

# Original Project/Study Proposal Guide

Listed below are a set of project ideas you can choose from for a final project in this class.

## Project Guidelines

- This is an entirely original project that should be based on your interest, curiosity or a special area of expertise you want to explore or develop.
- Your project should be based on a focused question you want to explore or inform, or a service application to improve some aspect of your community and/or the world.
- YOU will determine the timeline of your project. It could extend to the end of next year, the end of grade 8, or could be concluded by the middle of June this year.
- You may work in teams or individually, and the appropriate number of team members for the project will be determined in consult with Mr. Beall
- Your project can take the form of:
  - 1) pure research—finding out more about a topic
  - 2) Constructing/designing a product, a model, video animation, machine, etc.
  - 3) Service—delivering a service to society,
- Anything is possible...you are only limited by your imagination 😊

## Project Ideas

These ideas are just suggestions. Feel free to propose your own original idea if you don't see it on this list.

1. **Physics and Inventions—Create a Rube Goldberg Machine**  
Your machine can be any level of complexity. Refer to the Physics and Inventions packet for guidelines.
2. **Research Biomimicry—Design and create a biomimicry application**  
This project does NOT require creation of an application; it could be purely research based where you create an overview and analysis of biomimicry applications and how they help to solve sustainability challenges.
3. **Sustainability Consulting—DoRight Leadership Corps**  
This category is an extension of the electricity audit to include full sustainability audits of a local business. See Mr. Beall for details and resources. This would include making cold phone calls to local businesses or organizations, setting up an appointment to conduct the audit, analyzing the data and providing the client with a set of recommendations for how to reduce their ecological footprint AND increase profits by reducing costs or expanding market share.

**4. Computer Technology—Create content and/or Learn a Program**

Creating content: Use a program you already know to do coding to create an animated movie, graphic design, movie editing, digital audio editing and production, web design.

Learn a program: Embark on a tutorial to learn a professional computer program.

These may include Adobe Illustrator, Photoshop, InDesign, Dreamweaver, and many others available in the Wells computer lab.

**5. Interview Career Professionals in STEAM careers**

**6. Job Shadow STEAM Professionals**

**7. Research and Teach—ANY topic of your choice**

This is a wide open area to “find out” about any STEM related topic: robotics, renewable energy technologies, forensics, nanotechnology, digital audio production, audio visual applications in sports broadcasting, military technology applications, data management, coding, CAD systems for architectural design, space and aeronautics, special studies in advanced mathematics, computer applications in music composition and MIDI (musical instrument digital interface), CCRMA (Center for Computer Research on Music and Acoustics) at Stanford University, nano medical technologies, bioengineering, GMOs (genetically modified organisms), and much more...

**8. Lead STEAM Task Force/Student Study Group**

Math problems, computer programming, sustainability, social issues in technology, effects of technology on human aspects of society,

**9. Public Relations on STEAM topics**

Political action, public outreach, letters to the editor

# STEAM Project Proposal

1. Project members:

2. Focused Question:

3. Project Description:

4. Timeline:

<h2>Student generated topics for original study/project work</h2>	
<p><b>Society</b></p> <ol style="list-style-type: none"> <li>1. How can we help reduce poverty without raising taxes too high?</li> <li>2. Why do we have unemployment? How can we have jobs for every person?</li> <li>3. What can we do to help young people reduce college costs and get started in life financially?</li> <li>4. What is the cause of gender discrimination, and where does it show up in our world today?(school, society, families, etc.) What can we do to reduce negative effects of gender discrimination? What are the negative effects?</li> <li>5. What can the next generation (young people) do to create a more tolerant society, one where differences in culture, race, sex orientation, political philosophy, etc. are respected and accepted?</li> <li>6. Should every nation in the world adopt the same language? Should all people in the United States be required to speak the same language? Why or why not?</li> <li>7. What is the origin of money in society? How have economies in other societies worked without money?</li> </ol> <p><b>Education</b></p> <ol style="list-style-type: none"> <li>1. What schools exist in the world where students choose the entire curriculum?</li> <li>2. How do students learn in these schools? What do they learn? How well prepared are they for college and life?</li> <li>3. Should school focus more on teaching kids about how to create a sustainable future?---renewable technologies, designs for efficiency, etc.</li> </ol> <p><b>Medicine - Health</b></p>	<ol style="list-style-type: none"> <li>4. health care costs?</li> <li>5. What medical technologies are being developed to help people live longer, and even live forever.</li> <li>6. Should cigarets be made illegal?</li> </ol> <p><b>Environment</b></p> <ol style="list-style-type: none"> <li>1. What is being done to reduce packaging waste and make products that are easily recycled?</li> <li>2. What are the problems created by throw-away packaging and products?</li> <li>3. What kinds of technologies are currently being used to use the sun to power transportation—(cars, trucks, trains, planes...)</li> <li>4. What kinds of technologies are being worked on for this?</li> </ol> <p><b>Technology - Science</b></p> <ol style="list-style-type: none"> <li>1. How do hover boards work? What is the outlook for them to be more affordable in the future?</li> <li>2. What is being developed in the field of robotics? What is the likelihood that robots will perform most of our hard labor?</li> <li>3. How do 3D printers work, what are they currently used for, and what might they be able to do in the future?</li> <li>4. Is it possible to discover new colors beyond the primary colors? How do colors work?</li> <li>5. Is there an “edge” to the universe? If so, what can we do to get beyond it? What do scientists think the “edge” might be?</li> </ol>

*STEAM – Science – Technology – Engineering - Arts - Mathematics*

<ol style="list-style-type: none"><li>1. What are some recent advances in medical technology to reduce illnesses overall?</li><li>2. What is the source of rising health care costs and what can we do to reduce them?</li><li>3. How do other nations deal with rising</li></ol>	
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