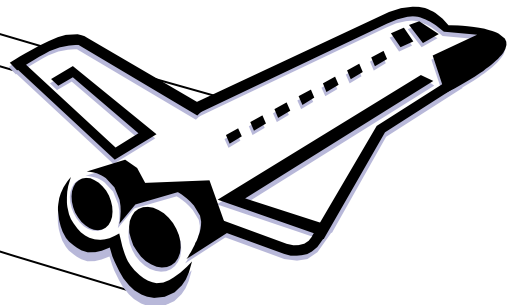
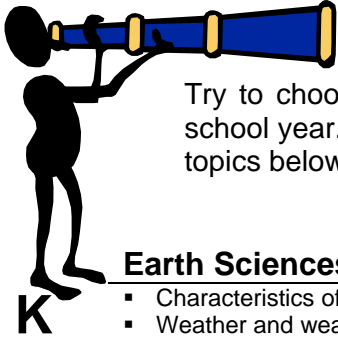


STUDENT APPENDICES



SCIENCE TOPICS FOR GRADES K-5

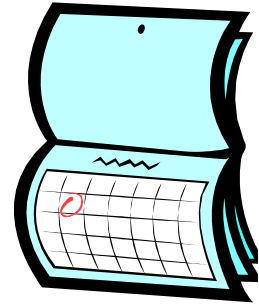


Try to choose a science project that lines up with a science topic covered during your current school year. Or, you might choose to do a science project from next year's topics. Use the list of topics below to help you think of project ideas if you are not sure how to start.

	Earth Sciences	Life Sciences	Physical Sciences
K	<ul style="list-style-type: none"> ▪ Characteristics of mountains ▪ Weather and weather changes ▪ Conservation of Earth's resources 	<ul style="list-style-type: none"> ▪ Animals and plants alike and different ▪ Structures of common plants and animals 	<ul style="list-style-type: none"> ▪ Observing and comparing objects ▪ Water as solid and liquid ▪ Evaporation
1st	<ul style="list-style-type: none"> ▪ Measuring and charting weather ▪ Weather changes and trends ▪ The sun is our heat source 	<ul style="list-style-type: none"> ▪ Animal habitation and plant environments ▪ Life cycles of plants and animals ▪ Interdependency of plants and animals 	<ul style="list-style-type: none"> ▪ Properties of solids, liquids and gases ▪ Changing states of matter
2nd	<ul style="list-style-type: none"> ▪ Rocks, minerals and soil ▪ Weathering and rocks ▪ Fossils ▪ Use of Earth's resources 	<ul style="list-style-type: none"> ▪ Organisms reproduce offspring of their own kind ▪ Life cycles are different for different animals ▪ Characteristics of an organism are inherited from parents and/or influenced by the environment ▪ Variation among individuals 	<ul style="list-style-type: none"> ▪ Motion and forces ▪ Use of machines to make things move ▪ Gravity ▪ Sound energy
3rd	<ul style="list-style-type: none"> ▪ Solar system ▪ Constellations ▪ Earth, moon and sun ▪ Lunar cycle 	<ul style="list-style-type: none"> ▪ Animal adaptation ▪ Plant adaptation ▪ Biodiversity ▪ Cycles in ecosystems ▪ Extinction and survival 	<ul style="list-style-type: none"> ▪ Energy from the sun as light ▪ Forms of stored energy ▪ Energy conversion and movement ▪ Properties of matter ▪ Matter as solid, liquid and gas ▪ Atoms on the Periodic Table of the Elements ▪ Light
4th	<ul style="list-style-type: none"> ▪ Basic rock and mineral identification ▪ Rock cycle and natural processes ▪ Erosion vs. landslides, volcanic eruptions and earthquakes ▪ Effects of natural processes (freezing, thawing, root growth, etc.) 	<ul style="list-style-type: none"> ▪ Energy and matter for life and growth ▪ Decomposers ▪ Interdependency of living organisms on one another ▪ Ecosystems and survival 	<ul style="list-style-type: none"> ▪ Electricity and magnetism ▪ Electromagnets ▪ Electrical energy conversion to heat, light and motion
5th	<ul style="list-style-type: none"> ▪ Evaporation and condensation in weather and water cycles ▪ Water conservation ▪ Origin of water used in local community ▪ Weather patterns ▪ Severe weather ▪ Weather maps and data to predict local weather ▪ Atmospheric pressure ▪ Solar system ▪ Sun's composition ▪ Orbits and gravitational attraction 	<ul style="list-style-type: none"> ▪ Multicellular organisms have specialized structures to support transport of materials ▪ Blood circulation ▪ Carbon dioxide and oxygen exchange ▪ Digestion ▪ Waste disposal ▪ How plants release oxygen ▪ Water respiration 	<ul style="list-style-type: none"> ▪ Atoms and elements ▪ The Periodic Table of the Elements ▪ Combinations of atoms ▪ Metals ▪ Instruments that show atoms and molecules occurring in well-ordered arrays

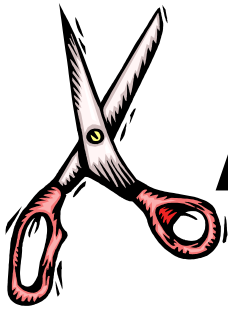


STUDENT TIMELINE ***for*** ***SCIENCE FAIR PROJECT***



TASK	Teacher's Date Due	Teacher's Initials	Parent's Initials
1. Choose, and submit for teacher approval, a topic question/problem to investigate			
2. Do preliminary research. Collect and read books for your topic.			
3. Develop a hypothesis (your best guess) based on your preliminary research.			
4. Decide on the procedure that you will use to test your hypothesis.			
5. Make a list of your materials. Gather your materials.			
6. Conduct your experiment or build and test your invention. Compile your research or collection. Record data.			
7. Organize your data and results.			
8. Write your conclusion based on your results. Write a "real world" application of what you learned.			
9. Write a draft of your science fair report.			
10. Proofread your draft or have someone else proofread it. Type or write a final copy of your report.			
11. Assemble your science fair display board and display items.			
12. Turn in your science fair project (report, display board and display items).			
13. Take your science fair project home.			

**EXAMPLE
of a Timeline
Sheet your
teacher may
give you**



SCIENCE FAIR

MATERIALS SOURCES



Alin Party Company

4139 Woodruff Ave., Lakewood
(562) 420-2489

CM School Supplies

5440 E. Del Amo, Long Beach
(562) 429-2425

Home Depot

2450 Cherry Ave., Signal Hill
(562) 595-9200
751 Spring St., Signal Hill
(562) 426-4667
5000 Hardwick St., Lakewood
(562) 529-3500
www.homedepot.com

Lowe's

7300 E. Carson St., Long Beach
(562) 421-9996
2840 Bellflower Blvd., Long Beach
(562) 496-8120
www.lowes.com

Lyon's Art Supply

420 E. 4th Street
Long Beach, CA
(562) 435-5383

Michael's Crafts

4000 Hardwick St., Lakewood
(562) 633-1913
7320 Carson St., Long Beach
(562) 377-0669

Office Depot

2301 E. Willow, Signal Hill
(562) 427-6333

Radio Shack

For a location near you, call
(800) 843-7422

Staples

3515 Atlantic Avenue, Long Beach
(562) 427-6477
4600 Pacific Coast Highway, LB
(562) 597-1922
7400 E. Carson St., Long Beach
(562) 377-0403
www.staples.com
1-800-378-3-2753



COMMUNITY RESOURCES

Airports

If your project deals with aeronautics, then an airport would be a good place to locate information. Airports often employ meteorologists who may help you with a project dealing with weather.

Animal Hospitals and Wildlife Rescue Centers

Often veterinarians are willing to help students with science projects. If you need an appointment, call about a week in advance.

Botanical Gardens and Commercial Nurseries

Plant specialists can be found at local botanical gardens and nurseries. Sometimes they will donate materials if you explain your project to them.

Colleges and Universities

Local college and university libraries offer you a wider selection of references than your local library. Scientists on the faculty may help you and even allow you to use their laboratory facilities.

Government Agencies

Look in your telephone book for government agencies. Agencies are listed under Federal, State, and Municipal categories. The California Department of Fish and Game in Long Beach is a good source.

GPO

Send a letter to the address below indicating what topic area you are interested in and they will send you a catalog of available books and pamphlets.

U.S. Government Printing Office
Superintendent of Documents
Washington, D.C. 20402

Hospitals and Medical and Dental Offices

Many hospitals have an education department that you can contact. They also have libraries with up-to-date information. Perhaps your family physician or dentist can give you some assistance.

Industries

Major industries have specialists that may be willing to help. Locate them with your telephone book or magazine advertisements. When writing to corporations, include "Public Relations Department," in the address on the envelope and in the letter.

Nature Centers, Parks, and Marine Reserves

Naturalists work at nature centers. They will be able to give you information if your project involves natural environments and ecosystems.

Telephone Books

The Yellow Pages of your telephone book, especially a commercial telephone directory, will give you names, addresses, and general product information. When calling anyone, remember to be polite. Give your name and tell exactly why you are calling.

Zoos and Aquariums

The L.A. and San Diego zoos, Sea World, the Cabrillo Marine Aquarium in San Pedro, and the Long Beach Aquarium of the Pacific have education departments that are often willing to help. They may be able to arrange a meeting for you with an animal keeper or zoologist.



INTERNET REFERENCES

Internet use and web sites:

- You may get ideas and material from the internet.
- You are not allowed to copy a science project from the internet. You must modify it to contain both a control and a variable
- Parents must oversee the web sites that their child visits; many have pop-ups and links that are not for elementary school age students.
- Using information from the web is just like a book, word for word is plagiarism and you need to include it in your bibliography.
- To use copyright protected pictures and text from a web site; you must get permission from the author. This usually takes a long time.
- Include a print out of permission (email is OK) in the bibliography.
- Refer to the Web Site list in this handout.



WARNING!

- Anyone can create a Web site; this does not mean its information is correct!
- Make sure the web site is run by a large, recognized group such as a college or organization.
- DOT “org” or “edu” are generally trustworthy for accuracy of content.

Web site samples that can be used for research:

Description	URL
Internet Public Library	http://www.ipl.org
Within the library, Kid friendly	http://www.ipl.org/div/kidspace/projectguide/
National Oceanic & Atmosphere Administration	http://www.noaa.gov/
Weather and ocean related phenomena	http://www.education.noaa.gov/
US Government web site for kids	http://www.kids.gov/
US Geological Survey (USGS)	http://www.usgs.gov/
Earthquake section of USGS	http://earthquake.usgs.gov/4kids/
Geology section of USGS	http://geology.usgs.gov/index.shtml
Fish and Wildlife (Department of the Interior)	http://www.fws.gov/
Discovery Channel Science Fair	http://school.discovery.com/sciencefaircentral/
Jet Propulsion Laboratory	http://jpl.nasa.gov/kids/
How Stuff Works	http://www.howstuffworks.com
Science page of How Stuff Works	http://www.science.howstuffworks.com

LIBRARY REFERENCES

150 PSYCHOLOGY & SOCIAL SCIENCES

510 MATHEMATICS

Number System
Arithmetic
Geometry

520 ASTRONOMY

Universe
Solar System
Moon
Planets
Meteors
Black Hole
Comets
Sun
Constellations
Telescope
Map Making

530 PHYSICS

Mechanics
Matter
Gravity
Simple Machines
Energy and Force
Solar
Coal
Gas
Nuclear
Sound
Light
Optics
Color
Prisms
Heat
Electricity
Magnetism
Atomic Energy and Force

540 CHEMISTRY AND ALLIED SCIENCE

Crystallography
Mineralogy



550 SCIENCES OF EARTH AND OTHER WORLDS

- Geology (Earth Science)
- Structure of the Earth
- Volcanoes
- Geysers
- Floods (Erosions)
- Caves
- Earthquakes
- Oceanography
- Meteorology
- Climatology and Weather
- Economic Geology
- Metals and Iron
- Water
- Gems

560 PALEONTOLOGY (Prehistoric Life)

- Fossils
- Dinosaurs
- Prehistoric Caves
- Cave Men
- Cave Art

570 LIFE SCIENCES

- Human Races
- Anthropology
- Primitive Societies
- Physical Anthropology
- Primitive Man
- Heredity
- Prehistoric Man
- Biology
- Evolution
- Microbes (Viruses)
- Microscopes

580 BOTANY

- Propagation
- Seeds, Flowers, Bulbs
- Types of Plants
- Wild Flowers
- Trees
- Vegetables
- Vines

