Question 1: Kill the K-cup; Question 2: Water cooling
Larry Weinstein

Citation: The Physics Teacher 53, 306 (2015); doi: 10.1119/1.4917441
View online: https://doi.org/10.1119/1.4917441
View Table of Contents: https://aapt.scitation.org/toc/pte/53/5
Published by the American Association of Physics Teachers

ARTICLES YOU MAY BE INTERESTED IN

Question 1: “Up” — A Fermi question about buoyancy; Question 2: Traffic jams
The Physics Teacher 53, 249 (2015); https://doi.org/10.1119/1.4914573

Question 1: Penny floors; Question 2: Secondhand smoke
The Physics Teacher 55, 249 (2017); https://doi.org/10.1119/1.4978731

Question 1: Shaving time; Question 2: Half-filling the gas tank
The Physics Teacher 53, 378 (2015); https://doi.org/10.1119/1.4928361

Question 1: Battleship recoil; Question 2: Shrinking Earth
The Physics Teacher 54, 504 (2016); https://doi.org/10.1119/1.4965279

Question 1: Indoor flying; Question 2: Cell towers
The Physics Teacher 55, 189 (2017); https://doi.org/10.1119/1.4976672

Question 1: Too many mosquitoes; Question 2: Tug of war
The Physics Teacher 55, 306 (2017); https://doi.org/10.1119/1.4981041
Philip Davidowsky is a science teacher at Watkins Glen High School in Watkins Glen, NY. He received a BA in physics (2013) and a Master of Arts in teaching (2014) from Ithaca College and was the “curious physics student” during this exploration.

Michael “Bodhi” Rogers is an associate professor of physics and the coordinator of the Science Teaching Programs at Ithaca College. He has a PhD in physics and a master’s in interdisciplinary studies with a focus in archaeology, both from Oregon State University. Rogers’s primary scholarly interests are astronomy and physics education research and archaeogeophysics. His recent projects are examining student understanding of the process and products of science in general education science courses using the SCALE-UP model of teaching large enrollment courses, and using archaeogeophysical instruments to locate unmarked burials at historic cemeteries, examine Late Bronze Age cities in Cyprus, and Native American villages in the Finger Lakes Region and Las Vegas, NV. He and his team of undergraduate researchers recently conducted a 3D laser scan of President Lincoln’s Cottage in Washington, D.C.

Ithaca College, Department of Physics and Astronomy, 953 Danby Road, Ithaca, NY 14850; mrogers@ithaca.edu

Larry Weinstein, Column Editor
Old Dominion University, Norfolk, VA 23529; weinstein@odu.edu

Fermi Questions

Question 1: Kill the K-cup
According to KillTheKCup.org, single-use non-recyclable Keurig K-cups “are killing our planet.” How large is the environmental impact of K-Cups?

Question 2: Water cooling
How much more cooling do you get from drinking cold rather than room-temperature water on a hot day? How much do you sweat per day when the ambient temperature is about 35 °C (95 °F)?

Look for the answers online at tpt.aapt.org. Question suggestions are always welcome! For more Fermi questions and answers, see the now available Guesstimation 2.0: Solving Today’s Problems on the Back of a Napkin, by Lawrence Weinstein (Princeton University Press, 2012). DOI: 10.1119/1.4917441