Interesting Sites for Science
Fluids and Materials

Beyond Weather and the Water Cycle

Beyond Weather and the Water Cycle is an online professional development magazine which focuses on preparing elementary teachers to teach climate science concepts while also integrating inquiry-based science and literacy instruction. The project draws on research showing that an integrated approach can improve student achievement in science, as well as in reading comprehension and oral and written discourse abilities.

http://beyondweather.ehe.osu.edu/

The story behind the science

Thirty stories spanning five disciplines help students explore the development of key science concepts through the eyes of the scientists who were involved. Supplemental resources are provided for teachers to help achieve the greatest impact from the stories.

http://www.storybehindthescience.org/

Implosion of a 55 gallon steel drum

Using steam and a garden hose. Impressive.

http://www.wimp.com/steeldrum/

Wind

An invisible, ancient source of energy surrounds us—energy that powered the first explorations of the world, and that may be a key to the future. This map shows you the delicate tracery of wind flowing over the US right now.

It is realtime by the hour and it is also cool.

http://hint.fm/wind/

Perpetual Ocean

When poets and storytellers speak of the ocean they are often struck by its constant, restless motion, from the rolling deep of the open sea to the crashing coastal surf. Even the most casual observer is

impressed by the swirl of tides or the march of waves against the shore. But few note the silent, subtle passage of currents. Yet the power of currents to move and control the seas is unmatched.

http://www.youtube.com/watch?v=xusdWPuWAoU

Geologic Time Scale condensed in a day

http://www.geology.wisc.edu/homepages/g100s2/public_html/Geologic_Time/Time_Clock.gif

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The Periodic Table of Videos

I know this is a repeat but the videos are cool.

http://www.periodicvideos.com/

Scientists discover new clue to the chemical origins of life

Organic chemists at the University of York have made a significant advance towards establishing the origin of the carbohydrates (sugars) that form the building blocks of life.

Working with colleagues at the University of Nottingham, they have made the first step towards showing how simple sugars – threose and erythrose – developed

http://www.york.ac.uk/news-and-events/news/2012/research/origins-of-life/

Symphony of Science - The Greatest Show on Earth! - The Greatest Show on Earth!

A new Symphony of Science video featuring David Attenborough, Bill Nye, and Richard Dawkins.

http://symphonyofscience.com/videos.html

You can download all the audio tracks to the Symphony of Science videos for free at http://melodysheep.bandcamp.com/album/symphony-of-science-bundle-v11 . Just click the "Buy Now" button and enter 0.00 in the name your price box then click "checkout now". On the new page click "Download" and save the zip file to your computer.

Hybrid Silkworms Spin Stronger Spider Silk

Research was published this week showing that silk produced by transgenically-engineered silkworms exhibits the highly sought-after strength and elasticity of spider silk. This stronger silk could possibly be used to make sutures, artificial limbs and parachutes

http://newsinfo.nd.edu/news/28161-hybrid-silkworms-spin-stronger-spider-silk/

Virtual Experiment: Viscosity Explorer

The Viscosity Explorer lets you see how viscosity varies from liquid to liquid and how temperature affects viscosity. You can

•compare two different liquids with each other

•test the same liquid at two different temperatures

http://www.planetseed.com/files/flash/science/lab/liquids/visco_exp/en/viscosity.htm?width=620&height=500&popup=true

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Talk about Floating On Air

Check out the world's lightest material: 0.85 mg/cc

http://lightyears.blogs.cnn.com/2011/11/23/check-out-the-worlds-lightest-material/?hpt=hp_bn2

'Brinicle' ice finger of death

A bizarre underwater "icicle of death" has been filmed by a BBC crew. With timelapse cameras, specialists recorded salt water being excluded from the sea ice and sinking. The temperature of this sinking brine, which was well below 0C, caused the water to freeze in an icy sheath around it. Where the so-called "brinicle" met the sea bed, a web of ice formed that froze everything it touched, including sea urchins and starfish.

http://www.bbc.co.uk/nature/15835017

The Properties of Water

http://www.youtube.com/watch?v=Wnx9thXySGw

The "Dance Your Ph.D." Contest

The dreaded question. "So, what's your Ph.D. research about?" You take a deep breath and launch into the explanation. People's eyes begin to glaze over…

At times like these, don't you wish you could just turn to the nearest computer and show people an online video of your Ph.D. thesis interpreted in dance form?

Now you can. In these short films, doctoral students interpret their research to a dance.

2011 Winners

Physics - Microstructure-Property relationships in Ti2448 components produced by Selective Laser Melting: A Love Story

http://vimeo.com/30299036

Instant Ice Crystals - The Secret Life of Ice

Dr Gabrielle Walker and Dr Andrea Sella investigate the molecular make up of ice crystals. They use supercooled water to create a mass of ice crystals instantly and discover why water expands as it freezes into ice.

http://www.youtube.com/watch?v=3Qasw7lb2UM&sns=fb

Ice Formations with Daily Freeze/Thaw Cycles

In the middle latitudes and at higher elevations in the lower latitudes, many places experience diurnal freeze/thaw cycles. This can lead to some fantastic ice crystal formations.

This article and pictures are by James R. Carter, Emeritus Professor of Geography-Geology, Illinois State University

http://my.ilstu.edu/~jrcarter/ice/diurnal/

Dissolve My Nobel Prize! Fast!

It's 1940. The Nazis have taken Copenhagen. They are literally marching through the streets, and physicist Niels Bohr has just hours, maybe minutes, to make two Nobel Prize medals disappear.

http://www.npr.org/blogs/krulwich/2011/10/03/140815154/dissolve-my-nobel-prize-fast-a-true-story

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Science360 News

News from wherever science is happening, including directly from scientists, college and university press offices, popular and peer-reviewed journals, dozens of National Science Foundation science and engineering centers, and funding sources that include government agencies, not-for-profit organizations and private industry.

You can subscribe to a daily email blast for a one-stop shop source of science news.

http://news.science360.gov/files/

Free Science Videos

Over 600 Free Science Videos (Biology, Chemistry, Physics) from Brightstorm Science. Science help with teachers explaining concepts and sample problems.

http://www.brightstorm.com/science/

Finding Your Science

Finding Your Science is a National Science Foundation video series that's all about science passion, perspective, and inspiration.

http://science360.gov/series/Finding+Your+Science/721b999b-1b3f-485a-aa29-4640e66f3fe0

Laminar Flow Video

This one always seems like magic to me. The Reynolds number R is the dimensionless combination:

$$R = \frac{\rho v R}{\eta}$$

in which ρ is the density, v the speed of the fluid, R the size of the flow, and η the viscosity. When $R \leq 1$, friction dominates inertia and the fluid flows in layers (laminar flow).

Here we are using corn syrup which has a viscosity of 5 (Pa s); its viscosity is 5000 times that of water, and the Reynolds number R is less than unity.

http://www.dump.com/2011/09/06/laminar-flow-video/
