

## PROJECT TOPICS

### EXPERIMENT IDEAS

#### Plants

- How does the duration of light affect plant growth?
- How does the color of light affect the growth of plants?
- What are the effects of temperature on the germination of bean seeds?
- What is the effect of spacing on the growth of radish seeds?
- How does magnetism affect the height of bean seeds?
- To what extent does pH affect the germination of rye grass?
- What is the effect of different soil mixtures on plant growth?
- What is the effect of planting depth on the germination of seeds?
- To what extent do various concentrations of salt water affect plant growth?
- What is the effect of detergents on the germination of bean seeds?
- What is the effect of gravity on the roots of a plant?
- What is the effect of temperature on the ripening of a banana?

#### Animals

- How does different colored light affect the behavior of earthworms?
- How does the intensity of light affect crickets?
- What is the effect of background color on the color of a lizard?
- What is the effect of temperature on the behavior of fish?
- How do different levels of salinity affect shrimp?
- How do vibrations affect the behavior of ants?
- What is the effect of height above ground on the attraction of birds to a feeder?

#### Human Body

- Who generally have bigger hands (feet), boys or girls?
- Who are generally taller, boys or girls?
- Who generally have larger lung capacity, boys or girls?
- How does vision effect the sensation of taste?
- What is the effect of age on reaction time?
- To what extent does age effect the sensation of hearing?
- To what extent does age effect the sensation of smell?
- What is the effect of exercise on pulse rate (or blood pressure)?
- What is the effect of walking/skipping/running on respiration rate?
- Does listening to different types of music affect how well you can perform mental tasks?
- Does watching T.V. affect how well you can perform mental tasks?

## PROJECT TOPICS

### Earth & Space

Does the sun rise at the same time and in the same location in the sky?  
Does the moon rise at the same time and in the same location in the sky?  
What is the effect of freezing temperatures on rocks?  
To what extent do different types of soils retain water?  
What is the effect of rain on soil covered with different types of foliage?  
What is the effect of wind on different mixtures of soil?  
What is the effect of temperature on crystal growth?  
What is the effect of temperature on the evaporation of water?  
What is the effect of the length of a wing on the length of flight of a paper airplane?  
To what extent does sunlight affect the temperature of soil?  
To what extent does sunlight affect the temperature of water?  
How do different surfaces absorb the sun's energy?

### Physical

How does length, tension, or mass of a guitar string affect the pitch of sound?  
How do different solids affect the transmission of sound?  
What is the effect of heat on different liquids?  
What is the effect of household liquids and powders on red cabbage juice?  
How is the strength of a magnet affected by different materials (glass, cardboard, paper)?  
What is the best shape for a kite to lift off quicker?  
How is the distance a skateboard rolls affected by the amount of mass on the skateboard?  
To what extent does temperature affect the height that a ball will bounce?  
How do the number of batteries & the way they are connected affect the brightness of a bulb?  
How does the density of an object affect its buoyancy?

### Environmental

What is the effect of recycling on the amount of wastes that goes to the landfill?  
What materials that are thrown away at home could be reused at school for learning projects?  
How do oil spills affect feathered animals, furry animals, fish, sand and shells?  
Which plant and food wastes breakdown and can be composted easily into new garden soil?  
Which native plants will attract hummingbirds, butterflies, or more birds into an environment?  
Which native plants require less irrigation water and provide year round color to a landscape?  
What natural remedies are effective at controlling harmful insect that attack garden plants?  
What steps can be taken at home or school to reduce the trash sent to the landfill?  
What steps can be taken to reduce energy consumption in your home or school over time?  
What steps can be taken to reduce water use at home or school?

## PROJECT TOPICS

### ENGINEERING IDEAS - Design, test, and improve...

#### FLIGHT ENGINEERING

- ways weight can be used to balance wing length for the longest flight of a model airplane.
- the wing span of a model airplane to increase its flight air time
- different launch systems (vertical, 45 degree, and horizontal) for maximum flight distance
- safety restraint designs for infants traveling on aircrafts.
- sound separation systems to separate adult air passengers from crying babies.
- comfortable seating for longer flights

#### WASTE RECYCLING ENGINEERING

- a system to insure all paper, plastic and/or aluminum cans are being recycled properly
- a trash can to reduce the space recyclables such as paper, plastic, aluminum take up
- a trash can that motivates kids to sort recyclables properly
- new ways to reuse commonly wasted materials so they don't take up space in our landfill
- a system to reuse or recycle school supplies so they aren't wasted
- a way to keep people from disposing of harmful liquids and solids down the sink drain
- a way to reuse old clothes
- inexpensive and safe ways to compost vegetation and/or food scraps back into soil

#### MECHANICAL ENGINEERING

- your favorite furniture
- your favorite sports equipment
- easy, safe ways to mount you favorite music player to your bike
- a wind powered device that moves water up hill
- a rubber band powered cart or train (connected carts)
- a hand powered coin sorter
- a mechanical arm that throws balls to a hitter
- a Ping-Pong ball throwing catapult

#### ENERGY CONSERVATION ENGINEERING

- a portable solar powered chocolate s'more cooker
- an LED clock powered by a fruit or veggie battery
- a wind powered LED light reading visor
- a solar powered personal fan for a baseball cap
- a solar powered speed racer