

LACSEF Project Categories

- **21** Junior Project categories
- **15** Senior Project categories



Animal Biology

- Evolutionary origins
- Genetics
- Growth
- Morphology
- Studies of animals in their natural habitat



Animal Physiology

- **Studies of major organ system functions involving:**
 - **Genetics**
 - **Immunology**
 - **Neurobiology**
 - **Pathology**
 - **Reproduction**
 - **Sensory biology**



Behavioral/ Social Sciences

- Psychology
- Human or Animal Behavior/Attitudes
- Linguistics
- Ethnology, Societal Values
- Anthropology/Archeology
- Learned/conditioned Responses
- Chemical & Physical Stress
- Reading Problems

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Behavioral/ Social Sci - Human

- Psychology
- Human Behavior/Attitudes
- Linguistics
- Societal Values
- Ethnology
- Learned responses
- Chemical & Physical Stress
- Reading Problems

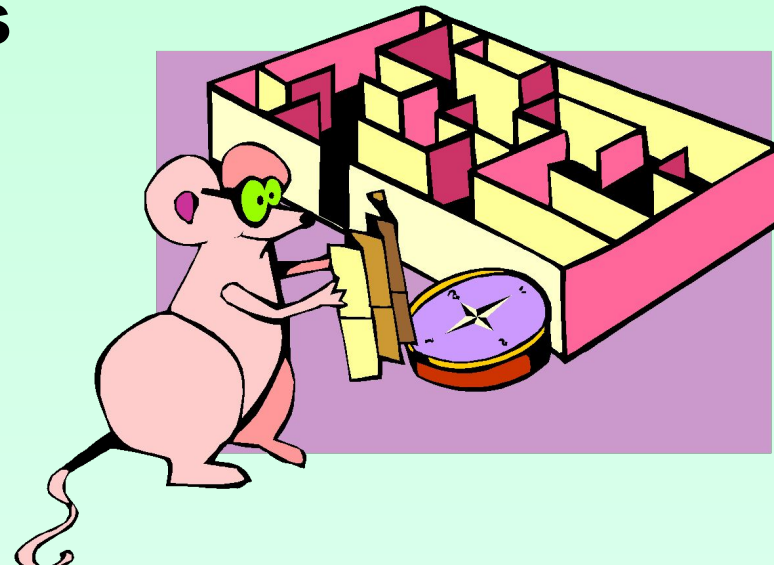
**JR Category
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Behavioral/ Social Sci – Non-human

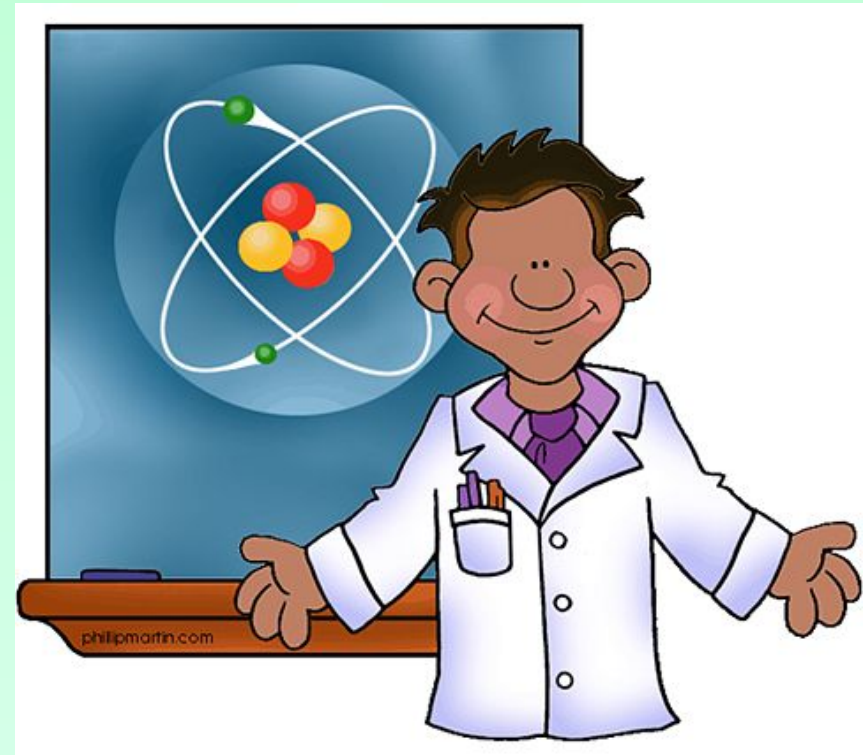
- Psychology
- Perception
- Animal Behavior
- Learned Responses
- Conditioned responses
- Group behavior
- Effects of chemicals on behavior

JR Category
ONLY



Biochemistry & Molecular Biology

- Molecular biology
- Molecular genetics
- Enzymes & Hormones
- Photosynthesis
- Blood chemistry
- Protein chemistry
- Food chemistry



Chemistry

- Physical Chemistry
- Inorganic Chemistry
- Organic Chemistry (*other than biochemistry*)
- Materials
- Pesticides
- Fuels, Plastics
- Metallurgy
- Soil Chemistry

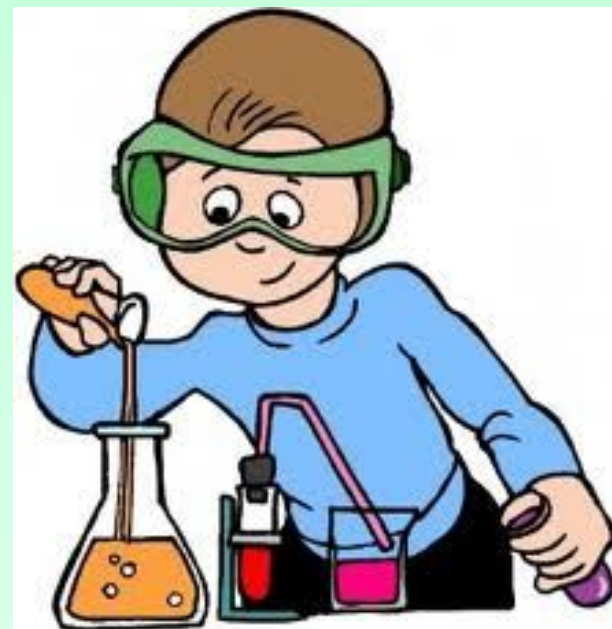
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Chemistry-Applied

- Measures and comparisons of durability
- Flammability
- Effectiveness for intended
- Product testing real world applications.

JR Category
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Chemistry (General)

- Physical Chemistry
- Materials
- Organic Chemistry (*other than biochemistry*)
- Fuels
- Pesticides
- Plastics
- Metallurgy
- Soil Chemistry

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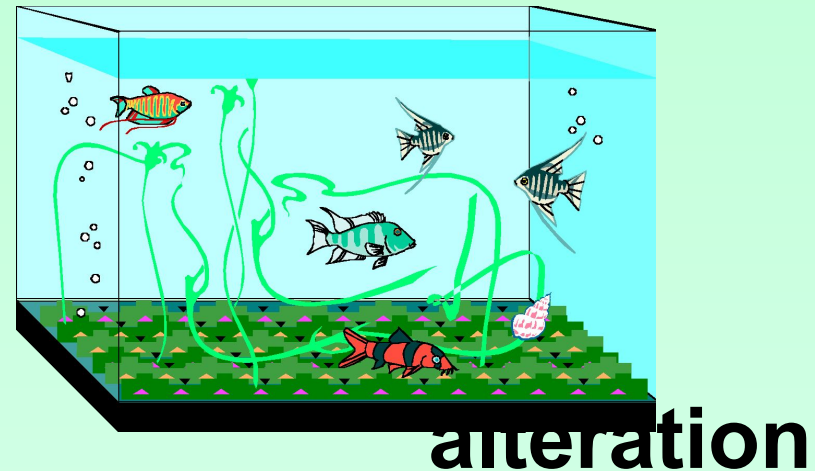
Earth/Space Science

- **Geology**
 - **Phys Oceanography**
 - **Meteorology**
 - **Atmospherics**
 - **Petroleum Geology**
 - **Mineralogy**
 - **Topography**
- Geography**
 - Seismology**
 - Speleology**
 - Geophysics**



Ecology

- Interaction of abiotic & biotic elements within any environmental investigation
- Pollution sources
- Impact studies
- Resource access
- Environmental



Engineering Applications

- **Project in which a potentially useful product is created**



Engineering Research

- Engineering analysis
- Tests of efficacy of commercial products
- Comparisons of physical or biomedical properties of commercial products



Environmental Management

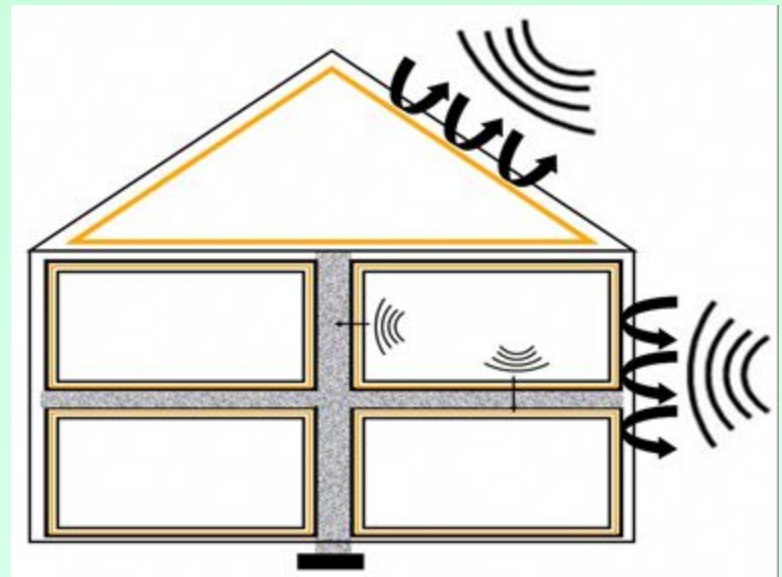
- **Conservation of natural resources and usage modalities**
 - **Crop rotation**
 - **Use of renewable energy sources**
 - **Terrace farming**
 - **Recycling**
- **Environmental protections**



Materials Science

- Studies of materials characteristics and their static physical properties
 - Thermal, electrical, acoustic, optical, electromagnetic, etc.

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Mathematics/Computer Sci

- Algebra
 - Number Theory
 - Statistics
 - Probability
 - Operations Research
 - New developments in software or hardware
 - Computer methodologies & systems organizations
 - Data structures, coding, encryption & information theory
- Calculus
 - Geometry
 - Logic
 - Complex Analysis
 - Information systems



Microbiology

- Bacteriology
- Studies of prokaryotes, Protists & Fungi
 - Genetics, growth, reproduction, and responses to chemical & physical stress



Pharmacology

- **Effect of any drug or chemical on any living animal or humans**
- **Studies can be at the cellular or organismal level**

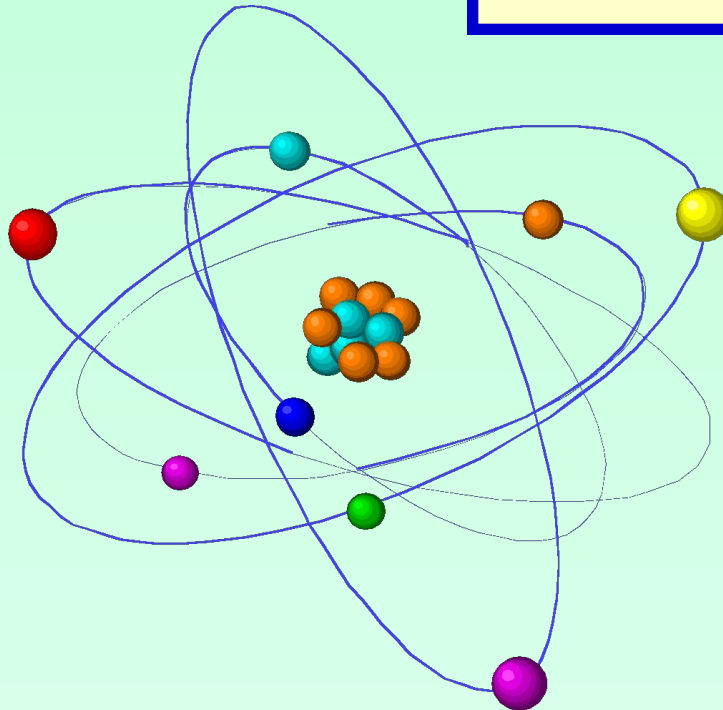


Physics

- **Experimental or theoretical studies of the physical properties of matter in all forms**

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- **Computer simulations of physical systems**

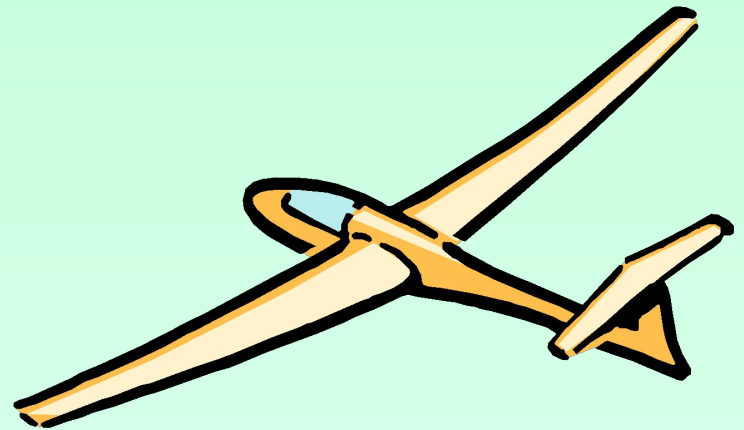


Physics -

Aerodynamics/Hydrodynamics

- **Studies of aerodynamics and propulsion of air, land, water, and space vehicles; aero/hydrodynamics of structures and natural objects.**
- **Studies of the basic physics of fluid flow.**

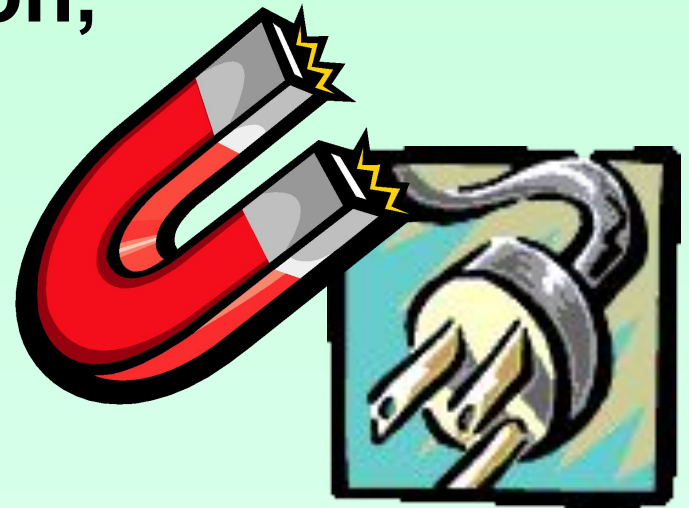
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Physics - Electricity & Magnetism

- Experimental or theoretical studies with electrical circuits, electro-optics, electromagnetic applications, antennas and propagation, and power production.

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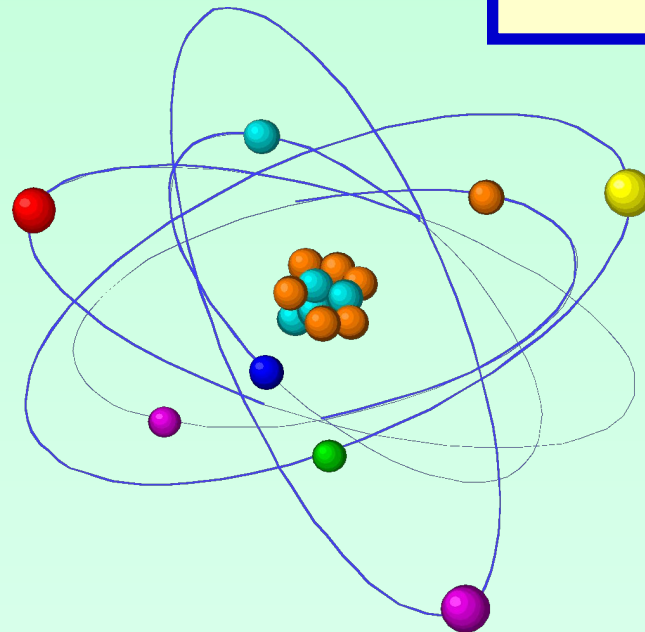


Physics - General

- **Experimental or theoretical studies of the physical properties of matter in all forms (*with the exception of fluids, electricity, and magnetism*)**

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- **Computer simulations of physical systems**



Plant Biology & Physiology

- Agriculture
- Agronomy
- Horticulture
- Hydroponics
- Forestry
- Mycology
- Plant Taxonomy
- Phycology
- Plant Genetics



- Studies of the major plant organ system functions involving:
 - Genetics
 - Immunology
 - Pathology
 - Reproduction

Product Science

- Comparison and testing of natural and man-made products

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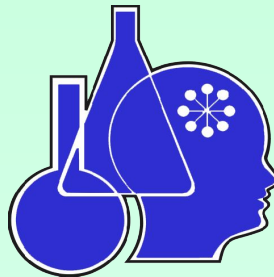
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