

Case Details

Case Title:

The Bends!

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Date Published:

11/6/2008

Grade Level(s):

Middle School

Subject(s):

Physical Science

Summary:

Two cousins are SCUBA diving in the tropics, but when it's time to head back to the surface for lunch, one cousin swims up to the surface quickly while the other cousin swims slowly. Within a few hours, the first cousin gets really sick while the other is fine. They don't know what made one of them sick, but as the ill cousin's symptoms get serious, they realize they need to do something fast.

Adapted from:

Ram, Preetha (unpub.). The Bends. Conceptualized following a discussion with Dr. Ram Fall 2004 at Emory University.

Suggested Citation:

Turner, B. L., & Shamsid-Deen, K. K. (2008). *The bends*. Retrieved June 03, 2012 from Emory University, CASES Online Web site:
http://www.cse.emory.edu/cases/casedisplay.cfm?case_id=166

Learning Objectives:

1. Analyze the relationships between pressure, temperature and gas volume.
2. Describe Boyle's and Charles' Laws and the Ideal Gas Law
3. Graph the relationships between volume and between temperature and gas volume
4. Analyze the relationship between pressure and solubility of gases
5. Analyze the relationship between depth and water pressure
6. Explore some of the effects that pressure can have on gases in the body and resulting health problems.
7. Identify and describe the symptoms and causes of the bends.

National/State Standards:

Georgia Performance Standards

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and

skepticism in science. (NSES Content Standard A)

S8P1. Students will examine the scientific view of the nature of matter. (NSES Content Standard B)

c. Describe the movement of particles in solids, liquids, gases, and plasmas states.