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All Saints is introducing its first ever Science Fair! All students will have the opportunity to work with the scientific method and create a project for the fair. It gives our kids and families another way to have fun with science!

PROJECT INTRODUCTION:

EXPERIMENTS & OBSERVATIONS

All Saints Science Fair is a chance to have fun and encourage a spirit of scientific inquiry. Students look at understanding the world around us through experimentation and problem solving, and develop key skills along the way.

Using the scientific method, students will test a hypothesis around this year's theme of life science (humans, animals, plants). The experiments, observations and results are documented to share with students and families at a school-wide fair. Science experts and enthusiasts will review each project with awards given to participants and best in-class.

You can join in by participating in your own scientific explorations with your classroom or at home. The following pages are the details of this years All Saints Science Fair and the first step to getting started.

PARTICIPATION

Pre-K, Kindergarten, and 1st Grade:

With the help of the teachers and parent volunteers, our youngest students will get an introduction to the scientific method with a class project. Over the course of two sessions on Friday afternoons, students will conduct experiments, collect data and record the results to present at the fair.

2nd-6th Grade:

Science Fair projects are voluntary for students to complete at home with the help of friends and family. Suggestions and resources for creating the hypothesis and experiments are available, as well as two Friday afternoon/evening meetings with expert volunteers for support or assistance along the way.

7th and 8th Grade:

Mrs. Schufelt will be Integrating the project into her curriculum and present the results with her students at the fair.

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IMPORTANT DATES TO REMEMBER:

- Jan. 25, 6:30-7:30 PM** **Parent Information Night**
Science experts provide Science Fair overview, project examples and suggestions for parents, followed by Q&A.
- Feb. 3, 8:30-9:30 AM** **Parent/Student Help Session in Library**
Assistance for 2nd-6th grade students and families. Meet at the Library to get help or support from volunteer science experts. (Students will meet Ms. Rose at office and walk over to join parents.)
- Feb. 17, 8:30-9:30 AM** **Parent/Student Help Session in Library**
Assistance for 2nd-6th grade students and families. Meet at the Library to get help or support from volunteer science experts. (Students will meet Ms. Rose at office and walk over to join parents.)
- Mar. 15, 7:30-8 AM** **Project Drop-Off**
Students and families bring in project presentations in gym and set up.
- Mar. 15, 1-2 PM** **Science Fair: Classroom Viewing and Judge Reviews**
Throughout the afternoon, classrooms walk through the fair and science experts judge projects and provide feedback.
- Mar. 15, 6-7:30 PM** **Science Fair: Open House**
Students, Family and Friends welcome to view projects in the school gym.

PLANNING

The science fair uses the scientific method to present experiments that ask a question, make a prediction, test and research, form a conclusion and then report the data in a compelling way to share what you have learned.

You can tell you have an experiment if you are testing something several times and changing a variable to see what will happen. An independent variable is changed or controlled to evaluate the effect on a dependent variable.

Students are required to use the scientific model for their projects. This includes:

- Focus on life sciences (humans, animals and plants)
- Ask questions, research and form hypotheses
- Create experiments to test those hypotheses
- Organize data and draw conclusions
- Share process and results on a display board

Parent involvement is important. Please remember parents' role is to help guide their student, NOT to do the work.

OVERVIEW:

STEPS OF THE SCIENTIFIC METHOD

- 1 FIND A PROBLEM**
Ask a question around the theme of life science
“how does.. ?”
- 2 RESEARCH THE PROBLEM**
Find out all you can and become an expert on your subject
- 3 MAKE A HYPOTHESIS**
Predict what might happen based on what you know
- 4 CONDUCT AN EXPERIMENT**
Create an experiment to find out if you were right
- 5 COLLECT PROOF BY RECORDING DATA**
Test several times and keep a record of the process and results
- 6 ORGANIZE & ANALYZE YOUR DATA**
Uses tools like tables or graphs to review your data to see the results
- 7 FORM A CONCLUSION**
Check your hypothesis against the results - were you right?
- 8 WRITE ABOUT WHAT YOU LEARNED**
Document your process, results and conclusion on a display board
- 9 SHARE AT THE SCIENCE FAIR**
Display your hard work at the fair. Celebrate – you are now a scientist!

LIFE SCIENCE:

This year's focus on life science gives the opportunity to ask questions about the human body, animals and plants and conduct experiments or study behaviors. There are websites and parent volunteers available as resources to help students determine their project's direction.

Please remember some important rules to conducting experiments in life science:

- Always think safety first.
- Respect all life forms. Do not perform an experiment that could harm humans or animals. If working with animals, students should have adult assistance.
- Students should be sure to have permission to experiment on plants that belong to someone else.

Online resources with science fair project ideas:

www.sciencebuddies.org/science-fair-projects/project_ideas.shtml
www.education.com/science-fair/elementary-school/
www.sciencekids.co.nz/projects.html
www.tryscience.org/home.html

Questions?

Contact Keith Zawadzki at keith.e.zawadzki@intel.com or Jennifer Togioka at jtogioka@gmail.com

QUICK GUIDE TO STARTING YOUR PROJECT

1. Problem: Ask a question that can be answered by observation, experimentation, or demonstration.

a) "What is the effect of _____ on _____?"

b) "How does _____ affect _____?"

c) "Which _____ (verb) _____?" ("Which bread will grow mold first?")

My Question: _____

2. Hypothesis: State what you think the outcome will be.

Example: "I think the cake without baking soda will be softer."

My Hypothesis: _____

3. Materials and equipment: List the materials needed to do the experiment or observation.

Materials I Need _____

4. Procedure: List the step by step sequence of exactly what is done.

Example: "#1, I planted seeds in each container. #2, I added soap..."

Sequence I plan to follow _____

5. Results and Analysis: Make a complete record of the results and/or observations

a) Note any unusual results; mistakes; unexpected results

b) Use graphs and charts, if possible

My Results: _____

6. Conclusion: Using data from your results, answer the question that you asked above. Was your hypothesis right or wrong?

My Conclusion: _____

7. Recommendations: From everything you learned would you make any recommendations for further research?

My Recommendation: _____

DISPLAYING YOUR PROJECT

The school office will provide each participating student or class a display board. All participants are required to create a display to present at the science fair.

CREATING YOUR PRESENTATION:

- Use the display board provided by All Saints (black tri-fold, self-standing cardboard)
- Take pride in how work is presented. Be neat, pay attention to details and use correct spelling
- Include required content for the display board:
 - Title
 - Student name, grade and teacher's name. If working as a class, the name of each student should be included.
 - Brief summaries of the problem, research, hypothesis, experiment, results of data and analysis, and conclusion.
- Dropped off in the All Saints gym the morning of the fair.
- Volunteer science experts and enthusiasts will review each project with awards given to participants and best in-class displays.

SAMPLE DISPLAY BOARD

| | | | |
|---|--|--|--|
| | TITLE | | |
| PROBLEM What was the question asked? | HYPOTHESIS What was the proposed hypothesis | EXPERIMENT What was the proposed experiment? | CONCLUSION How did the results compare to your hypothesis Would you recommend future or repeat experiments? |
| RESEARCH What was the background information you learned? (cite your resources) | DATA & ANALYSIS Present your observations and data. Utilize visual tools like tables and graphs to review and assess the results | | NAME/S GRADE TEACHER |

Considerations for creating your display:

- Well organized and carefully presented with correct spelling
- Clearly stated title, question and reasonable hypothesis
- Background information on topic with sources cited
- Clearly explained experiment and process
- Measurable data that includes 2 or more trials. The more the better.
- Experiment uses an independent and dependent variable
- Effective analysis of data and clearly stated results (using visual aids like graphs, charts and tables)
- Well elaborated conclusion based on results