



ALL SAINTS SCHOOL SCIENCE FAIR

IMPORTANT DATES TO REMEMBER:

- Friday, March 11th Grade 2-5 classrooms will receive Science Fair info & registration form from 6th grade guest speakers.
- Wednesday, March 16th 7-8pm Online Science Fair Info Night ZOOM meeting for grade 2-5 parents (students welcome also).
- Friday, April 1st 8:30-9:30am Science Fair help session available in the library for grade 2-5 registered participants.
- Wednesday, April 20th All Saints Science Fair! Project drop off in morning and open house and awards from 6:30 - 7:30pm.

Detailed information packet available online at www.allsaintsportland.com/sciencefairpacket



ALL SAINTS SCIENCE FAIR REGISTRATION FORM

1. Student Participant Name: _____
2. Student Grade and Teacher: _____
3. Parent name: _____
4. Parent Signature: _____

Yes, the student will participate in the optional 3-5 minute oral presentation of their Science Fair project.

I (parent) am interested in volunteering to support the science fair as a judge, student help session and/or to help setup/break down the fair. My email = _____

Please bring **completed tear-off section** to the front office or email keith.e.zawadzki@intel.com.

INTRODUCTION

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 a theme like chemistry, physics or life sciences. 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.

PARTICIPATION

2nd-5th Grade Science Fair projects are voluntary for students to complete at home with the help of friends or family. Suggestions and resources for creating the hypothesis and experiments are available, as well as a Friday morning help sessions with expert volunteers for support or assistance along the way.

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

- 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
- Science fair project submissions are limited to individuals or teams of 2 students maximum.

There is also the option to participate in a 3-5 minute oral presentation to one or two judges the morning of the Science Fair. It is a great opportunity for students to work on presentation skills by giving a verbal overview of their project! Additional awards will be given for best oral presentations.

MORE INFORMATION

Please join us by participating in your own scientific explorations with your child! **Complete the Registration Form** and turn in to the office at your earliest convenience or at Parent Information Night.

You are invited to our Wednesday, March 16th 7-8pm Online Science Fair Info Night ZOOM meeting for more detailed information of the program and project ideas.

Detailed information packet is also available online at www.allsaintsportland.com/sciencefairpacket.

Questions: Keith Zawadzki at keith.e.zawadzki@intel.com or Reniera Eddy at reniera.eddy@gmail.com

#	Theme	Question	Data to Measure	Reference
1	Chemistry: Reactions	Are enzymes the key to laundry stain removal?	Qualitative: ability for different detergents and enzymes to remove different stain types	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Chem_p039/chemistry/are-enzymes-in-laundry-detergents-effective-stain-removers
2	Chemistry: Reaction Rates	Can you slow down or speed up a chemical reaction?	Reaction speed vs reactant size/temperature	https://www.education.com/science-fair/article/reaction-speed-particle-size/
3	Chemistry: Reactions	Can you make a battery out of fruit or vegetables?	Electrical current(Amps) vs fruit type/nail coatings [need ammeter]	https://www.teachengineering.org/activities/view/cub_energy2_lesson04_activity2
4	Chemistry: Reactions	What percentage of air is oxygen?	Perform experiment to estimate about of oxygen in air	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Weather_p004/weather-atmosphere/oxygen-content-of-air-rust#summary
5	Physics: Gravity, Forces, Mechanical Advantage	How do elevators work and can you increase the maximum weight?	Mechanical advantage vs #/size of pulleys [need spring scale]	https://www.teachengineering.org/activities/view/cub_simple_lesson05_activity1
6	Physics: Gravity, Forces	What is the best water dam design to produce the most power?	Distance water spouts out vs water depth, hole size	https://www.education.com/science-fair/article/earth-science_squiter1/
7	Physics: Gravity, Forces	What is the best launch angle for height or distance?	Catapult launch distance or height vs angle/object weight/force	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Phys_p085/physics/use-a-catapult-to-storm-castle-walls
8	Physics: Potential vs Kinetic Energy	How to design a roller coaster?	Marble coaster speed or time(kinetic energy) vs tower height(potential energy)	https://www.teachengineering.org/activities/view/duk_rollercoaster_music_act
9	Physics: Gravity, Forces	What is the best airplane design?	Flight distance vs wing size/shape/weight	https://www.teachengineering.org/activities/view/cub_airplanes_lesson06_activity1
10	Physics: Electromagnetism	How do you create an electromagnet?	# of paper clips vs # of coils	https://www.teachengineering.org/activities/view/cub_mag_lesson2_activity1
11	Physics: Electrical Conduction	What materials conduct electricity?	Electrical current(Amps) vs material [need ammeter]	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p018/electricity-electronics/conductors-insulators-basic-circuit
12	Physics: Thermal Conduction	What materials are best for keeping items hot or cold?	Measure how fast heat is lost from various containers – glass, plastic, metal. Do the same materials which conduct electricity also conduct heat?	https://www.steampoweredfamily.com/activities/heat-transfer-projects-for-kids-stem-activities/
13	Physics: Thermal Conduction	How does land affect local temperatures?	Measure temperatures in different environments: NSEW of building, over road, over grass, basement, attic, etc.	
14	Physics: Gravity, Forces, Pressure	What is barometric pressure and how does it change versus location?	Measure the barometric pressure at various places (mountain/hill, in valley, various levels of elevator) vs elevation (smart phone app).	https://easyscienceforkids.com/make-your-own-barometer/
15	Physics: Magnetism	How do you create a magnetic chain reaction?	Distance/speed ball travels vs # of magnets	https://www.scienceproject.com/projects/detail/Free/FG043.asp
16	Physics: Bernoulli's Principal	How does wind impact air pressure?	Time for objects to collide vs separation distance/temperature/wind speed	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Aero_p039/aerodynamics-hydrodynamics/bernoulli-principle#procedure
17	Physics: Properties of Matter	What objects float versus sink?	Plot sink or float vs density (values > 1 sink, and < 1 float). Density= wt/volume and volume can be determined by displacement of water. Compare different woods or metals.	https://easyscienceforkids.com/all-about-sink-and-float/
18	Physics: Properties of Matter	How do dissolved substances change the density, boiling/freezing point of water?	Test float or sink objects in tap water. Retest as you add more salt to change the density.	https://sciencing.com/water-density-science-experiments-8029220.html
19	Life Sciences: Photosynthesis	How to optimize plant growth?	Plant growth vs amount of water/light/soil pH/color of light	https://education.seattlepi.com/experiment-ideas-photosynthesis-6593.html
20	Life Sciences: Human Body	How Does Heart Rate Change with Exercise?	Measure heart rate (phone app) vs activities, try different sample groups including gender(boy vs girl), age (kids vs adults)	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Sports_p006/sports-science/heart-rate-change-with-exercise#summary
21	Life Sciences & Physics	What is the best sports drink?	Electrical current(Amps) vs sports drink [need ammeter]	https://www.sciencebuddies.org/science-fair-projects/project-ideas/Chem_p053/chemistry/electrolyte-challenge-orange-juice-vs-sports-drink#summary
22	Biology	What household objects have the most germs?	Bacteria growth after X days vs sample [need purchase petri dishes prefilled with agar]	https://www.scienceproject.com/projects/detail/Free/FG043.asp