

Felsic and Mafic Rocks

I'm a professor.
It was a natural career choice.
All my life I've been **boring**.



Definition and Occurrence

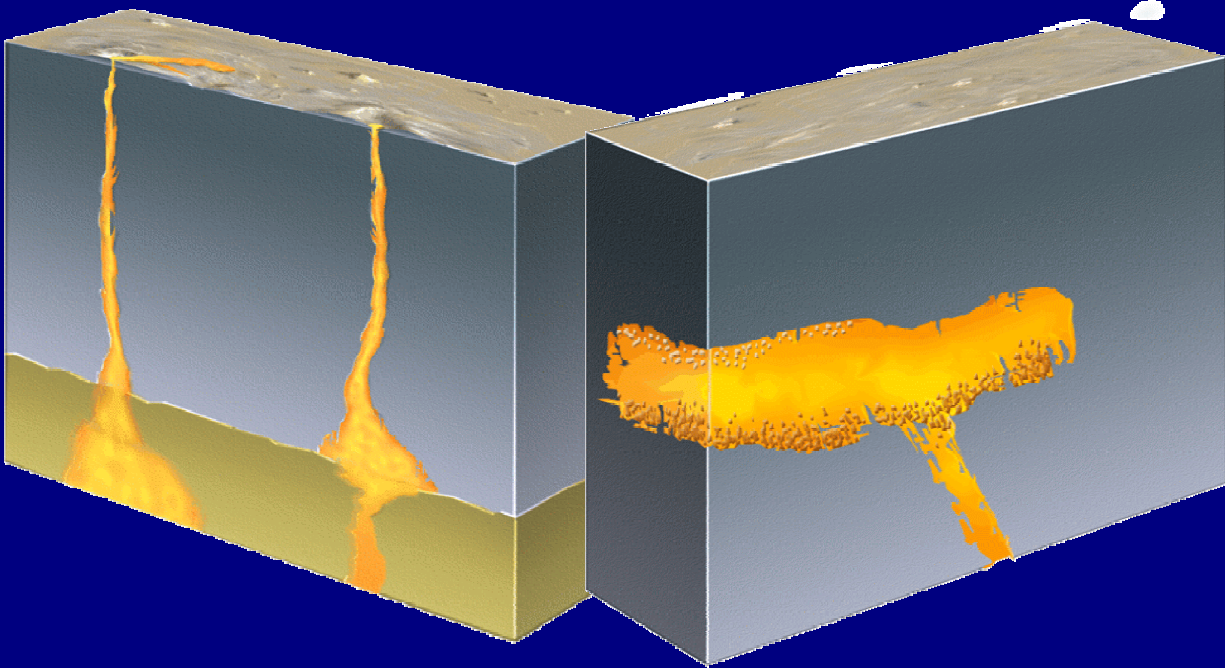
- Felsic rocks are silicate rocks with more than 63% silica content by weight.
- They are light colored and low density.
- They melt at relatively low temperatures.
- Their magma has high viscosity.
- They occur mostly on continents.
- Example: granite.

Mafic Rocks

- Mafic rocks are silicate rocks with less than 40% silica plus much iron and magnesium.
- Mafic rocks are dark and dense.
- Mafic rocks melt at a relatively high temperature.
- Mafic magma has low viscosity.
- Example: basalt

Partial Melting

- Felsic rocks are found mainly on the continents because of partial melting.
- Partial melting occurs when the temperature of a rock is raised to the point where part of it melts but part remains solid.
- Because felsic rock has a lower melting point and lower density, it separates out and forms much of the continents.



Copyright © The McGraw-Hill Companies. Permission required for reproduction or display.

Copyright © The McGraw-Hill Companies. Permission required for reproduction or display.

A cheaper and better alternative

THE TEACHING COMPANY

SHOPPING CART YOUR ACCOUNT GIFT CERTIFICATES LIBRARIES HELP
1-800-TEACH-12 (1-800-832-2412)

HOME COURSES PROFESSORS OUR GUARANTEE ABOUT US FAQ ON SALE SEARCH: GO

BROWSE COURSES:

- NEW RELEASES
- BEST SELLERS
- SPECIAL SET OFFERS
- BUSINESS & ECONOMICS
- FINE ARTS & MUSIC
- HISTORY - ANCIENT & MEDIEVAL
- HISTORY - MODERN
- LITERATURE & ENGLISH LANGUAGE
- PHILOSOPHY & INTELLECTUAL HISTORY
- RELIGION
- SCIENCE & MATHEMATICS
- SOCIAL SCIENCES
- HIGH SCHOOL

"A way to extend an educational experience usually restricted to the young and



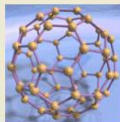
The Joy of Lifelong Learning Every Day™

The Teaching Company brings engaging professors into your home or car through courses on DVD, audio CD, and other formats. Since 1990, great teachers from the Ivy League, Stanford, Georgetown, and other leading colleges and universities have crafted over 250 courses for lifelong learners like you. It's the **adventure of learning** without the homework or exams.

GREAT PROFESSORS >>
How we choose the top 1 in 5,000 professors...

GREAT COURSES >>
Why course satisfaction averages 8.97 out of 10...

GUARANTEED >>
Why we offer a lifetime satisfaction guarantee...



Great Scientific Ideas That Changed the World

Course No. 1120 (36 lectures, 30 minutes/lecture)

Taught by **Steven L. Goldman**
Lehigh University
Ph.D., Boston University

Average Customer Rating ★★★★★ 4.7 out of 5

8 of 9 (89%) customers would recommend the course to a friend.

[Read reviews](#) [Write a review](#)

Why has science so dramatically altered how we live and how we think about ourselves?

With characteristic energy and verve, Professor Steven L. Goldman declares, "One is tempted to speak of scientific discoveries as being the source of science's power to be a driver of social change—that scientists have been discovering new truths about nature, and that the change follows from that. But I argue that it is scientific ideas that are responsible for this change. Ideas are the source of science's power—not discoveries."

And what is the greatest scientific idea of all? For Professor Goldman, that is surely the very idea of science, for as he puts it, "The idea of science itself is an idea that had to be invented."

In **Great Scientific Ideas That Changed the World**, you will explore ideas that—when society has been willing to pursue them—have helped form the foundation of modern life. You'll interpret the term "scientific idea" broadly, so as to include ideas that made science possible at all, as well as ideas that make science immensely powerful.

You will discover there is no sharp distinction between ideas that are classified as scientific and those that are classified as philosophical or mathematical, or even between scientific ideas and political, religious, or aesthetic ideas. Alfred North Whitehead, for example, famously linked the emergence of modern science in

COURSE FORMATS

DVD \$374.95 [ADD TO CART](#)

AUDIO CD \$269.95 [ADD TO CART](#)

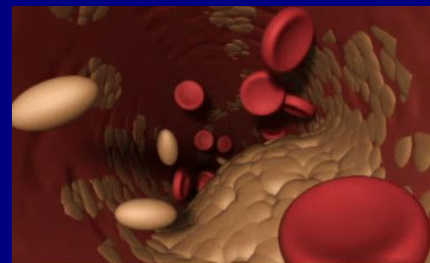
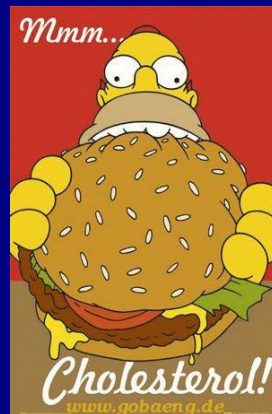
AUDIO DOWNLOAD \$199.95 [ADD TO CART](#)

[FAQ on Downloads >](#) [Test Download Formats >](#)

Should I Buy Audio or Video?

This course works well in any format. Professor Goldman is an engaging speaker and clearly explains the broad spectrum of scientific concepts covered in this course. The DVD version uses text, graphics, images, and maps to reinforce and enhance your learning.

A Third Approach



Separating the meat from the fat







No Stovetop



Kids: DO NOT TRY THIS AT HOME!





My Dog
Ate My
Project!



Summary

- **Fat = felsic**
 - ▶ Light color
 - ▶ Low density
 - ▶ Low melting point
 - ▶ Floats higher (continents)
- **Meat = mafic**
 - ▶ Darker color
 - ▶ Greater density
 - ▶ Higher melting point
 - ▶ Floats lower (ocean basins)



Digital enhancement

