JSC Research Project Guide

Preparation and Research

1. The goal of the JSC Final Project
    a. In regular school studies the goal is to learn well established scientific facts.
    b. The goal of the research project is to discover areas of new and ongoing research.
    c. This is where new science happens through a process of asking questions, experimenting, examining related research, making discoveries, and probing further with new questions.
2. Choosing a topic
    a. Strongly **related to the theme**.
    b. Has interesting questions of **ongoing research**.
    c. A good story / human connection is a plus.
    d. Has a **strong and relevant Judaic connection**.
    e. Brainstorm a lot of topic ideas, do some initial research, and then choose the best.
3. Research your topic
    a. Your goal is to find quality research that may answer one or more of your questions.
    b. You may also do your own experiment.
    c. Articles and news stories may help you find topics and information, but you need to dig into the sources to find the **original academic papers**.
    d. Include at least 1 academic paper and 2 quality supporting sources.
    e. Ideally the research should show **something new**, interesting, or counterintuitive.
    f. Support your research with other **quality sources** that present the fundamentals of the topic.
    g. Look for any **conflicting research, opinions, or theories**.

Creating your Project

1. Choosing a title
    a. Something to pique interest
    b. Descriptive subtitle
2. Introducing the topic
    a. Make human connection (why should I care?), such as a story or relatable problem or intriguing question. (Unlike the scientific questions, an introductory

question is meant to hook the reader, and can be open ended, ethical, or opinion based in nature.)

b. Give a brief overview of any basic concepts and history that is necessary to understand the research. Make this as simple as possible.

3. Presenting question
    a. After getting your reader up to speed, you should present a question about your topic.
    b. This question should be **something new** that points to areas of **ongoing research and discovery**. (Not well understood or established facts.)
    c. This question should be scientific, not ethical, religious, or opinion based. They need to be something that can form a testable hypothesis and so can be proven, or disproven by research.
4. Presenting research
    a. Explain **what the research was trying to prove** or achieve, including any relevant hypotheses.
    b. Explain how the experiment was conducted.
    c. Present the findings of the research.
    d. Be sure to include the data from the experiment.
    e. Include graphs, charts, and illustrations to make the experiment more clear, and to present the results clearly.
    f. Be sure to **explain any data or graphics clearly**.
    g. Explain the **conclusion of the research**.
5. Analyzing and weighing research.
    a. How does this research potentially answer your question?
    b. How would you **rate the quality of the research**?
        i. Was the research published in a reputable source?
        ii. Was the paper peer reviewed?
        iii. Is it a reliable result?
        iv. Has it been repeated?
        v. How large was the sample size?
        vi. Who funded the research?
        vii. Are there any conflicts of interest to be concerned about that might have pushed for a certain result?
    c. Be sure to highlight **conflicting research**, or **alternative explanations and theories.**
    d. What questions remain unanswered?
6. Making a Judaic connection.
    a. Present a Judaic question, challenge, or ethical dilemma that relates to your topic.
    b. Introduce the Judaic connection and highlight its relevance and importance in Jewish life or thought.
    c. Bring primary Jewish sources (Tanach, Talmud, Midrash, Halacha).
    d. Bring contemporary sources that relate to this idea.

    e. Show how the research of your topic helps answer the Judaic question. This may include a deeper understanding of a Judaic topic, or how new technology may help with a Jewish challenge.
7. Presenting conclusion.
    a. **Summarize** your question, the research, and how it answers your question.
    b. **How confident are you** in this result?
    c. Offer **alternative explanations**.
    d. Offer **questions for further research**.

Presentation

1. Cover
    a. Include a cover page or slide with the title and your name.
2. Writing, spelling, and grammar
    a. Be sure to proofread your work.
    b. Write in a way that is as clear as possible.
    c. Use technical jargon only as necessary.
    d. Explain the concepts in your own words.
3. Layout and Color
    a. Make sure your layout is easy to read.
    b. Be sure that text is high contrast.
    c. Choose a color scheme or PowerPoint theme that fits the feel of your topic and won't interfere with text.
4. Graphics
    a. Be sure that graphics and text don't interfere with each other.
    b. Graphics often have very small text that will not be legible. You may need to add your own text under graphics to explain.