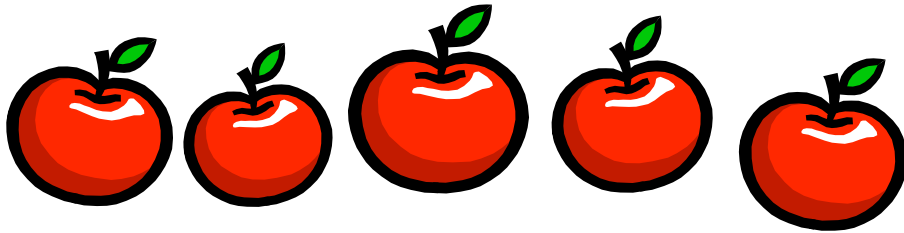
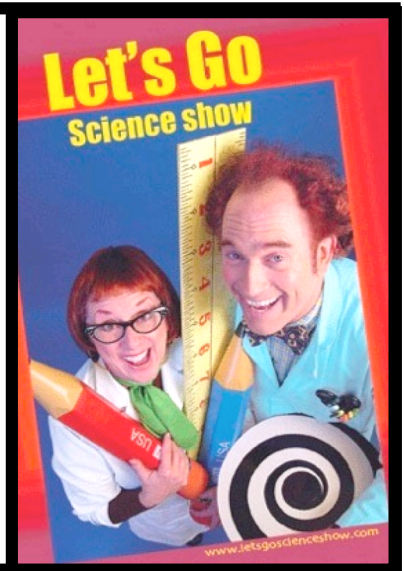


Let's Go Science Show



Take Home Materials

For Grades 4-8



What resource do you possess that grows as you learn?

Solve this riddle by matching each word to its definition. Write the letter or symbol from the definition's arrow in the box next to the word it describes.

	ATMOSPHERE	A transparent substance with curved sides for concentrating or dispersing light.	E
	ELECTRONS	The support point of a lever (as under a teeter-totter).	N
	ENERGY	Charged particles that orbit the nucleus of an atom. Their flow produces electricity.	R
	FORCE	Measuring the size or amount of a thing or an activity.	!
	FULCRUM	A push or pull capable of moving an object.	I
	THEORY	A physical property of all things: An object in motion stays in motion and an object at rest stay at rest unless forces act on it.	W
	GAS	The quantity of matter that any body contains.	R
	HYPOTHESIS	An idea or explanation that is based on facts but has not yet been proven.	O
	INERTIA	A detailed explanation for the results of an experiment.	-
	LENS	The mixture of gases that surrounds the earth and other planets.	B
	MASS	The ability to do work or provide power.	A
	QUANTIFY	A substance that does not have a definite shape or volume.	P



Show Off to Your Family, Your Friends, Your Dog...
Be a Scientist in Your Own Home With These
Simple Experiments



Bending Light Experiments

Light can play tricks on your eyes! Try these easy experiments.

The Rising Coin

Materials you will need:

- A Coin
- Water
- A Plastic or Glass Bowl
(not see-through/not transparent)

Steps:

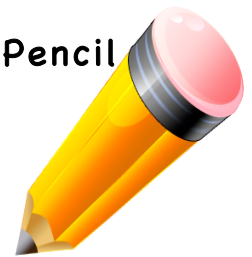
1. Put the coin in the bowl.
2. Walk backwards until you cannot see the coin in the bowl any more.
3. Have someone pour water slowly into the bowl.
4. Watch the bowl from where you are standing.
5. What do you see?

When the bowl is empty, the edge of the bowl stops you from seeing the coin. When the bowl is full, the light bends over the edge, so you can see the coin. Have you noticed that things at the bottom of a pool or river always look closer to the surface than they really are? This is because of the way light is bent (refracted) through water.

The Bending Pencil

Materials you will need:

- A Pencil
- Water
- A Clear Glass or Jar



Steps:

1. Fill the glass or jar half way with water.
2. Place the pencil in the water.
3. Look at the pencil from the top.
4. Look at the pencil from the bottom
5. Look at the pencil from the sides.
6. What do you see?

Straight or bent? What happens when you look at the pencil through the side of the glass? Light plays tricks on your eyes.

The pencil looks bent. This is because light travels slower through water than through air. As the light enters the glass of water it slows down and changes direction, and as it leaves the glass it speeds up again – making the pencil look bent!

From: <http://www.kids-science-experiments.com>

STATIC ELECTRICITY

Rising Tissue Paper

Materials you will need:

- Scissors
- Tissue Paper
- A Clean Head of Hair
- A Plastic Comb or Pen

Steps:

1. Cut up some small pieces of tissue paper.
2. Give your comb or pen a static charge by rubbing it against a sweater or combing it through your clean hair about ten times.
3. Hold the comb or pen over the small pieces of tissue paper.
4. Watch as the tissue paper is pulled up by the charged comb or pen.

When you rub the comb through your hair (or on wool) electrons on your hair move to the comb giving it a negative static charge. The comb is neutral and has no static charge, but is attracted to the negatively charged comb. When the comb touches the paper some of electrons will move onto the paper, reducing the static charge.



Bending Water

Materials You Need:

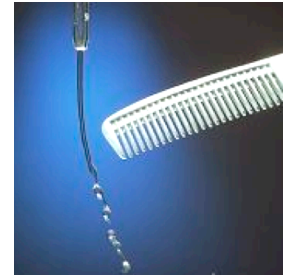
- A plastic comb
- A Clean Head of Hair or a Wool Sweater
- Running Tap Water

Steps:

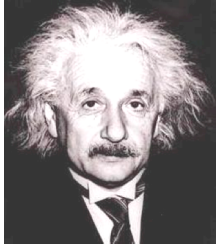
1. Rub the plastic comb against your jumper or comb through your hair around ten times.
2. Turn the tap on so that it has a slow, steady stream of water.
3. Place the comb close to the water (don't let the comb touch the water).
4. What does the water do?

The water bends toward the comb. This is because the comb has been charged and pulls on the water; which is uncharged (or neutral). The water is attracted to the comb.

From: <http://www.kids-science-experiments.com>



GIANTS OF SCIENCE



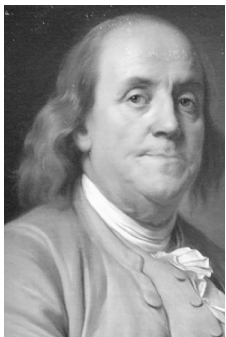
Albert Einstein-
found $E=mc^2$. Energy can
create matter (things)
and matter and light "c"
can create Energy.



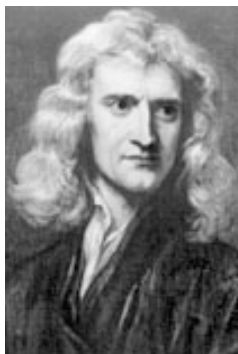
Thomas Edison-
invented the light bulb,
electric power lines,
sound recording, and
motion picture
recording.



Madame Curie-
discovered radioactive
elements and was a
leader in the use of
x-rays for medical
evaluation



Benjamin Franklin -
invented many things,
the lightening rod, bi-
focal glasses, an
odometer to measure
miles traveled, wood
burning stoves to heat
homes, and more



Sir Isaac Newton -
discovered laws of
motion and laws of
gravity that are used to
predict the motion of
the planets, stars, and
falling objects He also
invented integral

COOL WEBSITES FOR KIDS



<http://www.hhmi.org/coolscience/>

<http://www.brainpop.com/science/seeall/>

<http://www.questacon.edu.au/kids.asp>

<http://www.kids-science-experiments.com/>

<http://www.nasa.gov/audience/forkids/home/index.html>

<http://www.chem4kids.com/>

<http://www.strangescience.net/>

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

Build Your Own Virtual Roller Coaster-



Using the principals of physics.

<http://www.learner.org/interactives/parkphysics/coaster.html>

Lot's of Fun and Educational Projects



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

Explore Science From Every
Perspective



<http://www.madsci.org>

Fun with Physics

WORD SEARCH

WORDS:

ARISTOTLE
 ATMOSPHERE
 ATTRACT
 BENJAMIN
 COMPRESS
 CONCLUSION
 DRAG
 ELECTRONS
 ENERGY
 FORCE
 FRANKLIN
 FRICTION
 FULCRUM
 GALILEO
 GAS
 GRAVITY
 GUESS
 GYRO
 GYROSCOPIC
 HYPOTHESIS
 INERTIA
 INVENT
 INVENTOR
 LENS
 LIFT
 LIQUID
 MACHINE
 MASS
 MATTER
 MICROSCOPE
 MOMENTUM
 NUCLEI
 PRESSURE
 PROPEL
 QUANTIFY
 QUARK
 QUESTION
 REPEL
 SCALE
 SCIENCE
 SCIENTIST
 SOLID
 STATIC
 STRATOSPHERE
 THEORY
 THRUST
 VACUUM
 VELOCITY
 WEIGHT
 WING

A L A C H M G B L Z R E V E L O C I T Y
 S L T S K C I A I W Q K G R V P O R H U
 V D B S Z F T D L Z M Y H U N R M V G F
 P Q W E D M A I M I C R O S C O P E I V
 C F D U R Z F O D I L O S S J P R K E X
 B U D G A T M O S P H E R E H E E C W F
 Y L O J G E E D A L X H O R H L S S X H
 R C R O N T S I S E H T O P Y H S H D P
 N R Q T S K U E N N O Z S R J A D C U V
 K U U C O N C L U S I O N I M A J N E B
 P M A T A R I S T O T L E A T T R A C T
 W L N Q O E P M F A U E K N G N I W N T
 E F T F U P O O R A L N I N R Y E J E H
 N Y I A W E C T I E I I S N A G G I I R
 S X F M I L S A C Q Q H N R V R R A C U
 Z X Y V H T O T T N U C L E I E F X S S
 Y J A Y A J R U I R I A F Y T N N B K T
 Z K U T W O Y E O O D M R T Y E N T A J
 Z V I E N U G N N H N D A K C B M L O Z
 L C M S A N E K B I J M U U C A V G Y R

THIS CAN BE TOUGH!!

TRY TO FIND AS MANY OF THE 54 VOCABULARY WORDS
 USED IN THE SCIENCE SHOW AS POSSIBLE.

TRY TO NOT USE THE SOLUTION SHEET ON THE NEXT
 PAGE UNTIL YOU ARE STUCK.

LOOK UP ANY WORDS YOU DO NOT KNOW.

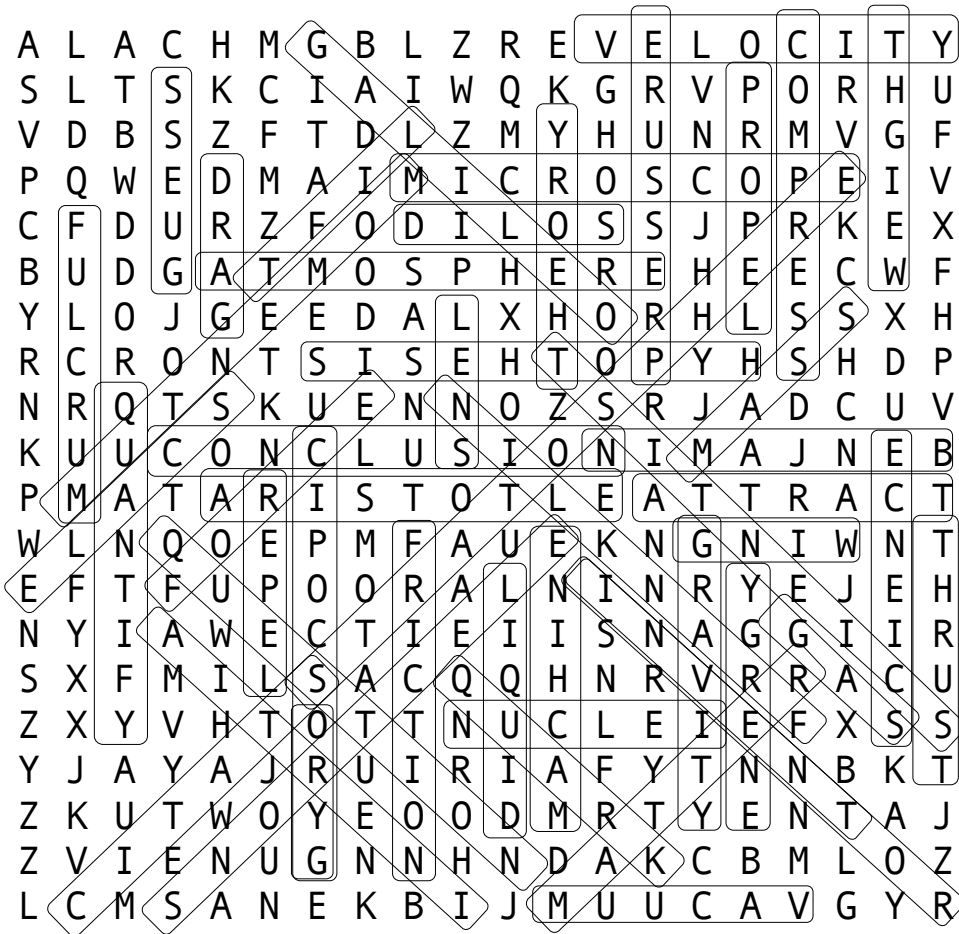
GOOD LUCK FROM PROFESSOR SMART

Example: HYPOTHESIS

Look at every H to find one with a Y next to it in any direction.

When you find an HY and then P is the next letter in line you may have
 found the whole word. Circle it and cross it off your list. Words are in line:
 up, down, forward, backward and also diagonal in all directions.

WHOA! WHAT A WORD SEARCH SOLUTION!



You've got it -
BRAIN-POWER!

