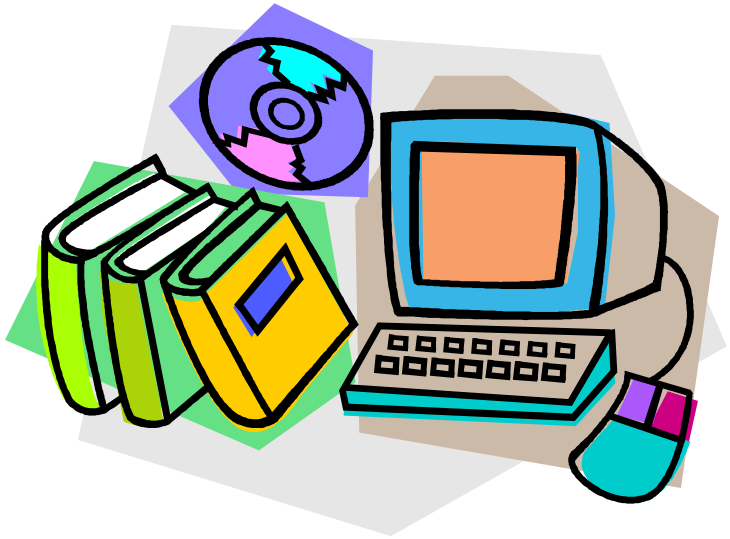
Science Spotlight: Online Resources



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K8 Science Update @ WIU

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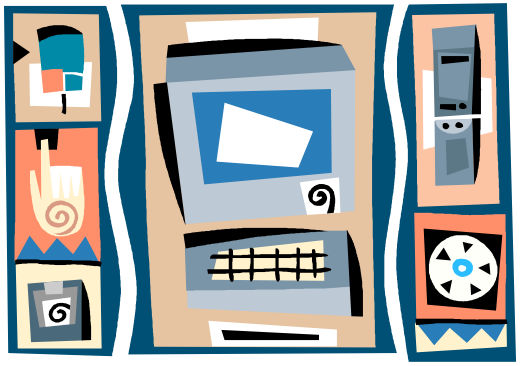
Links are available at
http://sciencespot.net/Pages/scienceonline.html

Online Resources for Learning

- **Length**
  - Mini labs/simulations - 15 minutes or less
  - Games - 1 or more class periods
- **Technology**
  - Complete learning units vs. integrated with classroom activities
  - Whole group instruction vs. independent activities
- **Engagement**
  - Fully engaged vs. limited engagement
  - Focused on student learning
- **Ability Levels**
  - Special education or special needs
  - Enrichment activities



Physics

Infinite Potential

Explore energy-related concepts with these modules from the JASON website.

EdHeads – Simple Machines & Compound Machines

Learn about simple and compound machines using these interactive games. Also check out Crash Science.

Also available …

Simple Machines worksheet

Science Spot: Simple Machines Links

Coaster Creator (JASON)

Learn the physics behind roller coasters by creating a thrilling ride!

NEW

http://www.funderstanding.com/coaster

Amusement Park Physics

Explore the physics behind some of the most popular amusement park rides.

Other sites …

Shockwave Physics
Nobel Prize – Physics
Junkyard Wars Games
Energy Quest
Electro City
iknowthat.org Optics
Exploratorium Online
Little Shop of Physics
FOSS Web Activities

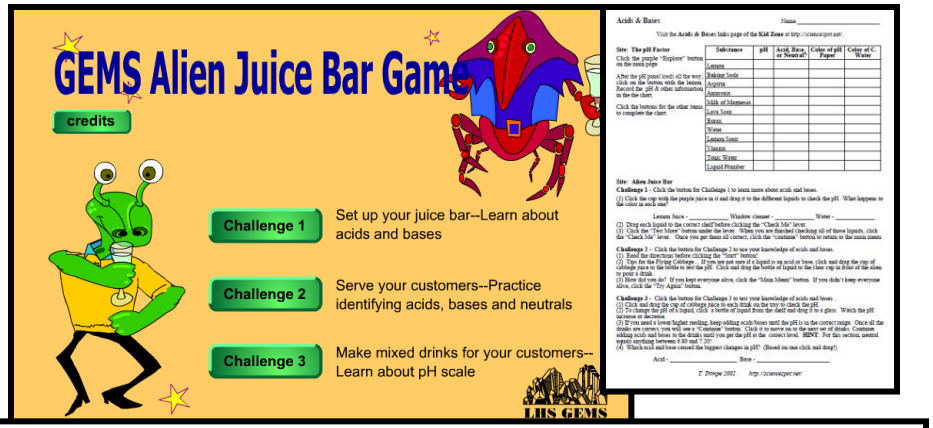
F Flourine
Atomic Number: 9
Atomic Mass: 19

Chemistry

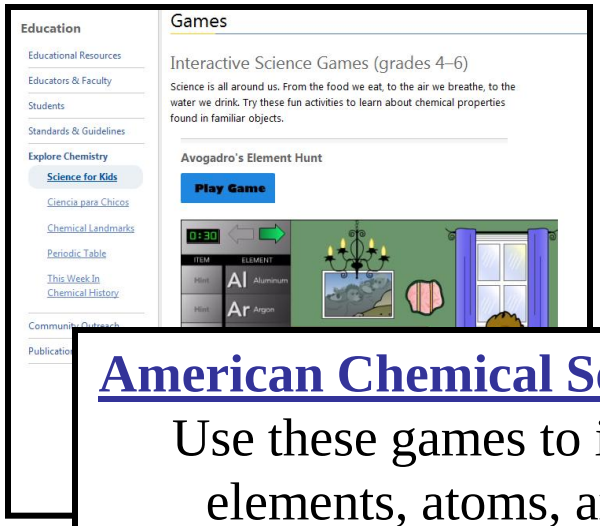
N Nitrogen
Atomic Number: 7
Atomic Mass: 14.01

Toxic Mystery

Learn about toxic substances that can be found in a home.



Explore acids and bases with this activity from LHS Gems.



American Chemical Society Games

Use these games to investigate elements, atoms, and more!

Other Chemistry Links

ZOOM Kitchen Chemistry
ChemBalancer
Balancing Equations
Strange Matter
IPPEX Online – Matter
PhET Simulations
Paul's Quest (Polymers)
JLab Games & Activities

Earth Science

Monster Storms

Students learn about hurricanes as they analyze satellite images and storm data to predict the path and magnitude of an approaching storm. Check out their great curriculum resources.

EdHeads – Weather

Challenges students to report the weather and develop a forecast.

Other weather sites …

Discovery Channel Tornado

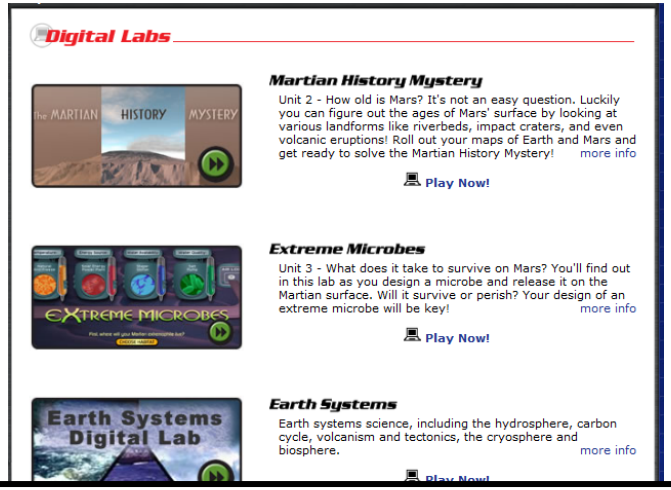
Scholastic Interactive Weather Maker

Weather Flash

Nat Geo Kids Wildest Weather

Tectonic Fury

Explore plate tectonics, rocks, and minerals with digital labs from this series.



Mysteries of Earth & Mars

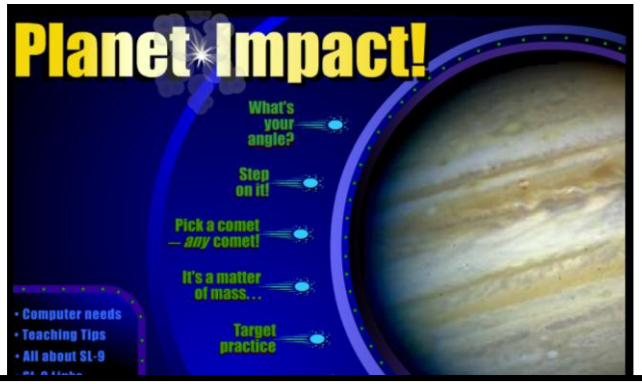
Explore the history of Mars and see how it compares with Earth

Other Earth Science sites …

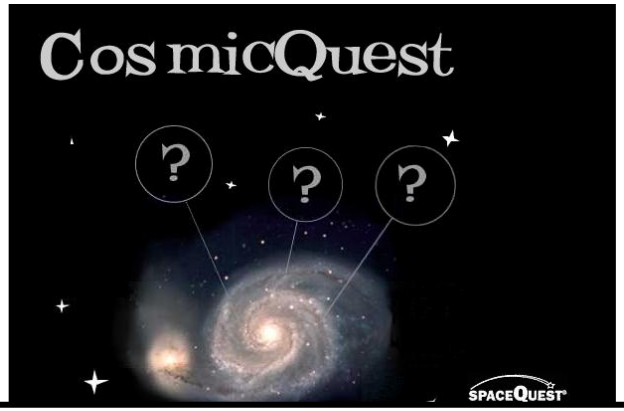
Learner.org Volcanoes
PhEt Simulations for Earth Science
Ology – Earth Science
Ology – Paleontology
Earthquakes for Kids (USGS)
Earthquake Simulator
Virtual Volcano
Extreme Geology Challenge

Astronomy

Students find a planet and develop it for human habitation.



Students investigate gravitational forces involved in a comet impact.
Also check out the other Amazing Space adventures!



Students can design a Space Station or join an expedition to the North Pole.

Other links for Astronomy …

NASA Kid's Club
NASA Interactive Features Archive
Explore the Solar System
Planet 10 – Solar System
Search for ET
Ology – Astronomy
Smithsonian – Sizing Up the Universe

Life Science: Ecology & Biology

Operation Resilient Planet

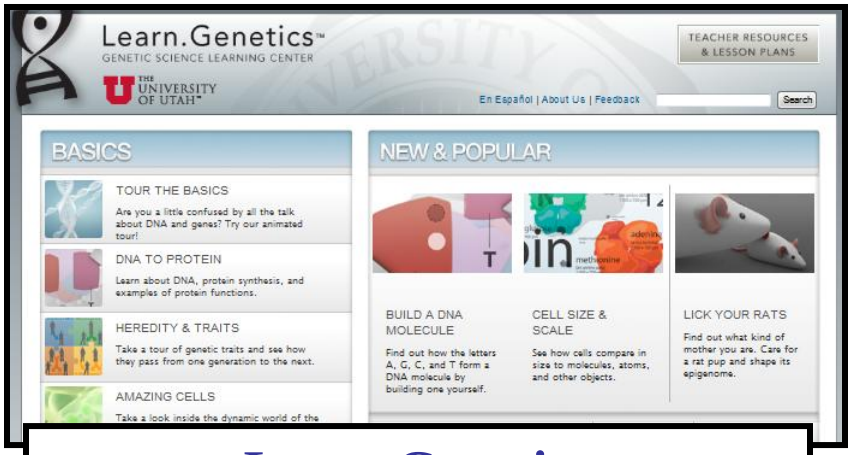
Students join science expeditions with practicing researchers and explorers to learn about ecology and the environment.

ARKive

This site offers online games and learning resources for an assortment of biology topics.

Other life science sites …

Great Plant Escape
Field Museum – This Old Habitat
A Walk in the Woods
Nab the Aquatic Invader
Shedd Aquarium Interactives
Ology – Biodiversity
Microscope Links
Secrets @ Sea
Shepherd Software
Virtualfishtank.com

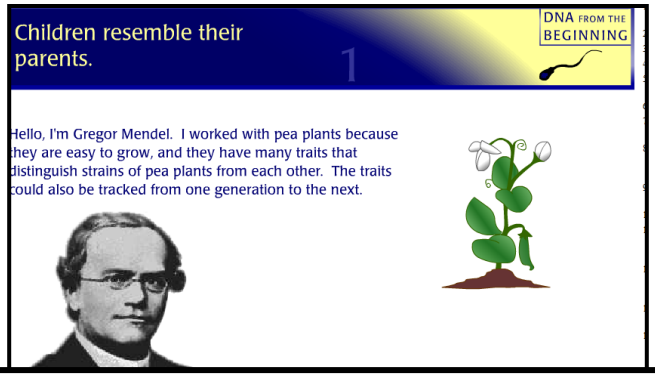


Learn Genetics

An excellent site for students to learn about DNA with informative articles and online activities.

Nobelprize.org

Check out all the medicine-related activities available on their website.



DNA from the Beginning

This site provides genetic information along with a variety of animations and problems to help reinforce student learning.

Other games & activities for genetics…

GEEE in Genome
Bugsville (Download)
Dragonfly TV Dog Breeding
Rigglefish
DNA Workshop
Eye of the Donkey (PCR)
Ology – Genetics
Microscope Links

N-Squad

Students learn about the effects of alcohol on the human body as they work with the forensic scientists to solve a mysterious death. Teaching materials are also available.

Episode 1: What caused the crash?

Topics: Alcohol, its path through the digestive system, and its affects on the liver

Episode 2: Is Dr. Bryce Dead?

Topics: Absorption, distribution, and elimination of alcohol, BAC, BAC vs. intoxication, gas chromatography

Episode 3: Can you solve the case?

Topics: Factors that influence alcohol use, neurons (structure and function), brain (regions & functions affected by alcohol), teen vs. adult brains; alcoholism; DNA profiling

Reconstructors

Challenge your students to these three cases to help them learn about the helpful and harmful drugs. Teaching materials are also available for each series.

A Plaguing Problem

Five episodes exploring history and biology of pain relievers

Nothing to Rave About

Three episodes investigating the effects of club drugs on the body systems

Uncommon Scents

Three episodes exploring toxic vapors and their effects on the body systems

Check out the mission logs, classroom activities, pre/post tests, & other resources for each mission.

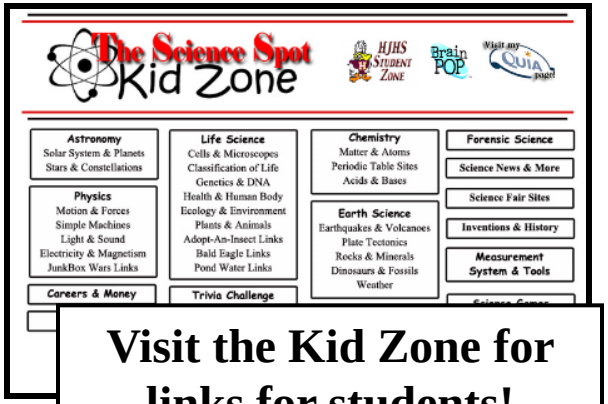
MedMyst

Students learn about infectious diseases and the scientific method as they explore the mysteries available in this module. Don't miss the "for Teachers" area!

CSI Web Adventures

Complete your rookie training and then use your knowledge to solve two cases. Check out the Educators' Guide in the Fun Stuff area along with the Online Activities.

Worksheets for the CSI Web Adventures on the Forensic Science page of http://sciencespot.net/



Visit the Kid Zone for links for students!

Outbreak at Waters Edge

Students investigate an outbreak and determine its source to prevent others people from getting sick.

Buffet Busters

Students are introduced to concepts related to food and waterborne infectious diseases as well as basic principles of epidemiology.

Other sites …

Immune Attack - Players defend a human against bacterial infection

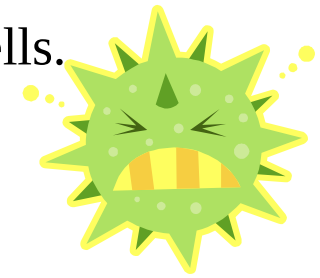
Science Pirates - Food safety knowledge

Aspire - Anti-smoking information/games

Quest for the Code – Asthma-related information

Remission - Players use a nanobot to help the body fighting cancer cells.

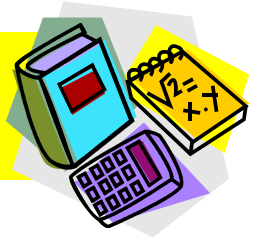
BlueKids.org – Games for health-education and personal safety



HHMI BioInteractive - http://www.hhmi.org/biointeractive/

Biology-related interactives and virtual labs

Math Resources



Shodor Interactivate – A large collection of math simulations and interactive activities for every math topic!

National Library of Virtual Manipulatives – One of the best resources for computer-based simulations and tutorials.

NCTM Illuminations – Another great resources for quality math games!

Labyrinth - Math-based puzzles and narrative in which students work to find their lost pet.

Academic Skill Builders – A variety of math games that can be used on a computer or with an Internet connection to a Wii.

Manga Math Games - A collection of free math games for middle and high school students.

Math Playground – Over 15 manipulatives for you to use with your students.

BBC Math Games Wheel – A collection of 12 fun math games that your students will enjoy!

Create-A-Graph – An easy-to-use online tool to make an assortment of graphs!