

Two presentations on "Periodic Table in Everyday Life"

By Jamshid Hassanzadeh

Nov 5, 2010: Pasadena High School Chemistry students (teacher Kevin Wood)

Jan 20, 2011: Blair HS Earth Science students (teacher Jonathon Gardiner, Caltech alum!)

Jamshid Hassanzadeh gave a 35-minute presentation to high school chemistry students at Pasadena High School. Because there are four chemistry classes, the teacher Kevin Wood preferred that the presentation be given at lunchtime, so that any interested students from the four classes could attend. About 40 students attended, despite stiff competition from the very loud "pep rally" right outside the door.

Jamshid opened with a picture of the periodic table and the question "Can you name anything not made of elements?" Some replies included "paper!" "food!" "outer space!" He moved on to other thought-provoking questions such as "Are elements in other galaxies different from those on Earth?" and "How different is our body from the ground?"

He passed around samples of silicon (of Silicon Valley fame) and silica (common sand), to show how a seemingly small change in bonding (from Si to SiO₂) can cause a large change in a material's properties (from the rare and valuable element silicon used as the basis of electronics, to the common everyday mineral silica, of which sand and window glass is made).

Jamshid finished with a demonstration of how you could survive should you find yourself on an Earth-like planet that did not have any liquid water. He put some of the common mineral gypsum into a test tube, heated it over a bunsen burner, and produced water vapor (leaving behind plaster).

Most of the students were engaged throughout the presentation and many stayed on to ask questions.

For the Jan 20, 2011 presentation: Jamshid gave a similar 50 minute presentation to about 40 Earth Science students. Some of the students were engaged and some did not seem to be interested—not too unexpected! The experiment with gypsum on Bunsen burner got more attraction though! There were many questions at the end. He added the calculation "How much water does the plaster-making industry produce from gypsum per year?" and "How does that compare with water consumption per capita?"