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## A STUDENT'S GUIDE TO SCIENCE TOPICS AND IDEAS

### North Kitsap Elementary Science Program

How does sugar affect the growth of yeast?

What is the effect of moon phases on seed germination?

What is the effect of auto exhaust on plant growth?

What effects does temperature have on the activity of earthworms?

Can earthworms tell left from right?

What is the effect of salt on the growth of plants?

Do snails or earthworms travel faster?

How is the behavior of ants affected by coffee grounds?

How much water is in an orange?

Does sugar prolong the life of cut flowers?

What effect does the amount of salt have on the ability of an egg to float?

What effects does salt have on ice at different temperatures?

How does salt affect the rate of temperature change in water?

Which antacid is really the best?

What is the pH of rain and/or snow?

Which materials absorb the most water?

Which brand of popcorn pops the fastest?

Which type of juice cleans pennies the best?

What is the best concrete mixture?

Which dish soap makes the most bubbles?

Do watches keep time the same?

On which surface can a snail move faster – dirt or cement?

What brand of raisin cereal has the most raisins?

Does the shape of the magnet determine its strength?

Can more powerful magnets or electromagnets “float” straight pins higher over the table?

Do ants like cheese or sugar better?

Can the design of a paper airplane make it fly farther?

Do roots of a plant always grow downward?

Can you tell what something is just by touching it?

What kind of things do magnets attract?

What foods do mealworms prefer?

How long will it take a drop of food dye to color a glass of still water?

Does a bath take less water than a shower?

Can you tell where sound comes from when you are blindfolded?

Can plants grow without soil?

Does warm water freeze faster than cool water?

In my class who is taller – boys or girls?

Do different types of apples have the same number of seeds?

Do bigger seeds produce bigger plants?

Which materials absorb the most water?

Do wheels reduce friction?

What materials dissolve in water?

What is the soil in my schoolyard made of?

Does holding a mirror in front of a fish change what a fish does?

What color of birdseed do birds like best?

What holds two boards together better – a nail or a screw?

Which type of nail rusts faster in a test tube of fresh water and salt water?—two separate experiments

Will bananas brown faster on the counter or in the refrigerator?

Does temperature affect the growth of plants?

Do mint leaves repel ants?

Does a ball roll farther on grass or dirt?

Do all objects fall to the ground at the same speed?

Do children have the same basic fingerprints pattern (right thumb) as their parents?

Does anyone in my class have the same fingerprints?

Which travels faster – a snail or a worm?
Which paper towel is the strongest?
Can plants grow from leaves?
Which dissolves better in water – salt or baking soda?
Can things be identified by just their smell?
With which type of battery do toys run longest?
How far does a snail travel in one minute?
Do different types of soil hold different amounts of water?
Will adding bleach to the water of a plant reduce fungus growth?
Does water with salt boil faster than plain water?
How far can a person lean without falling?
Can you tell time without a watch or clock?
How far can a water balloon be tossed to someone before it breaks?
Does the shape of a kite affect its flight?
Does an ice cube melt faster in air or water?
Which liquid has the highest viscosity?
Will more air inside a basketball make it bounce higher?
Does the color of light affect plant growth?
Does baking soda lower the temperature of water?
Which brand of popcorn pops the most kernels?

How much can a caterpillar eat in one day?

In my class who has the biggest feet – boys or girls?

Do plants grow bigger in soil or water?

Does the color of water affect its evaporation?

Can you separate salt from water by freezing?

How does omitting an ingredient affect the taste of a cookie?

How does the amount of sugar, salt, or eggs affect the taste, texture, and appearance of sugar cookies?—three separate experiments

How does the amount of baking soda or shortening or corn meal affect the taste, texture and appearance of cornbread?—three separate experiments

Do suction cups stick equally well to different surfaces?

Which student in class has the greatest lung capacity?

How much weight can a growing plant lift?

Will water with salt evaporate faster than water without salt?

Does it matter in which direction seeds are planted?

Which cheese grows mold the fastest?

Do all colors fade at the same rate?

Which brand of diaper holds the most water?

In my class who has the smallest hands – boys or girls?

Which kind of cleaner removes ink stains best?

Does a plant grow bigger if watered by milk or water?

Which brand of soap makes the most suds?

Does a baseball go farther when hit by a wood or metal bat?

Do living plants give off moisture?

Using a lever, can one student lift another student who is bigger?

What gets warmer – sand or dirt?

Which kind of glue holds two boards together better?

What type of line carries sound waves best?

How much weight can different fishing lines and leaders actually bear before breaking?

Can the sun's energy be used to clean water?

Does a green plant add oxygen to its environment?

Which metal conducts heat best?

Which chemicals corrode metals the most?

What percentage of corn seeds in a package will germinate?

Does an earthworm react to light and darkness?

Does the human tongue have definite areas for certain tastes?

Can same-type balloons withstand the same amount of pressure?

Does the viscosity of a liquid affect its boiling point?

Does surrounding color affect an insect's eating habits?

Do children's heart rates increase as they get older?

Does increasing the sound volume increase the heart rate?

What materials provide the best insulation?
Is using two eyes to judge distance more accurate than using one eye?
Do different kinds of caterpillars eat different amounts of food?
What plant foods contain starch?
What keeps things colder – plastic wrap or aluminum foil?
Does heart rate increase with increasing sound volume?
Do boys or girls have a higher resting heart rate?
Do liquids cool as they evaporate?
Which way does the wind blow most frequently?
Does the size of a light bulb affect its energy use?
For how long a distance can speech be transmitted through a tube?
Which grows mold faster – moist bread or dry bread?
What type of soil filters water best?
Does the color of a material affect its absorption of heat?
Does sound travel best through solids, liquids, or gases?
How do colored filters affect perceptions of color of objects?
How does length, tension, or mass of a string affect the pitch of sound?
How do different solids affect the transmission of sound?
To what extent do different metals conduct heat?
What is the effect of temperature on the volume of air?

What is the effect of heat on different liquids?
To what extent do different insulating materials affect heat loss/gain of water?
How does the color of an object affect its reflection and absorption of solar energy?
What is the effect of household liquids and powders on the indicator bromothymol blue (BTB)?
How does wattage affect the radiation of heat from a light bulb?
How do different fabrics affect heat loss from an object?
Which type of fabric used for clothing burns the fastest?
To what extent does air temperature affect the height that a ball will bounce?
How does the number of batteries and the way they are connected affect the brightness of a bulb?
How does the number of batteries and the way they are connected affect the strength of an electromagnet?
How does the number of wraps of wire around an electromagnet affect its strength?
What is the effect of the size of the iron core on the strength of an electromagnet?
To what extent does the length of string affect the period of a pendulum?
To what extent does weight of the bob affect the period of a pendulum?
What is the effect of density of the object on the buoyancy of an object?
What is the effect of different detergent solutions on the surface tension of water?
What is the effect of freezing temperatures on rocks?
To what extent do different 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?

How does saturation affect crystal growth?

To what extent does depth affect water pressure?

What is the effect of temperature on evaporation of water?

What is the effect of air pollution on precipitation?

To what extent does altitude affect air pressure?

What is the effect of design 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?

To what extent does humidity affect evaporation?

How does the pH of rain affect limestone?

What is the effect of time of day on a shadow?

To what extent does the season affect shadow length?

To what extent does the season affect shadow direction?

How does the angle of the sun affect the temperature of land or water?

How do different surfaces absorb the sun's energy?

How do convection currents affect air currents?

How does slope affect stream velocity?

How far with liquids of different viscosities flow down an inclined plane?

Which brand of ski wax makes a ski go the farthest?
What is the effect of gravity on the roots of a plant?
What is the effect of temperature on the ripening of a banana?
How does moisture affect the growth of bread mold?
How does temperature affect the activity of mealworms?
How do different colors affect the behavior of mealworms?
To what extent does amount of food affect the population size of mealworms?
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 chameleon?
What is the effect of temperature on the behavior of goldfish?
How do different levels of salinity affect brine shrimp?
What is the effect of moisture on yard snails?
How do vibrations affect the behavior of ants?
What is the effect of height above ground on the attraction of birds to a feeder?
What is the effect of caffeine on blood pressure?
How does vision affect the sensation of taste?
What is the effect of age on reaction time?
How does your gender affect sensations of touch?
To what extent does age affect the sensation of temperature?

To what extent does age affect the sensation of smell?
What is the effect of exercise on blood pressure?
What is the effect of sleep on respiration rate?
What is the effect of skipping/running on respiration rate?
What is the effect of left/right handedness on reaction time?
To what extent does the amount of light affect acuity of vision?
How does color affect perceived taste sensations of noncarbonated beverages?
What is the effect of processing on the vitamin C content of fresh orange juices and orange juice concentrates?
To what extent does temperature affect the vitamin C content of orange juice?
To what extent does exposure to air affect the vitamin C content of grapefruit juice?
Do sugar crystals grow faster in tap water or distilled water?
Can you see better if you limit the light that gets to your eye?
How much of an apple is water?
What common liquids are acid, base, or neutral?
Do taller people run faster than shorter people?
Does the length of a vibrating object affect sound?
Does a plant need some darkness to grow?
Who can balance better on the balls of their feet – boys or girls?
How does the rotation of a foot in the air affect a child's ability to draw the number 6?
Does exercise affect heart rate?

What beverages affect a child's blood pressure the most?

Which dish soap makes the longest lasting suds?

Does dye in soap affect its effectiveness in killing germs?

What brand of nail polish is the easiest to remove after just one coat?

What are the effects of chlorine on plant growth?

Which type of oil has the greatest density?

How accurately do people judge temperature?

How is seed germination affected by:

- amount of water?
- salt content of water?
- temperature?
- acid rain?
- different fertilizers?
- different soils?
- vibration?
- rotation?
- electricity?
- amount of mulch?
- type of mulch?

How is the growth of plants affected by:

- humidity?
- type/amount/periods of light?
- type/amount/periods of water?
- turning?
- temperature?
- sound/music?
- type of soil?
- acidity of soil?
- soil mixtures?
- soil stratification?
- type of fertilizer?
- amount of fertilizer?

electricity?  
cigarette smoke?  
salt content of water?  
vibration?  
rotation?  
orientation after germination?  
magnetic fields?  
different gases?  
caffeine?  
thickness of mulch?  
type of mulch (plastic or organic)?  
type of light (sun or lamp)?  
color of light?  
amount of light?  
direction of light (top, bottom, or side)?  
soap or detergent?  
amount of various gases in the air?

Can refrigerator rejects help plants grow?

How is seed germination affected by a pre-planting condition of:

boiling?  
microwave heating?  
soaking in different liquids?  
electric shock?  
dental x-rays?

How is metal corrosion affected by:

amount of table salt in water?  
amount of other chemicals in water? (such as Epsom salts or sugar)  
liquids?  
temperature?  
humidity in air?  
acids like vinegar?  
bases like baking soda?  
type of metal?  
surface condition?

How is electrical conductivity affected by:

type of material?  
type of liquid?  
chemicals in liquids?

temperature?

How does the speed of revolution on an electric windmill affect the amount of electricity produced?

How is heat conducted through solid materials affected by:

type of material?

moving or still air at surface?

moving or still liquid at surface?

temperature of material?

How is heat absorbed from the sun or a sun lamp affected by:

color or solid material?

color of liquid?

How does temperature affect the frequency that a cricket chirps?

What compost breaks down the fastest?

How is composting efficiency affected by:

amount of lime or other chemicals used?

type of organic materials (food, leaves, and so on) used?

amount of water?

temperature?

amount of air?

light?

How is algae growth affected by:

soaps?

temperature?

sunlight?

amount of chlorine?

How is root growth affected by:

soil type?

vitamins?

type of fertilizer?

How is fermentation affected by:

amount of yeast?

amount of sugar?

temperature?

light?

How is battery life affected by:  
temperature?  
slow or fast use?

How much is friction changed by:  
lubricants?  
temperature?  
surface roughness?  
bearing type?

How is the holding strength of glues, adhesives, or fasteners such as nails, screws, or rivets affected by:  
type of glue?  
type or size of nail or screw?  
material of rivet?  
type of materials being bonded?

How is bending a nail until it breaks (fatigue) affected by:  
speed of bending?  
diameter of nail?  
material of nail?  
movement of each bend?  
temperature?

How long does food last when stored in different containers or encased by different food wrappings?

Which brand of stain remover works best?

Which type of packing material is best for protection against shock or breakage?

How long do various amounts of aspirin extend the life of cut flowers?

How is the speed of a model car or boat affected by:  
shape?  
weight?  
area?  
model car wheel bearings?  
water temperature for boats?

How is the dissolving speed of powders (like salt) or solids (like candy) affected by:  
stirring?  
heating?  
type of liquid?  
amount of liquid?

How is magnetic recording tape affected by temperature?

How is magnetic erasure of recording tape affected by:  
strength of magnet?  
distance from magnet to tape?  
temperature?

How is the height of a bouncing ball affected by:  
size of ball?  
height from which ball is dropped?  
temperature of ball?  
temperature of surface?  
material of ball or surface?

How is shoe traction affected by:  
pattern in the sole?  
sole material?  
weight of the wearer?

How is traction of a bicycle tire affected by:  
pattern in the tire?  
weight of rider?

How does baseball bat material (wood or aluminum) affect hitting distance?

How is parachute falling speed affected by:  
shape of chute?  
shape of hole(s)?  
size of chute?  
size of hole?  
number of holes?  
placement of holes?  
material?  
weight?

How is the stretch length of rubber bands affected by:



weight attached?  
width?  
length?

How is paper/model airplane distance affected by:

design of plane?  
design of body?  
design of wings?  
type of paper?  
distribution of weight?  
amount of weight?  
angle of launch?

Of several different soil surfaces, which erodes the least?

How does terracing affect soil erosion?

How does temperature affect people's ability to taste differences in:

meats?  
soft drinks?  
sweets?

How is sail performance affected by:

shape?  
weight?  
material?  
size?  
angle to wind?

How does the performance of a plastic or metal sail compare to a fabric sail?

How is lift of a model airplane affected by the design of the wing?

What are the differences in flight among model airplanes with flat and curved wings?

How effective are different sun screens in blocking the UV rays of the sun?

How effective are different sunglasses' materials in blocking light?

Does cooking food affect the amount of vitamin C remaining in food?

Does temperature affect the electricity generated by a solar cell?

How is the rolling speed of a ball affected by:  
material?  
size?  
weight?  
angle of ramp?

Which metal bar can bear the most weight before bending?

How much weight can different models of house designs bear?

How good are air spaces of different thickness as heat insulators?

Which building materials in walls insulates best in terms of heat and sound?—2 experiments

Which material insulates the best to retain heat?

How much are fabrics damaged by:  
pollutants in water or air (such as tobacco smoke)?  
sunlight?  
number of washings?  
type of detergent?

How is the hardness of different types of wood affected by:  
moisture?  
temperature?

How is dough/cake rising affected by:  
yeast?  
temperature?  
sound?  
vibration?  
sugar content?  
salt content?

How is stained or painted wood affected by:  
sunlight?  
temperature?  
type of wood?  
type of stain or paint?  
humidity/moisture?

