

St. Bernard's Catholic School Annual STEM* Project

“Will you multiply your talents or bury them?” MT 25:14-30

Formerly called “Science Fair Project”

All Projects will be displayed at

Annual Family Science, Technology, Engineering and
Mathematics (STEM) Night on February 21st, 2012

*Acronym for **S**cience **T**echnology **E**ngineering and **M**athematics

Project

- Foster Creativity, Critical Thinking, Problem Solving, Time Management and Organization
- Four areas of concentration: Science, Technology, Engineering & Mathematics
- Meets CA State Standard for Investigation and Experimentation
- Students in grades 4-8 are required to complete a project
- Younger students are welcome to complete a project
- Class projects are completed in Grades 1-3
- Project consists of:

• Idea	• Scientific Method, Research & Design Process
• Journal	• Communicate Results

Project Deliverables*

- All projects have the same deliverables
 - Project Type Decision (Science, Technology, Engineering or Math)
 - Project Idea (Question, Problem, Idea)
 - Project journal (on-going log of project and rough draft of report)
 - Typed Abstract (250 words or less)
 - Typed Report (Abstract, Introduction, Body, and Conclusion)
 - Tri-board
 - In class 3-5 minute oral presentation

*Graded items with due dates

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Partners & Teams

- Fourth grade students are required to work on their project individually since this is their first time working on a STEM project
- The only project that **requires** partners or teams is the Technology project (ExploraVision)
- Members of a partnership, or team, will be required to sign a partner pact
- Parents of partners, or team members, are also required to sign the partner pact
- The only individual grade teammates earn is for their journal, all other grades are team earned.

Science Projects

- Requirements follow San Joaquin County Science Fair
- Purpose is to answer a question using the Scientific Method using an
 - Experiment
 - Model
 - Survey, or
 - Display
- Individual, Partners, Team of 3 (4th grade must be individual)
- More detailed project information can be found at <http://imeet.sjcoe.net/scifair> , click on Classification, Vocabulary and Resources

Technology (only for grades 5-8)

- Requirements follow ExploraVision contest (www.exploravision.org). DO NOT REGISTER!
- Think creatively!
 - “Research an existing technology as to what it does, how it works, and how, when, why it was invented”
 - Project 20 years into the future how the technology will change (dream!)
 - Identify the scientific or engineering breakthroughs necessary
 - Teams of 2, 3 or 4 students

Engineering

- Individual, partners, teams of 3 or 4
- Rube Goldberg
 - Invention Requirement: Use a minimum of six steps to accomplish the goal of popping a balloon.
 - Ideas can be found at <http://mousetrapcontraptions.com/index.html>
 - Report requirements and project material constraints will be provided to students who choose this type of project
- eGFI (Engineering Go For It)
 - <http://teachers.egfi-k12.org/>
 - Select a lesson plan or class activity for grade level
- ThinkCentral
 - www.thinkcentral.com
 - Complete a video-based project or STEM lab

Mathematics

- Individual (or partners if approved by teacher)
- Student creates a video game using Scratch or other programming environment
- Premise of game: math, reading or spelling
- Requirements follow National Video Game Challenge (DO NOT REGISTER!)
 - <http://www.stemchallenge.org/>
- Journal should contain game design process including premise, requirements, design notes, testing notes, troubleshooting notes and user directions

Important Dates

- Kickoff - Week of 11/14
- Journal, Type of Project/Teams – due Monday, 12/5
- Partner Pact, if applicable based upon 12/5 submission – due 12/9
- Journal, Final Project Idea – due Monday, 12/12
- Journal, Abstract Rough Draft – due Tuesday, 1/17 (1/13 for 6th grade)
- Journal, Report Rough Draft – due Monday, 1/23
- Final Project Submission – due Tuesday, 1/31
 - Journal
 - Tri-board
 - Typed Abstract
 - Typed Report
 - Prepared for Oral Presentation
 - Realia (video game file, models, inventions, prototypes)*

*Not applicable to experiments

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Journals

- Most **important** part of project
- Every entry should have a date including year
- Entries can span multiple pages
- Write date at beginning of new entry
- All work should be written in journal in own handwriting
- Include sketches, research, thoughts, mistakes, any information that contributed to your project should be in the journal
- DO NOT use white out or liquid paper, simply mark errors with a single line and continue.
- DO NOT print research from internet or copy pages from book and insert as research notes, write notes in own words.
- DO NOT start a new entry on new page, only go to a new page when you run out of room on the current page.

Rubrics

- Project Type/Team Formation
- Project Idea Submission
- Journal reviews
- Abstract Rough Draft
- Report Rough Draft
- Oral Presentation
- Report
- Abstract
- Tri-board

Student Support

- STEM Project Open Labs 3:00 – 4:00
 - Thursday, 11/17
 - Thursday, 12/1
 - Thursday, 12/8
 - Thursday, 12/15
 - Thursday, 1/12
 - Thursday, 1/19
- M,W,F 7:45 AM – 8:10 AM in computer lab
- By appointment via email (tperrino@st-bernardschool.org) or note from parent