harder. The student also keeps in touch with the international students.	The student cooperates well with other classmates and responsibly does the job given.	The student does not show any interest in the activity and is not being helpful to the group.
<b>Model and Report</b>	The model is well done and functions perfectly. The report contains all needed information.	The model functions well, but not as expected. The report contains enough information.	The model does not function properly and the report is poorly done.

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<sup>1</sup> <http://www.teach-nology.com/cgi-bin/teamwork.cgi>