

**Franklin Elementary School**  
**Science Fair**  
**Thursday March 30, 2023 at 5:00 pm**  
**ALL Franklin students are encouraged to participate!**

Dear Franklin Community,

It is time again for our annual Franklin Science Fair! This is an incredible opportunity to learn something new with your child and spark their interest in science. Inside this packet are some sample experiments that are easy to follow. Keep it simple and let's make science fun!

**WHAT TO DO:**

**Step 1 – Come up with a project idea - Projects can be a research topic or an experiment**

**Step 2 – Research the topic, run the experiment, and draw your conclusions**

**Step 3 – Create a poster board showcasing your project**

**Step 4 – Drop off your board outside the Cafetorium on Friday March 24th between 8:00 and 9:00 am**

**Step 5 – Come to the Science Fair Open House on Thursday March 30, 5:00 pm to see all of the posters!**

**KEY DATES & TIMES**

<b>Friday March 24</b>	<b>Science Project Board Drop-Off</b>	8:00 – 9:00 am outside the Cafetorium Don't bring boards to your classroom!
<b>Thursday March 30</b>	<b>Science Fair Open House</b> The entire Franklin community is invited to support our young scientists!	5:00 – 7:00 pm in the Cafetorium (During Open House)

Please contact Franklin Science Club Co-Chairs Dolly Hodes, Svetlana Nagiel, Elana Norman, and Jeff Ovadya (franklinsciclub@gmail.com) with any questions or comments.

## A. Participation

Every student who wishes to participate in the Science Fair **must do three (3) things:**

- Complete a Science Fair project. Come up with an idea for a project and see it through.
- Create a Science Fair Board. Make sure to put your name on it! **Students may work in teams, each team member will receive credit – write all student names on the board**
- Bring the board to school on Friday, March 24th between 8-9 am and drop it off in the Cafetorium.

Come to Science Fair Open House **Thursday, March 30th at 5:00 pm**

**\*\* NO LIQUIDS PLEASE!! DO NOT BRING ANY MODELS or any objects to the Science Fair – photographs of the project can be mounted on the Boards.**

## B. Categories

There are 2 Science Fair Categories to choose from:

1. Experiment
2. Research topic/Exhibit/Demonstration

**1. Experiment:** This category is generally considered the traditional science project fair entry. Students conduct experiments to evaluate an idea or problem (the hypothesis). The level of scientific experimentation and reporting depends on the age and ability of the student. This is where the parent is needed to “guide” the student through the process. If the concept is difficult to explain or understand, then take a step back and simplify. Keep it Simple!! When conducting experiments, the Scientific Method is employed (see below). Such concepts as controls, hypotheses, and results are introduced. Review these concepts and give examples to assist the young scientist. If possible, try to use *measurements* of time, water, growth, etc. – data are critical to learning the scientific method. **PLEASE DO NOT BRING ANY MATERIALS, MODELS, OR WORK THAT IS NOT ATTACHED TO YOUR PROJECT BOARD TO THE SCIENCE FAIR.**

**2. Research Topic/Exhibit/Demonstration:** This category is intended for students who want to research a topic and present their knowledge and understanding. A student can provide a graphic display, written report, or build a model, however we ask that you take pictures, draw graphs or diagrams of your work. **PLEASE DO NOT BRING ANY MATERIALS, MODELS, OR WORK THAT IS NOT ATTACHED TO YOUR PROJECT BOARD TO THE SCIENCE FAIR.** You need to turn your research project into a question like, “What are Fossils”, “How Does the Human Heart Work”, “What is Radical Symmetry”, “What is a Triangle”, “How Do Humans Touch”, etc. Students can take a school research project that was completed in their classroom one step further and employ the Scientific Method. Examples of demonstration projects include human heart models, “how does a cell phone work?”, photosynthesis, solar energy, recycling, “how does an airplane fly?”

## C. The Scientific Method

The scientific method is the primary tool that scientists use to find answers to questions. The scientific method involves the following steps:

- Research -- Select and understand the topic
- Problem -- Identify scientific questions or problems to be solved
- Hypothesis -- Come up with an idea about the solution to the problem
- Project Experimentation -- Test your hypothesis with appropriate experiments and collect data
- Project Conclusion -- Summary of the experimental results and statement of how the results relate to your hypothesis

Please use the Scientific Method where you can. Younger students may not understand it and you can simplify it where needed. The Exhibit/Demonstration Category uses the Scientific Method when the topic is posed as a question. Again, the parent is the best judge of where and when to apply it. For students in Grades 3, 4 and 5 who chose to do an experiment; we highly recommend attempting to follow the Scientific Method to the best of the students' ability (We already know Mom and Dad can do it! ☺)

## D. Science Fair Project Board

The Science Fair Board represents all the work that was done on the project. **The student's name, grade, project category, and project title should be clearly displayed on the FRONT of the board. If this information is not on the board, you may not receive credit for participation.** Drop off the board on the morning of March 24th.

**All participants must submit a Science Fair Board. This is free-standing TRI-FOLD board that can be purchased at Staples Office Supply store OR will be available at the front office (please keep an eye out in the Franklin FLASH for when they are available). The Board MUST be able to stand on its own.** No models, objects, etc. are allowed to be dropped off with the board. **NO EXCEPTIONS.** Take photos of the project and the students actively experimenting and attach them to the board. No glass, scalpels, batteries, wires attached to batteries, or hazardous materials, etc. are allowed for safety reasons, and yes, every year someone tries to bring them. If your child builds a battery – great!! Take a picture of it and put it on the board. Do not have the child bring the battery to school. **Any items brought to the Fair will be discarded.**

## E. Sample Science Fair Projects

Here is an example of a simple experiment, as well as some pictures of past posters, as a guide. Be creative, think of some interesting questions, keep it simple, and HAVE FUN! The intent is to enjoy the Science Project with your child, and to nurture your child's curiosity in Science!

## Sample Experiment --

- Topic **Parking Meters in Santa Monica: Honest or Crooked??**
- Problem/Question Do You Get the Time You Pay For??
- Hypothesis Parking Meters in Santa Monica are NOT Accurate
- Project Experimentation: Materials: 10 quarters  
Digital watch  
Parental chauffeur  
Notebook

### Procedure:

I selected 10 parking meters throughout the City of Santa Monica. I inserted 2 quarters into each of the meters when they were empty (this is a control measure). I measured the time on my digital watch and noted the start and end times on my notebook. I repeated this experiment for each of the 10 parking meters

- Project Conclusion  
I made a bar chart of actual time for each of the ten parking meters. I found out that 5 meters were accurate. 3 meters gave me several extra minutes and 2 meters robbed me of 1 minute. In conclusion, only 50 % of the parking meters in Santa Monica are accurate. However, if I measure the accuracy to be in terms of receiving a parking ticket, then they are accurate 80% of the time.

Note – This can quickly become an advanced Science Fair Project if the student measures more parking meters, prepares a pie chart, and performs more substantial math calculations. Research could also include internet sites that explain the mechanisms for parking meters and perhaps a letter to the manufacturer. In fact, a more complex version of this was a winning project in the Bay Area Science Fair several years ago. Among other things, the student contacted the city parking authority, which donated a large number of quarters to her project in return for receiving a copy of her results and conclusions.

## F. Resources

There are many great resources in the internet and in your library to help you with your Science Fair project. A few are listed here:

- Janice Van Cleave, *Guide to the Best Science Fair Project* (Scholastic 1997). Much of the material in this packet is drawn from this book.
- [www.all-science-fair-projects.com](http://www.all-science-fair-projects.com)
- [www.howstuffworks.com/fun-science-projects-for-kids.htm](http://www.howstuffworks.com/fun-science-projects-for-kids.htm)
- [www.sciencebuddies.org](http://www.sciencebuddies.org): You can find hundreds of ideas for Science Fair projects at these sites and others like them.

- Julianne Blair Bochinski, *The Complete Handbook of Science Fair Projects* (Wiley, 2003).
- Joe Rhatigan, *Prize-Winning Science Fair Projects for Curious Kids* (Lark, 2006).

### Some pictures of past projects:

**Hypothesis:** objects float better in salty water.

1. Get 2 full glasses of water

2. Put 5 tablespoons of salt in one glass

3. Put all objects in each glass

4. Record results.

## FLOAT OR SINK?

object	fresh water	Salty water
Sun flower seed	F	F
* cashew	S	F
* egg	S	F
bottle cap	F	F
raisin	S	S
Penny	S	S
dried pasta	S	S

F = float    S = sink

**conclusion**  
the egg and cashew floated in salty water not fresh water

**Fun facts:** The Atlantic is saltier than the Pacific.

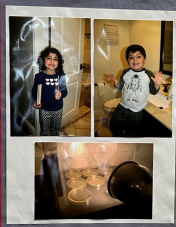
But the Dead Sea is saltier than both

Dr. Eli Tobel K-31

# DUES SOAP HELP?

**Hypothesis:**  
You will have 0 germs on your hands after washing with soap, but not after washing with water.

**Experiment:**  
- Wiped wet swab 10 times on brother's hand.  
- Wiped swab on petri dish.  
- warmed petri dishes for 24 hours.  
- counted how many groups of germs were in each dish under 3 conditions:  
1. Nothing  
2. Washing with water only.  
3. Washing hands with soap.



Nothing

Water

Soap

**Conclusion:**  
- Washing hands with water does not get rid of many germs.  
- Washing hands with soap gets rid of almost all germs.

Carra Norman  
4th grade  
Mrs. Borden  
Experiment


Number of germ families

Washed your hands	Left hand	Right hand
Nothing	28	69
Water	28	27
Soap	0	5

## WHAT IS THE BEST WAY TO GROW GRASS?

**Hypothesis**  
The best way to grow grass is outside in sunlight.

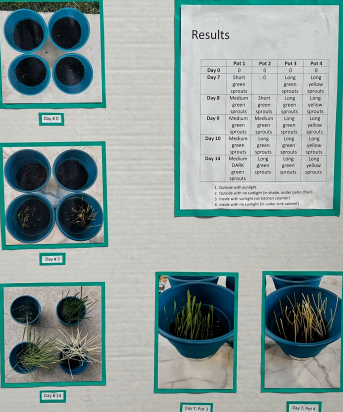
**Experimental Procedure**  
I planted 70 grass seeds in potting soil in each of 4 different conditions:  
1. Outside with sunlight  
2. Outside with no sunlight (in shade, under patio chair)  
3. Inside with sunlight (in kitchen counter)  
4. Inside with no sunlight (in under sink cabinet)




**Results**

	Part 1	Part 2	Part 3	Part 4
Day 0	0	0	0	0
Day 1	short green	short green	short green	short green
Day 2	short green	short green	short green	short green
Day 3	short green	short green	short green	short green
Day 4	short green	short green	short green	short green
Day 5	short green	short green	short green	short green
Day 6	short green	short green	short green	short green
Day 7	short green	short green	short green	short green
Day 8	short green	short green	short green	short green
Day 9	short green	short green	short green	short green
Day 10	short green	short green	short green	short green
Day 11	short green	short green	short green	short green
Day 12	short green	short green	short green	short green
Day 13	short green	short green	short green	short green
Day 14	short green	short green	short green	short green
Day 15	short green	short green	short green	short green
Day 16	short green	short green	short green	short green
Day 17	short green	short green	short green	short green
Day 18	short green	short green	short green	short green
Day 19	short green	short green	short green	short green
Day 20	short green	short green	short green	short green
Day 21	short green	short green	short green	short green
Day 22	short green	short green	short green	short green
Day 23	short green	short green	short green	short green
Day 24	short green	short green	short green	short green
Day 25	short green	short green	short green	short green
Day 26	short green	short green	short green	short green
Day 27	short green	short green	short green	short green
Day 28	short green	short green	short green	short green
Day 29	short green	short green	short green	short green
Day 30	short green	short green	short green	short green

1. Outside with sunlight  
2. Outside with no sunlight (in shade, under patio chair)  
3. Inside with sunlight (in kitchen counter)  
4. Inside with no sunlight (in under sink cabinet)


























**Conclusions**  
The best way to grow grass is with sunlight.  
Grass with no sunlight can grow, but it grows yellow.  
Other factors I would test in future experiments would be amount of water, and temperature.



Adam Norman  
Mrs. Threlkeld  
2nd grade, Room 16

## How Do Liquids Affect Your Teeth?

An experiment by Miles Tubel (2<sup>nd</sup> grade) and Theo Tubel (2<sup>nd</sup> grade)

STEPS	LIQUIDS	STARTING WEIGHT	STEPS (continued)	APPEARANCE 7 DAYS LATER	WEIGHT 7 DAYS LATER	OBSERVATION AND MEASUREMENT
<p>1. We measured 10 ml of each liquid.</p> 			Then we put them in the fridge.		0.16g	A little bit of staining. Gained 0.16g.
<p>2. Then we brushed each tooth into a beaker cup.</p> 					0.26g	A lot of staining. No weight gained.
<p>3. We brushed each tooth.</p> 			Then we washed seven days.		0.37g	A lot of staining. No weight gained.
<p>4. We put one tooth in each cup.</p> 					0.24g	A little bit of staining. Gained 0.24g.
<p>5. We wrote down the weight of each tooth.</p> 			Then we dumped out the liquid.		0.67g	A little bit of staining. Gained 0.67g.
<p><b>EXPERIMENTAL PROCEDURE</b></p> <ul style="list-style-type: none"> <li>Brush each tooth.</li> <li>Brush each tooth again after seven days of brushing in liquid.</li> <li>Cleanse and measure the effects of each liquid on each tooth.</li> </ul>			Finally we weighed the teeth again.		0.71g	No staining. No weight gained.

**HYPOTHESIS**  
We thought that the Coke would have the most effect on the teeth and that water would have the least.

**CONCLUSION AND POSSIBLE EXPLANATIONS**



- 2 greatest weight. The reason that some gained weight can be because the liquid stuck to the teeth or made the teeth absorb some of the liquid.
- The ones that gained the most and the others gained the most weight.
- If you have your teeth, please clean them often and don't drink liquid water.

### Research Project:

# OLIVE BABOONS



**Habitat**

They live in the forests of Africa. They play in the grasslands of Africa. They live in trees on the ground, but sometimes they are in trees. On the ground they hunt for food, and in the trees they stay away from predators.


**Behavior**

Olive baboons live in large groups called troops or gangs. They spend most of their time on the ground. They are very social animals and often live together. They are very intelligent and can learn to use tools. They are also very curious and will investigate anything new.

**Diet**

Olive baboons are omnivores, but they prefer to eat plants. They eat grass, roots, tubers, bark, flowers, seeds, and fruits. They also eat insects, small mammals, and birds. They are able to eat a wide variety of plants and animals. They are also very adaptable and can live in a variety of environments.



**Babies**

A baby olive baboon is born in a black coat. It can go to the ground as a baby to stay close to its mother. The mother will carry the baby on her back for the first few months of its life. The baby will stay with its mother until it is about 18 months old. The baby will then leave its mother and live on its own.

