

The Rochester City School District (Rochester, NY) Librarians formed a Collegial Circle to research recommended websites for Science research and study for K-12.

This is a compilation of their findings.

### **Miscellaneous:**

These sites are good, general sites with multiple subjects available. Most have educator links as well as general searching.

- NetTrekker <http://school.nettrekker.com/frontdoor/>
- Enchanted Learning <http://www.enchantedlearning.com/Home.html>
- Kathy Schrock <http://school.discovery.com/schrockguide/>
- Smithsonian <http://smithsonianeducation.org/> From the Smithsonian Institute. Click on Educators, Families or Students. Educators section includes lesson plans and materials for all subject areas.
- Discovery.com <http://www.discovery.com/>
- Fact Monster <http://www.factmonster.com/> Click on the Science link for environment, body, animals, inventions, astronomy and space, weather, food, general science, computers and the internet, transportation and an interactive periodic table.

[Thinkfinity.org](http://Thinkfinity.org)

[NSDL.org](http://NSDL.org) [nsdl.org](http://nsdl.org)

[DLESE.org](http://DLESE.org) [dlese.org](http://dlese.org)

Chemistry Websites Carlos Guzman Jefferson High School

**Grade Level: 9-12**

### **Relevant (High School) Chemistry Resources on the Web**

ChemistryCoach.com provides excellent High School Chemistry Resource Web Sites for high school students. Do you need to view a Periodic Table? It's here! Want to know the

chemistry of igneous rocks? You will find that here! You can get tutorials, laboratory tests, and a list of science publications. If you need a Glossary of chemistry terms, there are several versions from A to Z. All the help you need for learning high school chemistry can be obtained right here.

**Topic:** Chemistry--Study and teaching, High schools--Canada

**URL:** <http://www.chemistrycoach.com/high.htm>

### **ScienceGeek.net**

**Grade Level:** 6-8 9-12

The resource section of this site by a chemistry teacher has information and links helpful to high school chemistry students. Many printable versions of the Periodic Table of Elements are available to download. The links library offers links to many other chemistry resources as well as links to biology, physics, astronomy, and other academic area resources. You will also find links to freeware chemistry programs. An additional resource called Science News has science headlines from around the world.

**Topic:** Chemistry, Science, Science--Study and teaching

**URL:** <http://www.sciencegeek.net/>

### **A Periodic Table of the Elements**

**Grade Level:** K-5 6-8 9-12

Los Alamos National Laboratory's Chemistry Division presents this web site about the periodic table of elements. Clicking on the table brings the visitor to more information about a particular element. A list of the element names and symbols in alphabetical order is available. The download area allows students to download the table or the entire site. Read about what the table is, how to use it, Mendeleev's original table, chemistry in a nutshell, and naming new elements.

**Topic:** Chemical elements, Chemistry, Chemistry--Study and teaching, Semimetals

**URL:** <http://pearl1.lanl.gov/periodic/default.htm>

### **Chemistry**

**Grade Level:** 9-12

This is a great place to stop if you are a chemistry teacher or student. Explore chemistry demonstrations such as the Floating Tin Sponge or Quick Freeze, read the answers to frequently asked chemistry questions, and check out Mole Day celebration ideas. There is also a section that offers tips on writing grants and proposals.

**Topic:** Chemistry, Chemistry--Experiments

**URL:** <http://www.flinnsci.com/Sections/Chemistry/chemistry.asp>

### **SMILE program chemistry index**

**Grade Level:** 9-12

This web site, from the Illinois Institute of Technology, contains a collection of almost 200 lesson plans for chemistry teachers. Part of the college's SMILE program, the lessons are offered in order to enhance elementary and high school learning. All lesson plans include the materials needed, a suggested strategy and expected outcomes.

**Topic:** Chemistry, Chemistry--Study and teaching

**URL:** <http://www.iit.edu/~smile/cheminde.html>

**Chemistry with Dr. Ng**

**Grade Level:** 6-8 9-12

Written by a retired PhD in chemistry, this is chemistry for beginners. There is a glossary of terms and sections on inorganic, physical and industrial chemistry. The presentation is in the form of story-telling and the material is on the applied aspect of chemistry. You are encouraged to interact with the author on your difficulties. Every one should be able to follow the lessons.

**Topic:** Chemistry

**URL:** [http://www.geocities.com/chemistry\\_with\\_dr\\_ng/](http://www.geocities.com/chemistry_with_dr_ng/)

**High School Ace**

**Grade Level:** 6-8 9-12

High School Ace is a noncommercial gateway to excellent free online academic resources for high school students. The site features interactive learning activities, an ongoing poetry contest, a reference collection, college information, and subject guides for English, mathematics, social studies, science, languages, arts, and technology. A built-in reference site section gives students quick access to such items as country profiles and world maps. The puzzles and quizzes for all different types of topics make learning interactive and fun.

**Topic:** Education, Secondary, Homework, Secondary education

**URL:** <http://highschoolace.com/ace/ace.cfm>

**Delights of Chemistry**

**Grade Level:** 9-12

Fire. Explosions. Fizzes and pops. See what fun chemistry can be. You will be delighted to find over forty chemistry experiments illustrated and explained. Background information, step-by step procedures, and safety measures are provided. Really get to know what to do in the lab by looking at close-up photographs of the experiment materials before the reaction and images of their products. Animations also bring you front row seats to the demonstrations. So if you are interested in polymers, cyrogenics, or just want to know how to start a magic fire (without a match) visit here.

**Topic:** Chemistry--Experiments

**URL:** <http://www.chem.leeds.ac.uk/delights/>

**Extra Chemistry Topics**

**Grade Level:** 6-8 9-12

This grab bag of chemistry information includes information on units, symbols and constants used in all of the sciences. It also includes information about careers in chemistry, with specific information about astronomical chemistry, environmental chemistry, organic chemistry, physical chemistry and five others. Links to other sections of this chemistry for kid's site are available.

**Topic:** Chemistry, Physical constants, Units

**URL:** [http://www.chem4kids.com/files/etcetera\\_intro.html](http://www.chem4kids.com/files/etcetera_intro.html)

### **ZOOM Kitchen Chemistry**

**Grade Level: K-5**

Whether you choose your own kitchen, the virtual kitchen, or both, you can have fun with kitchen chemistry. In the virtual kitchen, using Flash, you can perform experiments. Snoop around the kitchen to find clues that will go into your lab journal. Use what you've found to determine if each item you test is an acid, neutral, or base. The same experiments can be performed in your own kitchen with the help of an adult. You will use red cabbage juice to find out if a liquid is an acid. Read results from other kids who did this chemistry experiment.

**Topic:** Chemistry, Chemistry--Experiments

**URL:** <http://pbskids.org/zoom/games/kitchenchemistry/>

### **Funology.com The Science of Having Fun Chemistry**

**Grade Level: K-5 6-8**

Would you like to see some Jell-O bounce or make a rubber egg? This great site from Funology has many fun chemistry experiments for kids. Over twenty experiments have simple instructions and a list of needed materials. Most have explanations for the results of the experiments. Make your own lava lamp, and figure out how to clean up an oil spill. Find out how to turn pennies green, and make your own messy volcanic eruption.

**Topic:** Chemistry, Chemistry--Experiments

**URL:** [http://www.funology.com/laboratory/lab\\_chemistry.htm](http://www.funology.com/laboratory/lab_chemistry.htm)

### **History of Chemistry**

**Grade Level: 9-12**

An incredible listing of biographies of Chemists (and a few Physicists) from around the world is one of several excellent features of this site. Scientists are listed in alphabetic order by their last name and sites are listed from most comprehensive to least. The Classic Papers in Chemistry lists other sites that have these papers available in full. The resources are listed in chronological order, but you can use your computer's 'find' feature to type in a key word to find a specific topic. Also available is a fantastic group of links on the History of Science, listed by science topic. All of this site's links will take you outside this site.

**Topic:** Avogadro, Amedeo,--1776-1856, Chemistry, Chemistry--History, Chemists, Physicists

**URL:** [http://www.chemistrycoach.com/history\\_of\\_chemistry.htm](http://www.chemistrycoach.com/history_of_chemistry.htm)

### **Mad Scientist Network**

**Grade Level: 6-8 9-12**

This web site offers science lessons, exhibits, and experiments that covers physics, biology, chemistry, and other areas. Useful for teachers and students.

**Topic:** Chemistry, Chemistry—Study and teaching

**URL:** <http://www.madsci.org>

## Fun with Science Websites

### Bill Nye the Science Guy <http://www.billnye.com/>

- Hd = Home Demos including making your own tornado, baseball moon, eggsperiment, mold madness, etc.
- Qw = question of the week
- Un = Bill Nye talks about the universe.
- Constantly changing “Did you know that” featuring one line facts/trivia about science.

### The Museum of Science, Art and Human Perception

#### <http://www.exploratorium.edu/>

- Discover the physics of kickflips and noseslides in [Skateboard Science](#).
- Make candy at home and learn some sweet science in the [Kitchen Lab](#)
- Explore the science of [baseball](#), [skateboarding](#), [hockey](#) and [cycling](#).
- Use live data to [check the weather in space](#), and [learn how it can affect us here on earth](#).
- Tools for Teaching (Educate tab) include a digital library, hands-on activities, webcasts, field trips, etc. Link to Snacks: pages full of *Snacks*...but not the kind you eat. They're the kind you can learn from and have fun with. Exploratorium Science Snacks are miniature versions of some of the most popular exhibits at the Exploratorium.
- “Cool Sites”:
  - [PEEP and the BiG Wide World](#)  
<http://www.peepandthebigwideworld.com/> - This site, which features Flash-based games starring Peep and his friends, entices three-to-five-year-olds to explore science. While kids may be having too much fun to realize it, these games will help them learn to estimate distances, mix colors, exercise their memory, and explore basic physics. The site also includes a collection of science resources. You'll need the free Flash player. Cool Site: April 2006/May 2006
  - [UNICEF Voices of Youth](#) - Not “your dad’s UNICEF,” this site focuses on the serious problems faced by youth in different parts of the world from the perspective of a young person. There are fun, interactive games that help you explore those problems. You'll need the free Flash player.  
Cool Site: April 2006/May 2006
  - [ForgeFX: Interactive 3D Simulations](#) - A set of fun, interactive, and educational 3D simulation “games.” You'll need the free Flash

player.

Cool Site: April 2006/May 2006

- o [The Mind of Leonardo: The Universal Genius at Work](#) - Web site for the new exhibition "The Mind of Leonardo" at the Institute and Museum of the History of Science in Florence, Italy. Explore Leonardo da Vinci's mode of thinking and his unitary conception of knowledge as the effort to assimilate, through bold theoretical syntheses and inventive experiments, the laws that govern all of the wondrous operations of man and nature. You'll need either Window's Media Player or the QuickTime player to access the video elements. Cool Site: April 2006/May 2006

<http://www.enchantedlearning.com/subjects/dinosaurs/index.html> Zoom

**Dinosaurs:** comprehensive on-line hypertext book about dinosaurs designed for students of all ages and levels of comprehension. Easy-to-use structure allows readers to start at a basic level on each topic, and then to progress to much more advanced information as desired, simply by clicking on links. Table of Contents with click on links below. **If you are looking for information about a particular dinosaur or other paleontology topic, try the [Dinosaur Dictionary](#).** By [Jeananda Col](#)

#### **All About Dinosaurs:**

- [What is a Dinosaur?](#)
- [93 Dinosaur Information Pages](#), including [Apatosaurus](#), [T. rex](#), [Triceratops](#), [Velociraptor](#), and more!
- [107 Dinosaur Print-outs](#)
- [How Dinosaurs are Named](#)
- [What Do Dinosaur Names Mean?](#)
- [The Evolution of Dinosaurs](#)
- [Dinosaurs and Birds](#)
- [Record Breakers](#)
- [Dinosaur Myths](#)

#### **Dino News:**

- [News Index](#)

#### **Anatomy and Behavior:**

- [Blood Pressure](#)
- [Brains](#)
- [Defense](#)
- [Diet](#)
- [General Anatomy](#)
- [Herds and Packs](#)
- [Hot or Cold Blooded?](#)

#### **Extinction:**

Why did the dinosaurs go extinct?

- [What is Extinction?](#)
- [The Alvarez Asteroid Theory](#)
- [Other K-T Extinction Theories](#)
- [Studying Extinctions](#)

#### **Fossils:**

- [First Dinosaur Fossil Discoveries](#)
- [What are Fossils?](#)
- [How Fossils Form](#)
- [Types of Fossils](#)
- [Finding Fossils](#)
- [Excavating Fossils](#)
- [Dating Fossils](#)
- [Bony Jigsaw Puzzles](#)
- [Great Fossil Hunters](#)
- [Fossil Locations](#)
  - [Africa](#)
  - [Antarctica](#)
  - [Asia](#)
  - [Australia](#)
  - [Europe](#)
  - [North America](#)

- [Is it Male or Female?](#)
- [Life Span](#)
- [Locomotion](#)
- [Offense](#)
- [Reproduction, Nests, and Eggs](#)
- [Size](#)
- [Skeleton](#)
- [Skin](#)
- [Tail](#)
- [Teeth](#)

### The Mesozoic Era:

Explore the climate, geology, and dinosaurs from these ancient times.

- [The Mesozoic Era](#)
  - [Triassic period](#)
  - [Jurassic period](#)
  - [Cretaceous period](#)
- [Ages of the Mesozoic](#)

### Classification:

- [Dinosaur Classification](#)
  - [Major Dinosaur Families](#)
  - [Dinosaur Genera](#)
  - [Saurischians](#) - "Lizard-Hipped" Dinosaurs
  - [Ornithischians](#) - "Bird-Hipped" Dinosaurs
- [What are Taxonomy and Cladistics?](#)
- [Not Dinosaurs, but Old and Interesting](#)
- [Dinosaur Cladogram \(includes all of ornithodira\)](#)

### Dinosaur Fun!

- [Dinosaur Jokes](#)
- [Online Coloring Book](#)
- [Games, Puzzles, Quizzes, and Activities](#)
- [Dinosaur Museums](#)
- [Dinosaur Crafts](#)
- [Art and Stamps](#)
- [Movies](#)
- [Vote for Your Favorite Dinosaur](#)
- [Dino Fiction](#)
- [Dinosaur Fan Pictures](#)

**Illustrated Dinosaur Dictionary** - over 1,504 entries: hundreds of dinosaurs and other ancient life forms, paleontology and

- [Canada](#)
- [Mexico](#)
- [Official US State dinos](#)
- [South America](#)

### Dinosaur Quizzes:

• [Interactive, Illustrated Dinosaur Quiz!](#) See if you know 10 basic dinosaur facts. The answers, both right and wrong, are explained thoroughly.

• [Find It!](#) Dinosaur Quizzes to print out.

• [On-line Dinosaur Jumbled-Picture Quizzes!](#) When you answer the questions correctly, a dinosaur picture will appear.

• [Dinosaur Word Unscrambles](#)  
Unscramble words to answer dino questions.

### Questions and Answers:

- [Top Dinosaur Questions!](#)
- [Questions and Answers](#)

### Plants From the Time of the Dinosaurs:

#### Mesozoic Plants

- [Triassic Plants](#)
- [Jurassic Plants](#)
- [Cretaceous Plants](#)

### Classroom Activities and Links:

- [Dinosaur Print-outs](#)
- [Dinosaur Calendar to Print](#)
- [Dinosaur Alphabet Book](#)
- [Dinosaur Crafts](#)
- [Dino Crossword puzzle](#)
- [PreK-Grade 2 Activities and Print-outs](#)
- [Grade 3+ Activities and Print-outs](#)
- [How to Write a Great Dinosaur Report](#)
- [How to Write a Funny Dinosaur Poem](#)
- [References and Recommended](#)

geology terms, and the [great fossil hunters](#) [Books](#)  
of all time!

- [Recommended Links](#)
- [How to Cite Zoom Dinosaurs](#)

### Geologic Time Charts:

- [Detailed version](#)
- [Short version](#)
- [Just the Mesozoic Era](#)

### [Site Index](#)

## [Dinosaur Information Pages](#)

### [Dinosaur Printouts](#)

<http://www.nasa.gov/audience/forkids/kidsclub/flash/index.html> **NASA Kids Club.** Info and fun for kids, teachers and parents: games, art and stories, activities, ask an astronaut, way out, etc.

<http://www.amnh.org/home/> **American Museum of Natural History**

- <http://ology.amnh.org/> OLogy means "the study of." And here on the American Museum of Natural History's OLogy Web site, you can study and explore many cool OLogies. What's your favorite OLogy? If you're fascinated by spiders, then you're into ARACHNOLOGY. If you erupt with joy for volcanoes, then VOLCANOLOGY is your thing. If you're completely wowed by planets and stars, then you love ASTRONOMY.
- <http://www.amnh.org/education/resources/> *Resources for Learning* is a collection of activities, articles, evidence and analysis and more, for **educators, families, students** and anyone interested in teaching or learning about science.
- [http://sciencebulletins.amnh.org/index\\_past.php](http://sciencebulletins.amnh.org/index_past.php) Get the latest information in Science Bulletins
- <http://learn.amnh.org/> On-line professional development programs
- <http://www.amnh.org/education/expeditions/> Follow Museum scientists into the field as they map the origin and progression of life on Earth, explore the richness and variety of world cultures, and take us to destinations as remote as the ocean floor or the Gobi Desert in Mongolia.

<http://www.kidshealth.org/kid/body/> **Kids Place for Health** requires Shockwave. Links for recipes, staying healthy, illnesses, games, etc.

<http://girlsgotech.org> Math, Science and Technology are all around us. This site gives career information along with resources and games to encourage the exploration of science – especially for girls.

<http://eo.ucar.edu/webweather/> Web Weather for kids – includes games, stories, activities <http://eo.ucar.edu/webweather/activities.html>, basic information on weather <http://eo.ucar.edu/webweather/basic.html> and teacher tips

<http://weatherwizkids.com/> Weather Wiz Kids is sponsored by Meteorologist Crystal Wicker from Indianapolis, Indiana. Games, weather experiments and links by topic

<http://www.wildwildweather.com/index.html> Meteorologist Dan Satterfield created WILD WILD WEATHER PAGE for Kids between 6 and 16 years old and for their Parents and Teachers,

[http://www.iknowthat.com/ScienceIllustrations/weather/science\\_desk.html](http://www.iknowthat.com/ScienceIllustrations/weather/science_desk.html) weather site – interactive site comparing temperature, humidity, polar and tropical air masses to create different types of clouds and precipitation

[http://www.bbc.co.uk/schools/scienceclips/index\\_flash.shtml](http://www.bbc.co.uk/schools/scienceclips/index_flash.shtml) Science clips from the BBC site include interactive games to help students understand science. Clips are arranged by age and include sorting, magnets, plants and animals,

## **Snowflakes**

- Make a Flake (how to make snowflakes--video clips):  
<http://snowflakes.lookandfeel.com/>
- Wilson "Snowflake" Bentley: <http://snowflakebentley.com/>
- Snowflake Bentley images: <http://snowflakebentley.com/snowflakes.htm>
- Snowflake Bentley (the book) curriculum site:  
<http://www.vickiblackwell.com/lit/bentley.html>
- Bentley Snowflake Collection: <http://www.bentley.sciencebuff.org/>
- Snowflake Bentley Q & A:  
<http://www.nancypolette.com/LitGuidesText/snowflake.htm>
- Literature Learning Ladders: <http://eduscapes.com/caldecott/99a.html>  
many links to snow and snowflake sites
- Read Write Think:  
[http://www.readwritethink.org/lessons/lesson\\_view.asp?id=774](http://www.readwritethink.org/lessons/lesson_view.asp?id=774) Lesson plan for “multi-genre writing” based on *Snowflake Bentley* – grades 3-5.

National Geographic for Kids online magazine:

<http://kids.nationalgeographic.com/portal/site/Kids/menuitem.f977d82a49287d81b92c3010ca248a0c/?vgnnextoid=9e18edfab621d010VgnVCM1000006640a8c0R CRD> games, animals, stories, activities

<http://www.science.org.au/nova/> NOVA Science in the News

<http://www.pbs.org/science/> PBS. Many links to animals and science topics. Includes Kidszoom <http://pbskids.org/zoom/activities/sci/> link to games and experiments

Popular Science <http://www.popsci.com/popsci/> (based on the magazine). Lots of car/automotive technology, ocean life, blogs, photo gallery.

Dragonfly <http://www.units.muohio.edu/dragonfly/> - created with Miami University students for the original *Dragonfly* magazine. Butterflies to baseball in space to water to webs of life, animal talk, earth sounds and more.

### **Miscellaneous:**

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- NetTrekker <http://school.nettrekker.com/frontdoor/>
- Enchanted Learning <http://www.enchantedlearning.com/Home.html>
- Kathy Schrock <http://school.discovery.com/schrockguide/>
- Smithsonian <http://smithsonianeducation.org/> From the Smithsonian Institute. Click on Educators, Families or Students. Educators section includes lesson plans and materials for all subject areas.
- Discovery.com <http://www.discovery.com/>
- Fact Monster <http://www.factmonster.com/> Click on the Science link for environment, body, animals, inventions, astronomy and space, weather, food, general science, computers and the internet, transportation and an interactive periodic table.

Created by Sally Bub April, 2007

**Environmental Websites by Gwynne Mosch**

### **EarthTrends**

<http://www.earthtrends.wri.org/>

EarthTrends is a comprehensive online database maintained by the World Resources Institute. It focuses on the environmental, social, and economic trends that shape our world. Excellent source of data on ecosystems, population, energy, agriculture and more. Very student friendly, with “how to cite” and research topics with tabs for maps, country profiles, data tables and features.

### **Electronic Green Journal**

<http://egj.lib.uidaho.edu/index.html>

The mission of the Electronic Green Journal is to promote international environmental research by providing a peer reviewed, unbiased, and freely accessible forum for the exchange of environmental information. Back issues are searchable.

### **Energy Trends**

<http://energytrends.pnl.gov/>

The research presented here is part of the Basic Science Analysis Program, with the support of the U.S. Department of Energy's Office of Science. The Energy Trends site examines trends in worldwide energy research, development and investment. It includes analyses of R&D investment trends across countries relative to future energy needs and in-depth reports examining trends in energy R&D investment in the European Union and eight industrialized countries. Most useful for AP Environmental classes.

### **Environmental Defense**

<http://www.environmentaldefense.org/home.cfm>

A gateway site from a national nonprofit organization a half-million strong. They join science, economics and law to create fair, new and feasible solutions to society's most pressing environmental issues. Another student friendly site with very accessible hot topics, a “find an expert” link (select by topic or name). “Take Action for the environment” urges students to send free faxes and emails to top decision-makers. Once they do that, they will receive email action alerts telling them what they can do online to save the planet.

### **Environmental News Network**

<http://www.enn.com/>

ENN publishes news, commentary, and information on environmental issues with a global perspective. News stories are gathered from a variety of sources, including major wire services (Reuters, Associated Press, Knight Ridder/Tribune). Content is also included from partner publishers, freelance journalists, and continuing research. Notable features are today's news and commentary, a weekly news summary, feature articles, and a multimedia tab.

### **Environmental Quality Statistics**

<http://www.nepa.gov/nepa/reports/statistics/>

This site from the U.S. Department of Energy provides access to the statistical tables that appear in the annual report of the Council on Environmental Quality (CEQ). Most of the tables have been updated since the last annual report. The statistical tables are organized into eleven sections: Population, Economy and Environment, Public Lands and Recreation, Ecosystems and Biodiversity, Air Quality, Aquatic Resources, Terrestrial Resources, Pollution Prevention, Energy, Transportation and Global Environment. Sources of Environmental Statistics and Environmental Conditions and Trends are under construction.

### **EnviroZine**

[http://www.ec.gc.ca/EnviroZine/english/home\\_e.cfm](http://www.ec.gc.ca/EnviroZine/english/home_e.cfm)

Environmental magazine from the Canadian Ministry on the Environment. Extensive "deep" list of topics as well as a browsable subject list.

### **Global Invasive Species Database**

<http://www.issg.org/database/welcome/>

The Global Invasive Species Database (GISD) promotes increased awareness about invasive alien species and facilitates effective prevention and management activities. The GISD was developed as part of the global initiative on invasive species through a partnership with the University of Auckland among others. Students may search by species name, location, habitat or organism. The scientific name for zebra mussels (*Dreissena polymorpha*) was needed to search for information although New York in

the location field alone yielded 113 results. One special feature is 100 of the worst invasive species.

### **Global Warming**

<http://www.climatehotmap.org/>

The centerpiece of this site is a map of early warning signs illustrating the global reach of climate changes. Yellow icons indicate direct evidence of a particularly far-reaching, long term trend toward warmer global temperatures as projected by climactic models. Red icons illustrate events that precede the types of impacts likely to occur more frequently and in a wider geographic area with continued warming. Sponsored by the Sierra Club and the World Wildlife Fund among others. Global warming basics and handy photos illustrating various Global Warming Early Warning Signs, plus a link to the photographer's website containing additional photos.

### **Pew Center on Global Climate Change**

<http://www.pewclimate.org/>

The Pew Center bills itself as a non-profit, non-partisan and independent. Its mission is to provide credible information and creative solutions to address global climate change. Global warming basics include basic science, facts and figures, climate change 101, FAQs, a glossary and online resources. "What you need to know" is a comprehensive look at recent events pertaining to global warming.

### **Household Waste Management**

<http://www.purdue.edu/dp/envirosoft/housewaste/src/title2.htm>

This website is aimed at the individual citizen and consumer. It hopes to enable the citizen consumer to reduce household solid and hazardous waste, safely use, store, handle and dispose of household hazardous wastes and reuse household products. Comprehensive sections on the basic concepts of household waste, hazardous products in the home, tools for waste management, safe disposal and quizzes for students K-12.

### **Superfund 20th Anniversary Report**

<http://www.epa.gov/superfund/action/20years/index.htm>

The report highlights the evolution of this program which addresses the dangers created by toxic waste sites. Includes Superfund Time Line.

## **U.S. Environmental Protection Agency**

<http://www.epa.gov/>

The gateway to EPA resources, the quick finder and top stories are notable features. The site is also available in Spanish.

## **Water Quality Information Center**

<http://www.nal.usda.gov/wqic>

Water Quality Information Center (WQIC) provides primarily bibliographic information on water quality and agriculture. Also available in Spanish.

## **Envirofacts**

<http://www.epa.gov/enviro/>

Envirofacts brags that it is a one-stop source for environmental information. Quick start offers a sampler of information about your region after entering your zip code. Topics are used for greater depth on a particular subject related to your region.

## **World Resources Institute**

<http://www.wri.org/>

An environmental think tank offering Current News and Issues as well as links to reports.

## **The World's Water**

<http://www.worldwater.org/>

Provides information and data on the world's freshwater resources. Tabs for water data and water conflicts.

## **worldbiomes.com**

<http://www.worldbiomes.com/>

Covers 5 of the major world biomes and their subdivisions. Each biome has a link to a map and photos. There are also eco-news and FAQ links.

## **The World's Biomes**

<http://www.ucmp.berkeley.edu/exhibits/biomes/index.php>

Sponsored by the University of California Museum of Paleontology, this site groups biomes into six major types and their subdivisions. Introductory material on the Conservation and preservation of biomes.

### **Endangered Species**

<http://www.worldwildlife.org/endangered/>

Information on priority ecoregions and endangered animals of the WWF.

### **Animal Info - Information on Endangered Mammals**

<http://www.animalinfo.org/>

Search by Individual Species Index (includes common and scientific names), Species Group Index (common names of each species grouped by category), or enter term in search box. For each animal a picture, tidbits, status and trends, data on biology and ecology and references are provided.

# SCIENCE PROJECTS FOR K-12 STUDENTS

CREATED BY MATT KNOPE

## **PBS Kids**

Really fun site that seems to include projects in the 2<sup>nd</sup> to 8<sup>th</sup> grade range. Kid-friendly graphics make this site appealing, and it is organized by nine main science concepts, such as [Chemistry](#), [Engineering](#), [Five Main Senses](#), etc.

<http://pbskids.org/zoom/activities/sci/>

## **Hobby Science Projects for Kids**

Projects for Kids is a collection of fun and easy science and craft projects. Learn how to raise crickets, learn fun insect facts on the Bug page, get weather info., and much more. This site looks to be elementary and middle school range.

[www.hobbyscience.com/](http://www.hobbyscience.com/)

## **Science Projects**

Good site where kids can find ideas for wind, solar, and hydro-power energy projects. They can use everyday products to harness the energy of things like peanuts, lemons, or candles. Site works for a range of K-8.

<http://www.energyquest.ca.gov/projects/index.html#chemical>

## **NEED Science Fair Projects for Kids**

National Education Department website that can help kids pick different topics for science projects. Topics are divided by category: K-3, 4-6, 7-9. Work directly from your desired grade level.

<http://www.need.org/energyfair.php>

## **A Science Fair Project Resource Guide**

Very comprehensive site about science projects. Walks students step-by-step through the entire process of choosing a topic, learning about it, completing the projects, etc. This site can be utilized by elementary, middle and high school students.

<http://www.ipl.org/div/kidspace/projectguide/>

## **Experimental Science Projects: An Introductory Guide**

A very basic but good site that guides K-12 students through the entire process of completing a science project using scientific inquiry. Includes leveled guides, beginner to advanced, and a great example for students.

<http://www.isd77.k12.mn.us/resources/cf/SciProjIntro.html>

## **Fun Science Gallery**

Good site with many different and easy to complete science projects. From simple to difficult, most of the main branches of science are covered. Site can be used by students in elementary and high school.

[http://www.funsci.com/texts/index\\_en.htm](http://www.funsci.com/texts/index_en.htm)

## **The Space Place**

Site is sponsored by NASA. Features kid-friendly graphics and layout. Links to many different projects for kids. Includes a teacher's corner and audio. Geared towards elementary and middle school level students.

<http://spaceplace.nasa.gov/en/kids/>

## **Playful Invention and Exploration**

Cool site that has an alphabetical listing of different science projects to try. Each project has a step-by-step directions and actual pictures to help students follow along. This site looks like it would be helpful for middle and high school students.

<http://www.pienetwork.org/>

## **Science Fair Projects**

A really good and comprehensive site that allows you to explore and choose experiments from a variety of topics. Each topic contains experiments for primary, intermediate, middle school and high school. Topics can be identified as sample projects or reference information. This site can be a little confusing to navigate at first, but is worth it. All students, K-12 can find this site useful, but it may be complicated for elementary students.

<http://www.juliantrubin.com/fairprojects.html>

## **Kid's Science Projects (The Science Club)**

Good site that organizes projects and information by age level. Three sections of: *Simple, for beginners, Medium, and Advanced, high school/adult*. Many projects that look interesting and fun for all ages.

<http://scienceclub.org/proj/kidprojb.html>

## **Food Science**

Department of Penn State Food Science website contains a whole bunch of fantastic links with pertinent science information and experiments with foods. Really neat and informative site for high school aged students.

[http://www.foodscience.psu.edu/outreach/fun\\_food\\_science.html](http://www.foodscience.psu.edu/outreach/fun_food_science.html)

## **Food Science: Clemson University**

Another good site about food science. Lists numerous good science projects dealing with food for upper level students. This site is published by Clemson University, and all projects are in a PDF format.

<http://www.clemson.edu/foodscience/teachers.htm>

## **The Science Project Encyclopedia**

This is an upper-level high school site for pre-collegiate students. This site takes you step-by-step through the entire process, at an advanced level, and has comprehensive links to all needed information, examples, and different areas of science.

<http://www.cpet.ufl.edu/sciproj/sci002.htm>

## **The Science Explorer**

A lot of really fun activities displayed in a kid-friendly format. Many of these projects can be done with normal household items. This site looks appropriate for older elementary and middle school students.

[http://www.exploratorium.edu/science\\_explorer/](http://www.exploratorium.edu/science_explorer/)

## Have You Checked Today's Weather Report? An Internet Hotlist on Weather

created by [apalokoff](#)  
Wilson Commencement Academy

[Introduction](#) | [Pathfinders](#) | [Government](#) | [Scientific/Professional Sites](#) |  
[School/Educational Sites](#) | [Private/Commercial Sites](#)

---

### Introduction

Can you imagine how one could keep up with all the weather developments without the wonderful access to internet resources? This compiler consulted meteorologists and science teachers to get their recommendations of a few essential and favorite websites. She discovered many more. Here is a sample. Enjoy your browse!

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### The Internet Resources

#### Pathfinders

- [American Library Association](#) - ALA's Great Web Sites for Kids (preschool - age 14.)
- [Discovery School \(Kathy Schrock's Guide for Educators\)](#) - An excellent site to locate a few good weather internet resources quickly.
- [Net Trekker](#) - Evaluted websites by subject. Particularly helpful are the read aloud text feature, and advance search elements.

#### Government

- [Digital Library for Earth System Education](#) - This site serves as the geoscience node in the National Science Digital Library (NSDL) and is funded by the National Science Foundation. Can limit search by grade

levels, activity and topics in this reviewed sites database. Resources in DLESE include lesson plans, scientific data, visualizations, interactive computer models, and virtual field trips. Very comprehensive information site.

- [Federal Resources for Educational Excellence](#) - Teaching and Learning Resources from Federal Agencies. Does not allow user to limit searches by grade level and activities.
- [NOAA](#) - This portal is sponsored by the National Oceanic & Atmospheric Administration, U.S. Dept. of Commerce. Official U.S. website for weather forecasts, warnings, and advisories. This is a primary website used by meteorologists.
- [NOAA - Library](#) - Links topics to appropriate websites within NOAA, and elsewhere.
- [NOAA - National Climatic Data Center](#) - Provides the world's largest active archive of weather data - World Data Center for Meteorology
- [NOAA - Education Services](#) - Links materials for teachers, students, and just cool sites within NOAA.
- [National Weather Service](#) - Direct link to official U.S. Weather real time forecasts, weather warnings, and storm advisories

### **School/Educational Sites**

- [Ed Video](#) - Video Streaming on demand. Students and staff can use this with each school's special ID.
- [Kids Click](#) - Web search created by the Ramapo Catskill Library System for Grades K-7. Includes criteria for selection.
- [Nova OnLine](#) - Provides teacher's guide to programs and offer video clips.
- [Scholastic](#) - Helpful lesson plan site.
- [The Weather World 2010 Project](#) - 'WW2010 strives to integrate real time and archived data with instructional resources using new and innovative technologies.' Sponsored by the University of Illinois with funding by The National Science Foundation and NASA.
- [The Why Files: Environmental Science](#) - Interactive, fun topics sponsored by the University of Wisconsin.
- [Windows to the Universe sponsored by University Corporation for Atmospheric Research](#) - Colorful presentations with differentiated reading levels. Created by the University Corporation for Atmospheric Research (UCAR) and The Regents of the University of Michigan.

### **Private/Commercial Sites**

- [Awesome Library](#) - The Evaluation and Development Institute (EDI) sponsors this Web portal. It does have advertisements on some of its sites.
- [Learner.org](#) - Sponsored by the Annenberg Foundation. It does have advertisements on some sites.

- [Quick access to The Weather Channel: Weather Glossary](#) -
- [Weather Underground](#) - Presents alternative viewpoints to current weather related issues in its education section. Can access world weather information in a multitude of foreign languages.

Websites for **Genetics Research**: Secondary School

## Teacher Resources

### 1. **Genetics Education Center.** <http://www.kumc.edu/gec/>

“For educators interested in human genetics and the human genome project.” Includes extensive list of genetics-related resources, lesson plans, labs, “teaching with movies,” links to resources for the Human Genome Project, plays, and other activities.

Example from site:

## Genetic Programs and Resources

### Programs

- [Cracking the Code of Life](#), NOVA, April, 2001, [segments online](#), activities, [introduction to heredity](#), [explore stretch of code](#)
- [Lost Tribes of Israel, DNA activity online](#), NOVA, PBS program, Feb 2000
- [High School Human Genome Program](#), *Genetics Education Partnership, Univ. Washington, Seattle*, [Cool Tools Sorted by Grade Level](#)
- [Genetics Education Unit](#), *Murdoch Institute, Australia*
- [Centre for Genetics Education](#), *Australia*
- Human Genetic Variation, [Curriculum Supplements](#), *NIH, free (No. 99-4647)*, grades 9-12
- [A Users Guide to Genetics: The Medicine of the Future](#), *National Human Genome Research Institute, NIH, and the Smithsonian. Fall 1998, audio of lecture, slides, and links of program and speaker*
- [Educator Resources, A Question of Genes](#), *PBS, Genetic Testing 9/16/97 (no longer online)*
- [The DNA Files: Unraveling the Mysteries of Genetic Science](#), *National Public Radio, Genetic Resources, Basic Genetics Resources*
- [Access Excellence](#), *including genetic activities lesson plans, Genentech*
- [Holiday Lecture Series on Science](#), *Howard Hughes Medical Institute, Clockwork Genes (webcast Dec 2000), Genes and Gender, RNA, Human Disease, Mutations & Maladies (heart) - DEC 98; Genetic and Cardiovascular Conditions, Senses and Sensitivity (97), other*
- [The Human Genome Project](#), *MCET, Boston, MA, ethical, legal, and social implications of genetic information and dissemination. Student projects, teacher resources, and interactive material (no longer functional)*

## **2. Genetics Teaching Vignettes: High School:**

<http://genetics-education-partnership.mbt.washington.edu/class/high.htm>

Includes genetics education guide, downloadable instructional materials, classroom activities and links.

**Example from site:**

## **Reviews of Genetics Instructional Materials**

- [Sorted alphabetically by title](#)
- [Sorted by grade level](#)
- Sorted by resource type (book, video, etc.) coming soon

## **Alphabetical Listing of Reviewed Instructional Materials**

[Amazing Schemes Within Your Genes](#)

[American Biology Teacher](#)

[Bioethics Forums](#)

[Biotechnology Manual](#)

[Biotechnology Projects for Young Scientists](#)

[Biotechnology: the Technology of Life](#)

[Blueprint for Life](#)

[The Cartoon Guide to Genetics](#)

[Case Workbook in Human Genetics](#)

[Cells Are Us](#)

[Cell Wars](#)

[The Cell Works](#)

[Chances' Choices](#)

[Current Perspectives in Genetics](#)

**Example of lesson plan** (from the pdf version of the Genetics Education Guide (January 2000), a 125 page document downloadable from this site.):

## DNA Sequencing Creative Writing Exercise\*

Date Due: \_\_\_\_\_

1. Write a personal analogy in which you become a molecule (choices given below) from our two-week DNA Sequencing Experiment and tell about the experience. Because you will ascribe *human* qualities to a molecule, this assignment has been dubbed “Molecular Anthropomorphism.”

2. Become either:

- a molecule of biotin-tagged primer, or
- a dideoxynucleotide molecule, or
- a molecule of template,

and describe:

- who you are (i.e. which molecule),
- how you got involved in this experiment,
- where you went during the experiment,
- who you met along the way (who else had to be there), and
- what happened to you (specific biochemical events) during the experiment.

3. Aim for 2-3 pages (400-500 words). You are free to add information that is not included in the list above, but be selective.

4. These are the four criteria by which your personal analogy will be assessed:

- Creativity
- Scientific Accuracy
- Extensive Examples
- Good Writing

**Creativity** can be expressed in the nature of the analogy or in the story line.

**Accurate science** demands that the student have a thorough understanding of the biology required for DNA sequencing. Students must be accurate not only with regard to the facts, but also with regard to the explanations behind the facts.

Good papers are **extensive**--write about *how* and *why*, rather than just about *what*.

Finally, **good writing** is logical, effective, and coherent; supports the writer's purpose; is alive and interesting; and does not harbor mistakes in grammar, usage, spelling, or typing.

**Have Fun!**

## Student Resources

1. National Library of Medicine <http://www.nlm.nih.gov/>. This site provides brief descriptions, easily read by students, of more than 60 genetic disorders.
2. The address <http://www.nhgri.nih.gov/DIR/VIP/> takes you directly to the home page of the Office of Science Education and Outreach, which provides access to a variety of educational resources, including a talking glossary of genetics, printable illustrations and explanations of important terms and current techniques in molecular genetics, and schedules and (in some cases) the full texts of workshops and presentations on a wide range of topics related to human genetic research.
3. The address <http://www.nhgri.nih.gov/DIR/VIP/SI> takes you directly to the Campus on the Mall Lecture Series on Genetics, a series of eight slide-illustrated lectures presented as a joint effort between researchers in NHGRI's Division of Intramural Research and the Smithsonian Institute. Geared toward the layperson and suitable for high school students, the course provides a tour of current research in human genetics and a glimpse into the genetic medicine of the future. Topics include the Human Genome Project, techniques involved in cloning and mapping genes, genes related to human behavior, the genetics of cancer, gene therapy, and issues related to genetic testing.
4. Blazing a Genetic Trail, Howard Hughes Medical Institute <http://www.hhmi.org/genetictrail/>. Developed by the Howard Hughes Medical Institute (HHMI), this is an interesting, highly readable set of stories about the work of HHMI investigators in molecular genetics. The HHMI home page (<http://hhmi.org>) also provides a delightful feature called *Becoming a Scientist* in which each month, a new video introduces an HHMI investigator who talks about what it takes to become successful as a practicing scientist.
5. The DNA Files SoundVision Productions <http://www.dnfiles.org/home.html>. This site provides the audio of nine one-hour programs about genetic research and its applications that aired on National Public Radio. Tapes and transcripts of these broadcasts also are available for ordering.

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### Example from reference #1:

\* searchable

	Top of Form
	<b>Search NLM Web Site</b>
	Bottom of Form

[Home](#) > [Library Catalog & Services](#) > [Fact Sheets](#) > [Genetics Home Reference](#)

### **Fact Sheet**

### **Genetics Home Reference**

[Return to Web Version](#) [Printer-friendly Version](#)

### **What is the Genetics Home Reference?**

The Genetics Home Reference is the National Library of Medicine's Web site for consumer information about genetic conditions and the genes or chromosomes responsible for those conditions.

### **How do I find the Genetics Home Reference?**

The Genetics Home Reference is available on the World Wide Web at <http://ghr.nlm.nih.gov/> or through links on MedlinePlus® (<http://medlineplus.gov/>).

### **What information is in the Genetics Home Reference?**

#### Genetic Condition Summaries

Each summary provides a concise definition of a genetic condition and a brief description of signs and symptoms. The genetic cause of the condition, its frequency, and pattern of inheritance are also explained. In addition, each summary links directly to related genes or chromosomes and to more detailed information about the condition.

#### Gene Summaries

Each summary provides the official name and symbol of a gene, its chromosomal location, and an explanation of its normal function and how

mutations in the gene cause particular genetic conditions. Each gene summary links directly to related genetic conditions and to related chromosomes.

#### Chromosome Summaries

Chromosome summaries provide an estimate of the amount of DNA and the number of genes for each chromosome. Chromosomal conditions link directly to related chromosomes, which explain how changes in the number or structure of chromosomes can lead to certain disorders.

#### Example from reference #2:

[Home Educational Resources](#) **Talking Glossary**

<< [Back to the glossary](#)

**defined:** One of the threadlike "packages" of genes and other DNA in the nucleus of a cell. Different kinds of organisms have different numbers of chromosomes. Humans have 23 pairs of chromosomes, 46 in all: 44 autosomes and two sex chromosomes. Each parent contributes one chromosome to each pair, so children get half of their chromosomes from their mothers and half from their fathers.

**explained:** [Listen to a detailed explanation.](#)

[Dr. Eric Green](#), of the National Human Genome Research Institute's Genome Technology Branch, defines chromosome.

**illustrated:** [View illustration](#)

**related terms:** [autosome](#), [birth defect](#), [cell](#), [deoxyribonucleic acid \(DNA\)](#), [gene](#), [nucleus](#), [protein](#), [sex chromosome](#)

terms \*Links to other  
and their meanings.

*All of the illustrations in the Talking Glossary of Genetics are freely available and may be used without special permission.*

### Example from reference #3:

#### [October 13-Genetic Medicine of the Future: The Human Genome Project And Beyond](#)

Dr. Francis Collins, director, National Human Genome Research Institute (NHGRI), National Institutes of Health, explains how having a complete gene map will dramatically change our lives. Dr. Collins also answers the question: What is the Human Genome Project?

\*links to lectures with slides that one can either listen to or view the slides

#### [October 20-Everything You Need To Know about Genes](#)

Dr. Robert Nussbaum, chief of NHGRI's Genetic Disease Research Branch, discusses key genetic concepts and terms, including DNA, PCR, DNA fingerprinting and cloning. Also discussed is the difference between genes and chromosomes, as well as other useful information for interpreting the genetic revolution.

#### [October 27-Personality Genes](#)

Dr. Dean Hamer, chief, Gene Structure and Regulation, National Cancer Institute's Laboratory of Biochemistry, talks about the inheritance of human behavior. Topics covered include anxiety, sex, addictions, violence, eating habits, and more.

### Example from reference #4:

[Stalking a Lethal Gene](#)

[In Search of Large Families](#)

**Reading the Human  
Blueprint**

**The Human Genome  
Project**

[Why So Many Errors in Our  
DNA?](#)

[How Genetic Disorders Are  
Inherited](#)

[How to Conquer a Genetic  
Disease](#)

[Of Mice and Men](#)

[Progress Continues](#)

[HHMI Home](#)

**Reading the Human Blueprint:**

## The Human Genome Project

"All human disease is genetic in origin," Nobel laureate Paul Berg of Stanford University told a cancer symposium a few years ago.

Berg was exaggerating, but only slightly. It has become increasingly evident that virtually all human afflictions, from cancer to psychiatric disorders and susceptibility to infection, are rooted in our genes. "What we need to do now is find those genes," says James Watson, who shared a Nobel Prize for deciphering the structure of [DNA](#).

Mapping the human [genome](#) actually began in 1911, when the gene responsible for red-green color blindness was assigned to the [X chromosome](#). This flowed from the observation that color blindness was passed on to sons by mothers who saw colors normally. Females, who have two X chromosomes, are protected from this disorder by a normal copy of the gene on their second X chromosome—unlike males, who have one X and one [Y chromosome](#).

Some other disorders that affect only males were likewise mapped to the X chromosome, but the other 22 pairs of chromosomes remained virtually uncharted until the late 1960s. At that time, biologists fused human and mouse [cells](#) to create hybrid cells and found that these uneasy hybrids cast off their human chromosomes until only one or a few of the human chromosomes remained. Any recognizable human proteins found in such cells would therefore have to be produced by genes located on the remaining human chromosomes. Narrowing down the number of chromosomes in this fashion allowed scientists to assign about 100 genes to specific chromosomes.

Map-making really took off a few years later, when [geneticists](#) discovered characteristic light and dark stripes, or bands, across each chromosome after it was stained with a chemical. These bands, which fluoresced under ultraviolet light, provided the chromosomal equivalent of latitudes. They made it easier to identify individual human chromosomes in hybrid cells and some 1,000 genes were soon assigned to specific chromosomes on which these bands served as rough landmarks.

**Example from reference #5:**

\*What opens after clicking on interact

## INTERACT

### Scenarios

Want to see genetic science in action? Get involved in our ethical scenarios, where you enter the lives of people directly affected by genetic science. The scenarios are fictitious, but the situations are very real. Put yourself in the shoes of researchers, doctors, and patients who face decisions that could affect all of us. Consider your options. Make your choices. Then see how it turns out.

[Marfan Syndrome](#) - You're a promising high school athlete with prospects of fame and fortune. But you may have a disease that could end your career - and your life. What's your game plan?

[Breast Cancer](#) - A close family member is dying of breast cancer. Are you at high risk for developing cancer yourself? Do you want to know? For yourself? For your children?

[Transgenics](#) - It all began when Mendel cross-pollinated those pea plants more than 130 years ago. Now scientists can blend genetic material from plants, animals and even bacteria with *human* DNA. Revolution, or recipe for disaster? Decide for yourself, with this interactive look at the past - and future - of transgenics.

# SPACE

## An Internet Hotlist on SPACE EXPLORATION

created by SJM  
FDPS LIBRARY

[Introduction](#) | [HISTORY/ASTRONOMY](#) | [SPACE RACE](#) | [NASA/ROCKET SCIENCE](#) | [LIVING IN SPACE](#)

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### Introduction

In addition to using books and magazines to find out about SPACE EXPLORATION, why not also use the power of the Internet? The links below will get you started.

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### The Internet Resources

- [Filamentality](http://www.kn.pacbell.com/wired/fil/) - <http://www.kn.pacbell.com/wired/fil/> Filamentality is a fill-in-the-blank tool that guides you through picking a topic, searching the Internet, gathering good Internet links, and turning them into online learning activities.
- [SJM SELECTED SPACE WEBSITES FOR SECONDARY](http://www.kn.att.com/wired/fil/pages/listspacexsj.html) - <http://www.kn.att.com/wired/fil/pages/listspacexsj.html> Shortcut to electronic list!

### HISTORY/ASTRONOMY

- [Kids Astronomy](http://www.kidsastronomy.com/) - <http://www.kidsastronomy.com/> absolutely free astronomy resource designed to teach children about the exciting world of outer space.
- [National Science Foundation](http://www.nsf.gov/news/overviews/astronomy/index.jsp) - <http://www.nsf.gov/news/overviews/astronomy/index.jsp> The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 'to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense
- [Steven Hawkings Universe](http://www.pbs.org/wnet/hawking/html/) - <http://www.pbs.org/wnet/hawking/html/> Where do we come from? How did the universe begin? Why is the universe the way it is? How will it end?
- [Thinkquest Timeline](http://library.thinkquest.org/CR0210901/timeline.htm) - <http://library.thinkquest.org/CR0210901/timeline.htm>
- [Windows to the Universe](http://www.windows.ucar.edu/) - <http://www.windows.ucar.edu/> Windows to the Universe is a user-friendly learning system covering the Earth and Space sciences for use by the general public

### SPACE RACE

- [Encyclopedia Smithsonian](http://www.si.edu/resource/faq/) - <http://www.si.edu/resource/faq/> Encyclopedia Smithsonian helps answer frequently asked questions about the Smithsonian with links to resources on subjects from Art to Zoology.

- [Historyplace](http://www.historyplace.com/unitedstates/apollo11/index.html) - <http://www.historyplace.com/unitedstates/apollo11/index.html> The Web site presents a fact-based, common sense approach in the presentation of the history of humanity, with great care given to accuracy.
- [Newseum](http://www.newseum.org/datelinemoon/) - <http://www.newseum.org/datelinemoon/> The world's first interactive museum of news — the Newseum — opened in Arlington, Va., in 1997. Its mission was simple: to help the public and the news media understand one another better.
- [Space Race](http://www.nasm.si.edu/exhibitions/gal114/SpaceRace/search_sr.cfm) - [http://www.nasm.si.edu/exhibitions/gal114/SpaceRace/search\\_sr.cfm](http://www.nasm.si.edu/exhibitions/gal114/SpaceRace/search_sr.cfm) The Space Race grew out of the Cold War between the United States and the Soviet Union, the most powerful nations after World War II. For a half-century, the two superpowers competed for primacy in a global struggle pitting a democratic society against totalitarian communism

## **NASA/ROCKET SCIENCE**

- [Goddard Space Flight Center](http://www.nasa.gov/centers/goddard/about/index.html) - <http://www.nasa.gov/centers/goddard/about/index.html> Nation's largest organization of combined scientists and engineers dedicated to learning and sharing their knowledge of the Earth, solar system, and Universe.
- [Headline news](http://science.nasa.gov/) - <http://science.nasa.gov/> Recent stories and headline news!
- [Johnson Space Center](http://www.nasa.gov/centers/johnson/home/index.html) - <http://www.nasa.gov/centers/johnson/home/index.html> The Mission Control Center at Johnson Space Center directs all space shuttle missions, including international space station assembly flights. MCC also manages all activity onboard the international space station.
- [Kennedy Space Center](http://www.nasa.gov/centers/kennedy/home/index.html) - <http://www.nasa.gov/centers/kennedy/home/index.html> Established as NASA's Launch Operations Center on July 1, 1962, the center was renamed in honor of the nation's 35th president following his death.
- [Langley Research Center](http://www.nasa.gov/centers/langley/home/index.html) - <http://www.nasa.gov/centers/langley/home/index.html> The laboratory you know today as NASA Langley Research Center was founded in 1917 - 41 years before NASA - as the Langley Memorial Aeronautical Laboratory, the Nation's first civilian aeronautics lab. + More NASA Facts...
- [NASA Headquarters](http://www.nasa.gov/about/highlights/what_does_nasa_do.html) - [http://www.nasa.gov/about/highlights/what\\_does\\_nasa\\_do.html](http://www.nasa.gov/about/highlights/what_does_nasa_do.html) NASA's mission is to pioneer the future in space exploration, scientific discovery, and aeronautics research.
- [NASA History Program](http://history.nasa.gov/) - <http://history.nasa.gov/> The NASA History Program was first established in 1959 (a year after NASA itself was formed) and has continued to document and preserve the agency's remarkable history through a variety of products.
- [NASA and Related Websites...](http://teacherlink.ed.usu.edu/tlnasa/websites/index.html) - <http://teacherlink.ed.usu.edu/tlnasa/websites/index.html> TeacherLINKs - A

large database of annotated websites that would be particularly interesting to educators. We've added many NASA websites to the database. Just use 'NASA' as a search keyword

- [Nasa History](http://history.nasa.gov/) - <http://history.nasa.gov/> The NASA History Program was first established in 1959 (a year after NASA itself was formed) and has continued to document and preserve the agency's remarkable history through a variety of products.
- [National Archives](http://www.archives.gov/research/alic/reference/space-centers-programs.html) - <http://www.archives.gov/research/alic/reference/space-centers-programs.html> Information about the United States' space flight programs, including NASA missions and the astronauts who participate in the efforts to explore Earth's galaxy
- [Science.gov](http://www.science.gov/browse/w_110.htm) - [http://www.science.gov/browse/w\\_110.htm](http://www.science.gov/browse/w_110.htm) launched in December 2002, providing for the first time wide public access and a unified search of the government's vast stores of scientific and technical information.
- [Smithsonian Institution's National Air and Space Museum](http://www.nasm.si.edu/) - <http://www.nasm.si.edu/> The Smithsonian Institution's National Air and Space Museum maintains the largest collection of historic air and spacecraft in the world.
- [United States Congress. House of Representatives, Committee on Science](http://science.house.gov/resources/nasastudents.htm). - <http://science.house.gov/resources/nasastudents.htm> Subcommittee on Space and Aeronautics has legislative jurisdiction, general and special oversight and investigative authority on all matters relating to astronomical and aeronautical research and development.

## **LIVING IN SPACE**

- [International Space Station](http://www.pbs.org/spacestation/station.htm) - <http://www.pbs.org/spacestation/station.htm>  
The International Space Station continues the largest scientific cooperative program in history drawing on the resources and scientific expertise of 16 nations: who are the international partners? The International Space Station continues the largest scientific cooperative program in history drawing on the resources and scientific expertise of 16 nations.

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Content by SJM, [STACEY.MAXICK@RCSDK12.ORG](mailto:STACEY.MAXICK@RCSDK12.ORG)  
<http://www.kn.att.com/wired/fil/pages/listspacexsj.html>  
Last revised Wed Feb 28 12:18:01 US/Pacific 2007

<http://www.nationalgeographic.com/solarsystem/splash.html>

<http://sciencemonster.com/planets.html>

<http://worldalmanacforkids.com/explore/space/solarsystem.html>

<http://kids.nineplanets.org>

<http://solarsystem.nasa.gov/planets/index.cfm>

<http://photojournal.jpl.nasa.gov/index.html>

<http://starchild.gsfc.nasa.gov/docs/StarChild/StarChild.html>

<http://pds.jpl.nasa.gov/planets/>

# Systems of the Human Body

## An Internet Hotlist on Systems of the Human Body

created by Ms. Dello-Iacono's SFL Class  
[Baldwin Middle School](#)

[Introduction](#) | [Skeletal System and Muscular System](#) | [Nervous and Endocrine System](#) | [Respiratory and Excretory System](#) | [Reproductive System](#) | [Circulatory System](#)

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### ***Introduction***

In addition to using books and magazines to find out about Systems of the Human Body, why not also use the power of the Internet? The links below will get you started.

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### ***The Internet Resources***

#### **Skeletal System and Muscular System**

- [Skeletal System](#) - Great information on the skeletal system and much more!
- [Skeletal Pictures](#) - Cool pictures on the skeletal system
- [Skeletal Facts](#) - Awesome facts on the skeleton and joints
- [Cool Skeletal Pictures](#) - Great Pictures of muscles and bones

- [Skeletal Information](#) - Good information on every bone in your body!
- [Cool Skeletal Pictures](#) - Great Pictures of muscles and bones
- [Skeletal Information](#) - Good information on every bone in your body!
- [The Bone Zone!](#) - Different information on your bones!
- [Information from head to toe on the skeletal system](#) - Muscle and Bones- Everything you need to know from head to toe!
- [Sculptures of the human skeleton!](#) - pictures of bone sculptures- Labeled so you can find out what they are.
- [Information on your bones and joints!](#) - Pictures and information on your bones and joints!
- [A real theme page about your inner body](#) - This is a theme page about your whole body.
- [Facts and pictures on every part of your body](#) - Great pictures and lots of facts!
- [Healthy Body](#) - This site has information on how to keep your body in shape.
- [Pictures of different muscles in your body!](#) - This website has great pictures of most of the muscles in your body.
- [Different Views of your body!](#) - Want to see this from a different view? Then click on this website and you can see all different views!
- [Different pictures of the different tissues in your body!](#) - If you click on this website, you will see some specific kinds of tissues and more!
- [Find out about the Abdominal Oblique Muscle here!](#) - Want to know where the Abdominal Oblique Muscle is located and important facts about it?
- [View different muscles in your body.](#) - Want to see some muscle images? Push the button Pull/ Push muscles under See More!
- [Information on all of your muscles.](#) - Do you know all you want to know about muscles? This website tells you most of the information you need in life!
- [Information on every muscle!](#) - So many sights to see that there is another website waiting for you! Follow the page all the way down and click on see also Muscle/Nerve connections and a page of information will come up.
- [Pictures and information on muscles and bones in your wrist and hands.](#) - Want to see pictures of bones in your wrist or hand? This website has it all! It also has information about the muscles like what they do and how they move.
- [Different views of the arms and legs and information to follow.](#) - There are different views of the muscles in your arms and legs. Look at the pictures and then scroll down and click on Arm and Leg muscles and information will follow.
- [Different parts of the skull and the bones in your body.](#) - Different parts of the skull and the bones in your body.
- [Bones in your body](#) - Shows all the bones in your body
- [Bones, Bones, Bones](#) - Labels all the bones in your body

- [Facts you never knew before.](#) - If you want to know some facts, click and see more on the bottom of this page. Click on strongest muscle and information will pop up. You have probably never heard any of this before.
- [It's all about the heart!](#) - Have you ever wondered about the beat of your heart and what it looks like? If you have, then see the animations on this page.
- [Animations of everything inside of your body!](#) - Follow the page all the way down and you will see a list of animations. After you click on it you will see anything you can think of.
- [Pictures followed by information.](#) - Follow this page all the way down and you can see many different pictures with information too!
- [Detailed Information on the systems in your body!](#) - Need more detail about any system? This is the website for you!
- [Anything you will ever need to know!](#) - This website can give you any information (description or animations) of anything you are looking for!
- [Everything about the skeletal system](#) - everything about the skeletal system
- [Quiz of skeletal system](#) - Quiz of skeletal system
- [Informational Sources](#) - This site shows you different sources you can use to learn about the skeletal system(examples: books, videos, audio tapes.)
- [Skull](#) - This site shows you the skull
- [Skulls and Bones](#) - This site shows you the skull, and assorted bones etc.
- [Skeletal Visual](#) - so you can get a visual idea of how the skeletal system looks.
- [Background Information](#) - This site tells you all the different cell types in the muscular system and a lot of back rounds information.
- [About the muscular system](#) - This site has all the information you need or want to know about the muscular system
- [Books](#) - This website shows you all the different books that will help you find any information you need
- [Labels of tissues](#) - This shows the tissues, how we move and it labels all the different muscles in the body
- [Dog systems](#) - This is the muscular system of a dog
- [Motor skills](#) - This site shows you all the motor skills the muscles help you do and a lot more information
- [Studying](#) - This site gives you trivia on all the stuff you've learned about and will help you study for a upcoming exam.
- [Diagram of frogs](#) - This website is a diagram of the muscular system of a frog

## **Nervous and Endocrine System**

- [Nervous System](#) - diagram of human body showing the nerves
- [Endocrine System](#) - great information on endocrine system, colored pictures.

- [So what's the Endocrine System?](#) - great information, definition of endocrine system.
- [Nervous System](#) - diagram of human body showing the nerves.
- [The Nervous System](#) - picture of neuron
- [Endocrine System](#) - information on endocrine system
- [Functional organization of the Nervous System](#) - functions of the nervous system
- [The Nervous System](#) - It has lots of information on the nervous system.
- [The Nervous System](#) - It shows the different parts of the nervous system.
- [Diseases of the Endocrine System](#) - Diseases that occur in the endocrine system
- [The Nervous System](#) - picture of neuron
- [5 Senses](#) - Information on the five senses
- [Parkinson's Disease Information Page](#) - definition of parkinson's disease
- [Epilepsy](#) - How to treat Epilepsy
- [Functions of the Nervous System](#) - Shows functions of the Nervous System
- [Central Nervous System](#) - Information on the Central Nervous System
- [Endocrine System](#) - Information on the Endocrine System
- [The Peripheral Nervous System](#) - Information on the peripheral nervous system
- [Peripheral Nervous System](#) - Diagrams of peripheral nervous system
- [Summary](#) - Summaries about everything in the nervous system.
- [Pictures](#) - Great pictures and diagrams of the nervous systems
- [Description](#) - A brief yet thorough description of the nervous system
- [Diagram](#) - A good diagram of the endocrine system.
- [Outline](#) - A thorough outline on the endocrine system.
- [Quiz](#) - Quiz on the endocrine system. Good study guide.
- [Quiz](#) - This is a quiz is to reinforce what you've learned
- [Peripheral Nervous System](#) - information on peripheral nervous system
- [Endocrine System](#) - glands of the endocrine system

## Respiratory and Excretory System

- [Definitions](#) - Definitions of the Excretory System
- [Picture of Kidney](#) - Overview of the system and picture of the kidney
- [Excretory Functions](#) - The way the excretory system works and functions
- [Excretory Diseases](#) - Diseases of the Excretory system
- [Facts and Pictures](#) - Excretory system facts and pictures
- [Pictures of the Respiratory System](#) - Pictures of the Respiratory System
- [Gasses of the Respiratory System](#) - What you need to know about Oxygen
- [How do you breathe?](#) - How and why you breathe
- [Excretory System](#) - The Excretory System
- [Human Excretory](#) - The Human Excretory System
- [Quiz](#) - Excretory System Quiz

- [Organ Descriptions](#)
- [Functions of the Respiratory System](#) - Explains the main functions of the respiratory system
- [The Respiratory System](#) - Has a lot of diagrams and tells you what happens when you inhale and exhale
- [Respiratory System](#) - Shows pictures of every part of the respiratory system.
- [Organ Descriptions-Excretory](#) - good descriptions of organs involved in excretory system
- [Excretory Definitions](#) - Definitions of organs and processes
- [Functions of the Excretory System](#) - Easy to understand functions
- [Overview of the Excretory System](#) - Overview of the functions and characteristics of the organs in the excretory system
- [Descriptions of Organs of the Excretory System](#) - What the organs do
- [Respiratory System-- Basic Function](#) - Tells you the main function of the respiratory system & shows you pictures.
- [Lungs and Respiratory System](#) - Tells you all the disorders you can get in your respiratory system.
- [Circulatory System: Blood](#) - Good diagrams and a lot of information on the heart
- [A fun way to learn about the Respiratory System](#) - A fun way to learn about the Respiratory System
- [A slideshow of the Respiratory System](#) - A slideshow of the Respiratory System
- [Information on the Respiratory System](#) - Information on the Respiratory System
- [Pictures of the Respiratory system](#) - Pictures of the Respiratory System
- [Information on the Respiratory system](#) - Information on the Respiratory system
- [Diagram of the Respiratory System](#) - Diagram of the Respiratory System
- [Descriptions of the Excretory System organs](#) - descriptions of organs involved
- [Essay on parts of Excretory System](#) - essay on organs involved
- [Respiratory System](#) - It has very detailed pictures.

## Reproductive System

- [Diagrams and Information about the Reproductive System](#) - This site has a lot of information about the reproductive system and diagrams that explain exactly what both sexes have to do in order to produce offspring.
- [Information and Diagrams about the Reproductive System](#) - This site has a lot of information about the reproductive system and a few photographs of the male and female reproductive organs.
- [Health Square Informative Reproduction Links](#) - This site has a lot of links and provides specific detail about the reproductive system.

- [Information about the male Reproductive System](#) - This site has a lot of information about the male reproductive system.
- [Information about the female Reproductive System](#) - This web site has a lot of information about the female reproductive system.
- [Questions Answered about the male Reproductive system](#) - This site has a wide range of interesting questions and answers
- [Types of Reproduction and Detailed Pictures](#)
- [Information on female and male reproduction](#)
- [How the Reproductive system works and black and white pictures](#)

## Circulatory System

- [Blood Vessels](#) - Info. on blood vessels
- [Circulatory System](#) - Information on what the circulatory system has to do with the body.
- [Functions of Circulatory System](#) - Explains the functions of the circulatory system.
- [More Info.](#) - Gives good descriptions of the circulatory system and pictures of the human body.
- [Vocabulary](#) - Gives definitions of terms you need to know!
- [Blood](#) - Explains how blood affects the circulatory system.
- [Word Puzzle](#) - Gives you a word puzzle
- [Courses of the Circulatory System](#) - Describes the different courses of the circulatory system.
- [Pictures of The Heart](#) - Gives you pictures of the heart
- [Parts of the Heart](#) - Tells you about the different parts of the heart
- [Definitions](#) - Gives you definitions of circulatory system terms
- [Tubular Circulation](#) - Excellent description of the blood vessels,veins,and arteries
- [Blood](#) - Gives good information on the circulation of blood

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Content by Ms. Dello-Iacono's SFL Class  
<http://www.kn.sbc.com/wired/fil/pages/listsystemsms.html>  
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### Basic Tutorials

<http://www.physicsclassroom.com/Default2.html>

### Electricity

#### Water analogy

<http://faraday.physics.utoronto.ca/IYearLab/Intros/DCI/Flash/WaterAnalogy.html>

#### Building Circuits Interactive

<http://www.article19.com/shockwave/oz.htm>

### Smart Board Interactives

Waves

<http://www.colorado.edu/physics/phet/simulations/stringwave/stringWave.swf>

Protractor for Vectors

<http://www.amblesideprimary.com/ambleweb/mentalmaths/protractor.html>

Complete Interactive Lessons

<http://lqfl.skool.co.uk/keystage4.aspx?id=318>

Interactive Java Labs

[http://www.physics.uoguelph.ca/applets/Intro\\_physics/kisalev/](http://www.physics.uoguelph.ca/applets/Intro_physics/kisalev/)

NSDL.org nsdl.org

DLESE.org dlese.org