🔬 Science Fair Topic Development - Summer 2025

Due Date: Monday, September 08, 2025

Purpose: To give you a head start on your science fair project by brainstorming, researching, and developing a viable, testable topic that is completely original.

🚫 IMPORTANT GUIDELINE: Your Project Must Be 100% Original

Your science fair project **must not be taken from science experiment websites** like Science Buddies (www.sciencebuddies.org) or similar platforms. While you may browse such sites for inspiration, **you may not copy or reuse any project idea or experiment directly**. Your topic must be unique, creative, and developed from your own interests and curiosity.

> **If your project is found to be taken directly from an online experiment bank, you will be required to restart your project.**

Think of this as an opportunity to explore something you care about or are curious to test that has not been overdone.

Assignment Requirements

Part 1: Brainstorming & Interest Inventory (1–2 pages)

- Reflect on your personal interests. Which science topics fascinate you?
- Write a paragraph or bullet list addressing:
    - Science classes or science topics you've enjoyed the most
    - Problems you have noticed in the world or community
    - Hobbies or activities you would like to explore scientifically

Part 2: Science Fair Topic Proposal (1-2 pages)

- Choose 5 possible science fair topics based on your interests.

- For each of your 5 topics, answer the following:
    - What is the question you want to investigate?
    - Why is this topic interesting or important?
    - Is this a testable question (can it be answered with an experiment)?
    - If your question **cannot** be answered with an experiment, how do you plan to carry out this research?
    - What is your hypothesis?

Part 3: Preliminary Research (2 pages minimum)

- Research background information for each of your five topics.
- Include:
    - 3–5 credible sources (articles, journals, or books)
        - Click here to learn the difference of a credible vs. non credible source
    - Brief summaries of what each source taught you
    - Definitions of key scientific terms or concepts related to your topic
- Use APA citations
    - Click here for more information on APA formatting

Part 4: Experimental Planning (1–2 pages)

- Pick **two** of your topics, write a rough draft of your **experimental plan for both of the topics**, including:
    - Your testable question and hypothesis **or** your research question (not testable) and hypothesis
    - Independent and dependent variables
    - List of controlled variables
    - Materials you might need

- A step-by-step outline of your procedure
- How you plan to collect and analyze data

Part 5: Reflection and Challenges (Short paragraph for each topic)

- For the two topics you chose in step 4:
  - Reflect on any challenges or questions you have so far.
  - What parts of the project are you unsure about?
  - What support might you need from your teacher or mentors?

📌 Final Instructions

When you return to school, your science instructor will review your proposals to determine whether your chosen topic is approved for further development or if you will need to select a different idea for your science fair project.

Make sure your work is:

- **Original** and not copied from any online science project database
- **Well-researched** and clearly presented
- **Neatly organized** and **complete** according to the checklist

Your summer assignment will serve as the foundation for your science fair project. Take your time, be creative, and explore something meaningful to you!

🧠 Tips for Success

- Choose topics that truly interest you and connect to your world.
- Your project should involve testing a hypothesis, not just demonstrating a known concept.

- If you are proposing a research based project, you should gather a minimum of 10-15 reputable sources to gather data from.
    - Click here to learn about credible (reputable) vs. non credible sources
- Think about what makes your idea new or different — add your own twist.
- Keep a notebook or digital journal to capture ideas and observations all summer long.

☀️ Summer Timeline

Week(s)	Task	Notes
Week 1 6/9	Complete Part 1: Brainstorming & Interest Inventory	Reflect deeply and write clearly
Week 2–3 6/16 & 6/23	Complete Part 2: Generate 5 topic ideas & answer proposal questions	Use your interests to generate testable, original ideas
Week 4–7 6/30, 7/7, 7/14, & 7/21	Part 3: Research background info for all 5 topics	Collect sources and take notes; cite in APA
Week 8–11 7/28, 8/4, 8/11, & 8/18	Part 4: Experimental Planning for 2 strongest topics	Focus only on topics you're likely to pursue
Week 12 8/25	Part 5: Reflections and Questions	Identify potential roadblocks and support needed
Monday, September 08, 2025	Submit final packet	Be sure your work is original and complete

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✅ Science Fair Summer Checklist & Guiding Worksheet

Instructions: Use this checklist to guide your work. Check off each box as you go.

🧠 Part 1: Brainstorming & Interests

☐ Wrote about science topics/units I've enjoyed
☐ Listed real-world problems I find interesting
☐ Described hobbies or curiosities I might explore

💡 Part 2: Topic Proposal

For 5 topic ideas, I answered:
☐ What is the question I want to investigate?
☐ Why is it important or interesting?
☐ Is it testable?
☐ What's my hypothesis?

🔍 Part 3: Preliminary Research

☐ Selected 5 potential topics
☐ Found 3–5 credible sources per topic
☐ Summarized what I learned from each source
☐ Defined important scientific terms
☐ Cited everything in APA format

🧪 Part 4: Experimental Planning (Choose 2 topics)

☐ Wrote testable question & hypothesis for two of your selected topics.
☐ Identified independent, dependent, and controlled variables
☐ Listed materials needed
☐ Created a step-by-step procedure
☐ Explained how I'll collect & analyze data

🤔 Part 5: Reflection

For each of my selected topics in step 4:
☐ Wrote a paragraph on challenges or questions
☐ Explained what support I may need

📝 Science Fair Summer Homework Grading Rubric

Component	Description	Points
Part 1: Brainstorming	Thoughtful reflection with clear connections to interests	10 pts
Part 2: Topic Proposals	5 original topics with fully answered questions	20 pts
Part 3: Research	At least 3 reliable sources per topic, with summaries and APA formatting	20 pts
Part 4: Experimental Plans	Clear, organized plans for 2 topics with all required elements	25 pts
Part 5: Reflection	Honest, thoughtful reflection on challenges and support needed for both topics.	10 pts
Creativity & Originality	Unique ideas; not from science experiment websites	10 pts
Formatting & Neatness	Work is well-organized and follows directions	5 pts
Total _____ / 100		