

Holy Rosary Science Fair 2023

We are excited to announce that Holy Rosary will once again be holding a whole school Science Fair! **Every student from Prep to Year 6 is encouraged to enter.** It has been exciting to see our Holy Rosary Science Fair become bigger and bigger each year since our first Science Fair in 2017. This is a rewarding opportunity which allows students to pursue any area of science that interests them, and share their knowledge or findings with the rest of the school community. Science encompasses every part of our lives and any area of science can be used as inspiration for a science project. The best place to start is with your child's interests.

Students may draw on inspiration from any field of science or they may like to follow this year's Science Talent Search topic - **Innovations: Powering Future Industries**. Students are **not limited** to projects in this area, and are welcome to investigate any area of science they find interesting. See more information about this year's Science Fair at the end of this newsletter or on our website.

Inspiration may be taken from keywords relevant to this year's topic; ***Innovations • Robots • AI • technology • sustainable future • sustainable agriculture •***

The aim of the Science Fair is for students to teach others about a scientific concept they know about or have learnt about. In choosing a topic **it is important for students to have a clear idea about what scientific concept their project is intending to teach others**. Students then choose a category from the list below that would best communicate this concept and information.

There will be three sections; **Lower Primary (Prep-2)**, **Middle Primary (Years 3&4)** and **Upper Primary (Years 5&6)**. A wide range of categories will be on offer to cater for differing interests.

All students entering our Science Fair will receive a Holy Rosary Science Fair certificate.

SCIENCE FAIR CATEGORIES

Science Photography

Photos which record a scientific event, sequence or illustrate some scientific principle. Phenomenon such as an object melting, different types of clouds, a flower, crystals growing, animal or plant survival, light, life cycles, chemical or physical change (like an object rusting), a bud opening or a tree changing throughout autumn. **Students will also be judged on photography technique so they should take note of lighting, perspective and composition of their photos.**

Working Models

Working models may be either a **scale model**, an **invention** or an **information model**. Working models **must have some working parts**.

A scale model is a scaled working model of an existing device that simulates the operation of, and the scientific principles behind, an existing technology. For example, a scale model of a wind turbine, a periscope, a working well, a mechanical arm, a rubber band powered car, a hydroelectric power station, an electromagnetic train, generating electricity, motion sensor, an aquatic machine, a record player.

An Information model demonstrates a scientific principle or concept or simulates a scientific technique. These models educate people about the concept being illustrated. For example, if you wanted to show how electrons flow through wire you couldn't use electrons (because they are too small) but you would use something large enough to represent electrons.

Inventions

Inventions are working models with original applications of technology that solve a problem. The scope for inventions is only limited by your imagination. You apply your knowledge of science to make a working invention that has a practical application. Examples from other science fairs include a device to separate and sort marbles into different sizes, a system to make best use of grey water from the kitchen or laundry, a turbine on a garden hose to create a torch to see when watering at night, bike safety rear vision, and a light up violin.

Games

Students produce a game which teaches a scientific idea while playing the game. It could be a board game or a card game but it is not limited to these. For example a game based on recycling or endangered animals, climate change, natural resources, sustainability, ecosystems, the life cycle or air quality. Games, which are original and creative and aren't just a copy or adaptation of a commercially available game, will be more successful.

Computer Programs and Simulations

The creation of an interactive game, simulation or presentation (or a combination of these) on a computer. It must illustrate a scientific concept. The program script or language may be varied - including HTML, VB. Net, Scratch, Game Maker, Unity, Python and for the young Prezzy, Powtoon or PowerPoint. **NOTE: Interaction, input and reaction is required.**

Experimental Research

Choose a topic that interests you where you can conduct an experiment or set of experiments to test a hypothesis. Preferably it should be one that gives you the opportunity to learn something that you did not already know. You will ask questions like why? What if? How? Examples include, what is the effect

of feeding plants different nutrients?, growing plants in different medium or different light scenarios, investigating the insulation properties of different materials, the effect of wheel size on speed, can exercise improve memory? Which citric fruit is a better battery? See attached sheet for further ideas for experimental research projects.

Poster (scientific wallchart)

Students produce bright appealing posters that include at least three relevant, hand drawn or computer generated pictures. Written information may be typed or handwritten and legible from one metre.

This category has four set topics to choose from.

- | | |
|---|---|
| 1. Robots saving lives | 2. Innovations for a sustainable future |
| 3. Technology and sustainable agriculture | 4. Welcome to my smart house |

Video production (DVD)

Students produce a video that teaches others a scientific concept. It should focus on areas of science where motion, colour and sound are important. Choose a topic that you are interested in and think of interesting ways of showing or demonstrating the scientific principles and ideas to others. Judges are looking for creativity with location (get out and about to film your movie) and effective editing techniques. Videos filmed with the student sitting in one spot in front of the camera without moving around won't score as well. Be creative.

Creative Writing (Picture Story Book)

A picture story book which incorporates science ideas into the story with your original illustrations that help tell the story. Think along the lines of *The Hungry Caterpillar*. Your story should include at least five key science ideas. A variety of different techniques could be used, including but not limited to; pencils, watercolours, pastels and collage. You could look at lots of different illustrations in picture story books at the library for inspiration.

This category has four set topics to choose from and it must relate to the theme ***Innovations: Powering Future Industries***:

- | | |
|------------------------------------|------------------------------------|
| 1. The clever tractor on my farm | 2. Hello, welcome to my smart home |
| 3. The factory that managed itself | 4. My friend the drone can do... |

Students wishing to participate in this year's Science Fair should fill in an entry form (attached below and also available at the office) and return it to their class teacher.

Students will present their projects to their class (or teacher) and they will then be displayed in the hall. The judges will be looking for:

- * Understanding of the scientific principles involved**
- * Originality of idea**
- * Project presentation to the class**

Topic ideas and more detailed information and guideline sheets on each category are available via the website. These guidelines are based on those from the Victorian State Science Talent Search (STS) and are quite specific. Each year a small number of projects are selected to represent Holy Rosary in the STS. Any students wishing to have their project considered to represent Holy Rosary School in this year's STS competition must strictly follow the guidelines in the relevant information sheets for each category (relevant information sheets will be sent home once the entry form has been submitted or can be viewed on the website). For those only wishing to enter the Holy Rosary Science Fair these guidelines are flexible and may be used as a guide only. Students need to keep in mind that these fun projects are to share a concept in science that they find interesting.

Science fair projects are a home based project and are to be completed at home. Therefore, parental guidance and supervision will be required. All Science projects will be due to class teachers on Thursday 11th May 2023.

Ideas for projects

- Science web sites like www.sciencebob.com
- Google 'science fair project'
- Check the science books in the 500 Section of your library
- Science ideas from books

Finished projects are due to class teachers by Thursday 11th May 2023

Experimental Research Topic Ideas

The hardest part of the whole project is picking your topic. There are some terrific ideas on the internet. Try googling science fair project ideas or working model science fair projects. Here are some ideas for the experimental research category to get you started. Even if you don't like any, they may inspire you to come up with one of your own. Remember, check all project ideas with your teacher and parents, and don't attempt any project that would hurt or scare people or animals. Good luck!

SCIENCE FAIR IDEA STARTERS FOR EXPERIMENTAL RESEARCH

- Does the colour of food or drinks affect whether or not we like them?
- Does music affect animal behaviour?
- Where are the most germs in your school?
- Does music have any effect on plant growth?
- Which kind of food do dogs (or any animal) prefer?
- Which paper towel brand is the strongest?
- What is the best way to keep an ice cube from melting?
- What level of salt works best to hatch brine shrimp?
- Can the food we eat affect our heart rate?
- How effective are child-proof containers and locks?
- Can background noise levels affect how well we concentrate?
- What is the best way to keep cut flowers fresh the longest?
- Does the colour of light used on plants affect how well they grow?
- What plant fertiliser works best?

- Does the colour of a room affect human behaviour?
- Do athletic students have better lung capacity?
- What brand of battery lasts the longest?
- Does the type of potting soil used in planting affect how fast the plant grows?
- What type of food allows mould to grow the fastest?
- Can plants grow in pots if they are sideways or upside down?
- Does the colour of hair affect how much static electricity it can carry? (test with balloons)
- How much weight can the surface tension of water hold?
- Can some people really read someone else's thoughts?
- Which soft drink decays fallen out teeth the most?
- What light brightness makes plants grow the best?
- Does the colour of birdseed affect how much birds will eat?
- Do natural or chemical fertilisers work best?
- Can mice learn? (you can pick any animal)
- Can people tell artificial smells from real ones?
- What brands of bubble gum produce the biggest bubbles?
- Does age affect human reaction times?
- What is the effect of salt on the boiling temperature of water?
- Does shoe design really affect an athlete's jumping height?
- What type of grass seeds grow the fastest?
- Can animals see in the dark better than humans?

Didn't see one you like? Don't worry...look over them again and see if they give you an idea for your own project that will work for you. Remember, find something that interests you, and have fun with it. If you are still having trouble finding a topic there are plenty of ideas on websites such as www.sciencebob.com

Holy Rosary Science Fair 2023

Projects are due Thursday 11th May 2023.

Student's Name _____

Class _____

Project category (circle one)

Photography

Model

Invention

Game

Poster

Video

Computer program

Experimental research

Scientific creative writing

Other _____

Title of Project (If this changes you must submit a new form)

Student's signature _____

Parent's Name _____

Parent's Signature _____

Please return this entry form to your class teacher as soon as you have chosen your project.