January 23, 2019

Dear Students and Families,

At this time each year, we begin to explore our various interests and passions about science. Our annual Science Fair is an opportunity to develop and test questions you have about the world around you. We conduct the fair in conjunction with the Brookhaven National Lab Science Fair. **It is mandatory that ALL of our 5th grade students participate in the science fair because the 5th grade curriculum revolves around the scientific method.** Since the scientific method is best learned through projects and experiments, the science fair project is an integral part of the children's learning process. Students will be presenting their projects to their classmates beginning March 8th and displaying their experiment in the large gym on March 12th Please make sure all projects are handed in on time.

Enclosed in this packet, you will find many ideas and websites for science fair projects to aid in the decision making process. You will also find a sheet with suggested science fair formats.

Remember your teachers are here to provide support through this process. We look forward to some interesting and exciting projects!

* Important Dates *

** Project title submitted by:	February 8th
** Project outline submitted by:	February 15th
** Project due date:	March 8th
** Science Fair:	March 12th

Student Signature _____

Parent/Guardian Signature _____

****Forms are included in enclosed packet.**

Science Fair Project Proposal

Name:_____ **Date:**_____

The following is a proposal for my science fair project:

Title of the Project: Choose a title that describes the effect or thing you are investigating. The title should be short and summarize what the investigation will deal with.

_____

State the Purpose of the Project: What do you want to find out? Write a statement that describes what you want to do. Use your observations and questions to write the statement.

_____

_____

_____

*Return this completed proposal by Feb 8th, 2019 *

Student's signature _____

Parent's signature _____

Teacher's signature _____

* Return by: February 15th *

NAME:

Question:

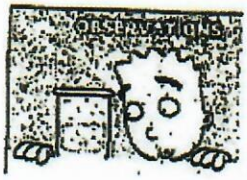
Materials:

Variables:

Independent variable: _____

Dependent Variable: _____

Controlled Variable: _____



NAME_____DATE_____

SCIENCE EXPERIMENT FORMAT

TITLE

I. Question: (What are you trying to find out?)

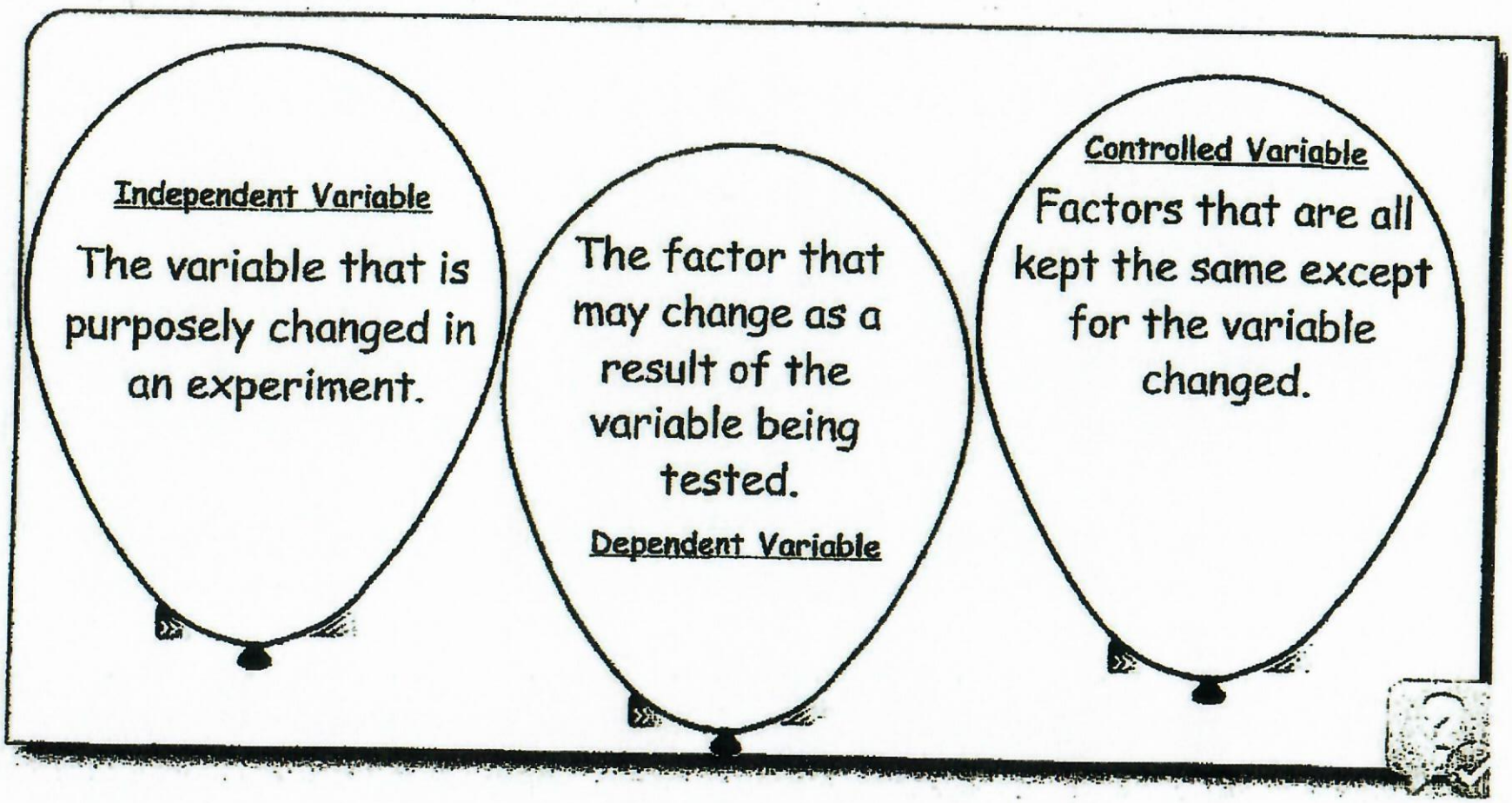
II. Hypothesis: (What is you guess of the results or outcome?)

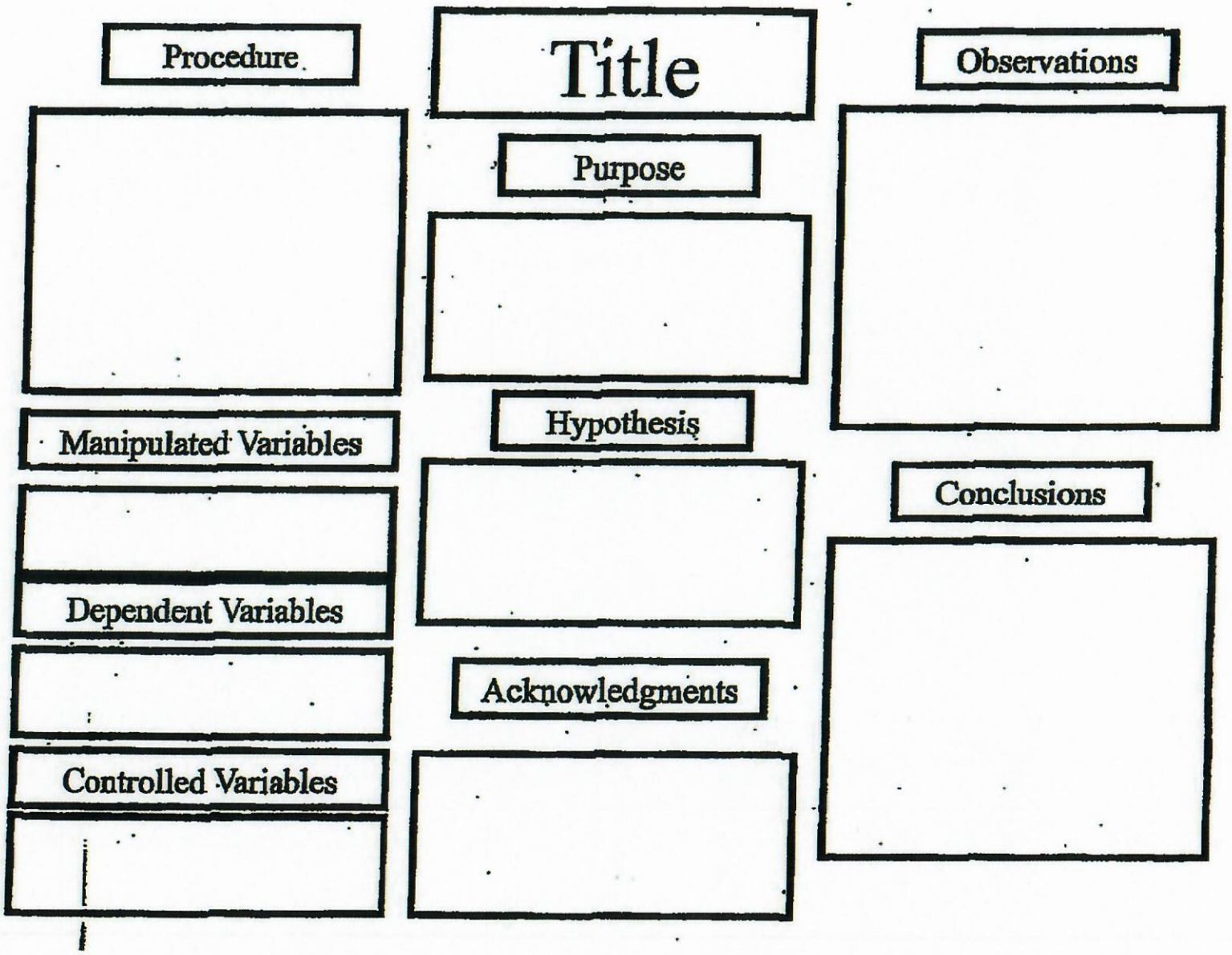
III. Materials: (A list of everything you need to carry out your experiment.)

IV. Variables: Manipulated, Controlled, Dependent
Procedure: (List the steps:
1.
2.
3. etc...
you take to go through your experiment; careful, concise statements)

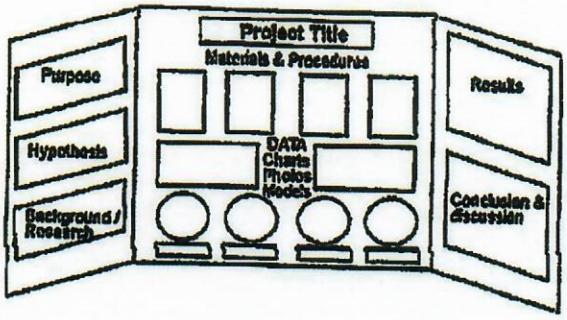
V. Observations: (What do you see happening? timed recordings: seconds, minutes, hours, days,etc. --time record depends on your particular experiment; color change, growth rate, etc.)

VI. Conclusion: (What can you say to summarize what you observed from your experiment? Answer your question in step # 1.)


Independent Variable
The variable that is purposely changed in an experiment.
The factor that may change as a result of the variable being tested.
Dependent Variable
Controlled Variable
Factors that are all kept the same except for the variable changed.


Procedure
Title
Observations
Purpose
Manipulated Variables
Hypothesis
Conclusions
Dependent Variables
Acknowledgments
Controlled Variables

For almost every science fair project, you need to prepare a display board to communicate your work to others. In most cases you will use a standard, three-panel display board that unfolds to be 36" tall by 48" wide.



Organize your information like a newspaper so that your audience can quickly follow the thread of your experiment by reading from top to bottom, then left to right. Include each step of your science fair project: Abstract, question, hypothesis, variables, background research, and so on.

Science Fair Project Display Board Checklist

What Makes for a Good Science Fair Project Display Board?	For a Good Science Fair Project Display Board, You Should Answer "Yes" to Every Question
Does your display board include: • Title • Abstract • Question • Variables and hypothesis • Background research • Materials list • Experimental procedure • Data analysis and discussion including data chart(s) & graph(s) • Conclusions (including ideas for future research) • Acknowledgements • Bibliography	Yes / No
Are the sections on your display board organized like a newspaper so that they are easy to follow?	Yes / No
Is the text font large enough to be read easily (at least 16 points)?	Yes / No
Does the title catch people's attention, and is the title font large enough to be read from across the room?	Yes / No
Did you use pictures and diagrams to effectively convey information about your science fair project?	Yes / No
Have you constructed your display board as neatly as possible?	Yes / No
Did you proofread your display board?	Yes / No
Did you follow all of the rules pertaining to display boards for your particular science fair?	Yes / No

For more ideas: www.sciencebuddies.org
www.allsciencefairprojects.com

Hands on Science, Inc.
631-473-0678

"DEAD MEN DO TELL TALES"

FORENSIC ARCHAEOLOGY

Grades 5 and up

Learn how forensic specialists read bones to uncover clues.
Understand the scientific principles relating to the study of the human skeleton & become a forensic archaeologist!

Using real human bones, students are introduced to the science of forensic archaeolgy.
As teams of Forensic Specialists, they are challenged to examine the bones for clues.

Students hypothesize about the person's age, gender and possible demise.

CAN YOU DIG IT?

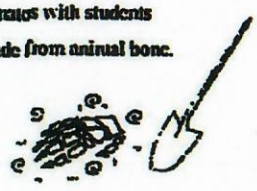
Grades 4 and up

An engaging program that introduces students to the science of comparative anatomy.

Following an introduction into the science of 'reading' bones, students compare and contrast a variety of real bones from different animals.

Teams 'dig' through bones and are challenged to hypothesize about the origin, type and name of different bones.

The program culminates with students creating a necklace made from animal bone.



a PLETHORA of POLYMERS...

GOT FLUBBER?

Grades 3-5

The magic of chemistry right in your hands!
Combine a known substance with other molecules to create a new substance...Flubber!
Using everyday substances and household materials, participants make a stringy, bouncy creation while exploring states of matter, molecules, polymers and chemical reactions.

LET GRAVITY GRAB YOU

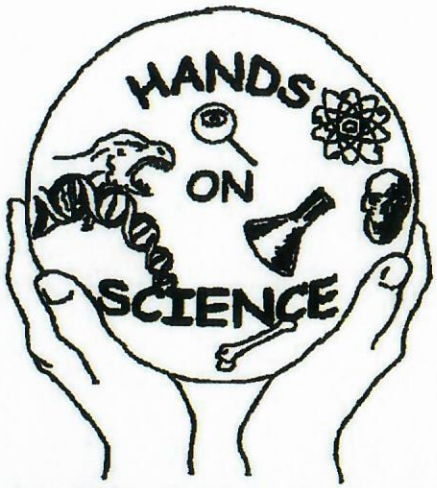
Grades 2 & up

Find your center....of gravity, that is.

After an introduction that includes a discussion about Newton & Galileo, participants will discover the pull of gravity at several hands on stations.

Participants make a balance toy to take home.

Approved by the NY State Board of Education



EXPLORE THE WORLD OF SCIENCE

Chemistry
Physics
Genetics
Buoyancy
Gravity
Forensics
Crime Scene Investigation
Biodiversity/Adaptation

Hands-on Experiments
Take Home Projects

www.handsonscienceinc.com

Hands on Science, Inc.

offers an interactive, exciting and fun way to explore the world of science.

Programs are designed to educate students on the wonder of physics, the mysteries of genetics, the intrigue of forensics, the extraordinary design of the human body, and more!

Hands on experiments and projects offer students a unique opportunity to experience science first hand!

Programs offered at your site, and can be customized to meet your individual needs.

Program Length: 50-60 minutes

PROGRAMS START AT $200.00

*Due to the hands on nature of our program, we request that participants be limited to 25

HANDS ON SCIENCE, INC.

PO Box 124

Mount Sinai, N.Y. 11766

Phone & Fax

(631) 473-0678

Email: HANDSONSCIENCEINC@YAHOO.COM

For more information & additional classes, visit:

www.handsonscienceinc.com

EAT LIKE A BIRD

Grades 2 and up

Find out how the shape of a bird beak determines what it can eat.

Participants pretend to be birds to test different models of bird beaks.

By using their "beaks" (spoons, chopsticks, tweezer) students attempt to pick up various types of food.

Participants take home the materials & directions to make their own bird feeder.

IT'S ALL IN THE 'CODE'

Grades 3 and up (great for families)

All living things have their own unique genetic code. Do you know yours?

This program will explore why you have your mother's smile and your father's dimples!

Students take data, make comparisons and discover how individuals are similar and unique at the same time.

Presentation culminates with students creating a necklace from beads, duplicating a section of the genetic code from a living organism.

Choose from a variety of codes: a sunflower, a butterfly—even a human heart!

SCIENCE FAIR....OH MY!

All grades

Science Fair...words that strike fear in the hearts of parents & students alike.

Fear not! This participatory program will inspire students to get creative with science fair projects.

We will work together to get the scientific creative juices flowing!

GERM DETECTIVE

Grades 2 and up

A memorable way to demonstrate how germs spread. Following a brief informative introduction about germs, and a demonstration about cross-contamination, this program uses a product that is an effective way to demonstrate proper hand washing techniques.

Students will "illuminate" and test the effectiveness of their own hand washing technique.

This presentation uses a product employed by those in the health care profession to teach proper hand hand washing!

"RIDE" with ENERGY & MOTION

Grades 5 and up

This innovative program takes students on an imaginary walk through an amusement park to discover the world of physics.

Following a brief introduction using amusement park rides to explain Newton's 3 Laws, students will work in groups and visit stations designed to mimic familiar amusement park attractions.

Students will understand the forces behind bumper car rides, design a roller coaster, and more

Please visit www.handsonscienceinc.com for more information about:

BOY-O-BUOYANCY!

We all know that certain things float in water, while others sink. Why? Using a water tank, this presentation explores the principles of density & buoyancy.

GRUESOME HALLOWEEN SCIENCE

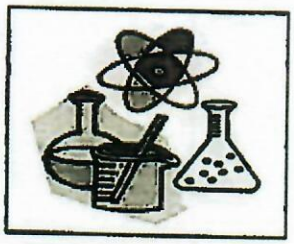
Kids will have so much fun, they won't even know they're learning science! No tricks...just treats!

Science Project Websites

1. http://www.sciencekids.co.nz/experiments.html
2. http://www.sciencebob.com/experiments/
3. http://pbskids.org/dragonflytv/scifair/
4. http://www.all-science-fair-projects.com/
5. http://kids.usa.gov/science/science-fair-projects/index.shtml
6. http://www.education.com/science-fair/
7. http://www.hometrainingtools.com/science-fair-projects/c/1114/
8. http://www.scholastic.com/teachers/article/40-cool-science-experiments-web
9. http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml
10. http://explorable.com/kids-science-projects

Video Clips of the Five Steps to a Good Science Project
http://www.jpl.nasa.gov/education/sciencefair/

3rd Trimester Science Fair Project
Due – March 8th, 2018



Name:_____ Period:_____

Project Title:_____ Grade:_____ / 80 = _____

7 Steps of the Scientific Method	10 points	5 points	3 points	0 Points
Problem – Question you want answered	Problem is stated clearly and logically as a question.	Problem is not clearly stated. Not written in the form of a question	Problem is incomplete. Not written in the form of a question.	None stated
Hypothesis – An educated guess that tries to answer the problem (doesn't have to be correct).	Answers the question and stated clearly in one or two complete sentences.	Not clearly stated. Not written as a sentence.	Incomplete. Not written as a sentence.	None stated
Materials – Items used to complete the experiment	***ALL*** materials used in the experiment are listed.	Missing **one** of the materials needed to do the experiment.	Missing **two or more** materials.	None stated
Variables – Controlled – variables that stay constant Independent – variable that changes Dependent - variable that we are measuring	***ALL*** controlled variables are listed. **One** manipulated variable is listed.	Inaccurately labeled variables (mixed up).	Variables are missing or not explained.	None stated
Procedure – Steps of the experiment (the order in which you complete the experiment)	Follows and names ***ALL*** the steps of the procedure clearly in order.	Steps are missing or not explained completely.	Steps are out of order and not explained.	None stated
Data Collection – graphs, charts, tables, etc… (collected information from experiment)	Data table is included to collect times, numbers, etc… Bar/Line graph shows changes or amounts. ***ALL*** data supports the experiment.	Graphs, tables, or charts are missing some information.	Graphs, charts, or tables are incomplete.	No data
Conclusion – Answer to the problem	Answers the problem in one paragraph (4-6 complete sentences) using scientific data collected	Conclusion is very short (3 sentences) and doesn't fully answer the problem. Includes some data collected.	Conclusion is incorrect. **OR** Is very short 1-2 sentences.	None stated
Presentation	Each element in the display had a function and clearly served to illustrate some aspect of the experiment. All items were clear and organized.	Each element in the display had a function and clearly served to illustrate some aspect of the experiment. Most items were clear and organized.	Few elements were displayed in and clear and organized manner.	The display was incomplete with no clear plan.