

The Fastest Man in the World: Instructor Guide

Title:

The Fastest Man in the World

Author:

Barbara J. Duch
105 Pearson Hall
Newark, DE 19716
bduch@physics.udel.edu



This work by Barbara Duch is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

As an open educational resource, feel free to modify and distribute this work under the conditions stated by the Creative Commons license. Originally developed as a part of the [PBL Clearinghouse](#) at the University of Delaware.

Discipline:

Physics and Astronomy

Target Audience

Introductory, nonmajors

Keywords

Acceleration, motion, reaction time, speed

Length of Time/Staging

One week

Abstract

This problem introduces students to speed and acceleration.



Date Submitted

8/1/2003

Date Published

8/10/2003

Format of Delivery

The problem has several stages that engage students in identifying racing data on the internet, looking at split time data, graphing and analyzing data.

Student Learning Objectives

1. Sketch graphs to represent the motion of an object and describe motion as represented by a graph.
2. Calculate the speed and acceleration of an object using data (gathered experimentally or derived from graphs).
3. Understand the difference between speed and acceleration.
4. Recognize how reaction time affects split times.

Student Resources

Web-based resources can be found by searching.

Instructor Resources

Web-based resources can be found by searching.

Author's Teaching Notes

This problem can be used to help students learn the difference between speed and acceleration. Students will find racing data for a variety of championship times. Looking at split times also help students to analyze the motion of a runner. You can have students graph the data and recognize where the runner was accelerating, running at constant speed, slowing down.

Labs on reaction time, running and collecting data on their groups can complement the problem. Use of motion detectors, if available, is also helpful.

Solution Notes

This is a very open-ended problem, with no specific solution.