TO: Dr. Streit
FROM: Jalen Joni
DATE: 9/5/2025
SUBJECT: Rhetorical Analysis of *Science Fair Fun: Designing Environmental Science Projects*

The purpose of this memo is to analyze the EPA booklet *Science Fair Fun: Designing Environmental Science Projects for Students Grades 6–8* and evaluate how effectively it communicates to its audiences. The booklet primarily guides middle school students through preparing for a science fair using step-by-step instructions, sample projects, and checklists explaining what makes a strong project and what judges look for. It also supports teachers, staff, and administrators who help students plan, manage, and evaluate their work. This memo examines how the booklet serves both groups, highlighting where it succeeds and where it could be improved.

Addresses particular readers

The primary audience for the *Science Fair Fun* booklet is middle school students in grades six through eight. The "Note for Students" on the second page explains how to pick a topic, form a hypothesis, and manage time. The language is straightforward and encouraging, using phrases like "Science is fun" and reminding readers their projects can "make a difference" for the environment. This tone fits students new to science fairs.

The secondary audience includes teachers, staff, and principals who support students. The "Note for Teachers" explains how adults help students choose manageable projects and gather materials. Checklists such as "What Makes a Good Science Fair Project" (page 8) and "What the Judges Look For" (page 9) give teachers grading tools and preparation guidelines. Principals and staff can also use these sections to ensure projects meet school standards. While the booklet addresses both groups, it sometimes assumes students already understand terms like "variables" or "hypothesis," which may require teacher clarification.

Helps readers solve problems

The *Science Fair Fun* booklet guides students by breaking the project process into smaller, manageable tasks. The "Step by Step" section (pages 3–4) shows how to choose a topic, gather background information, form a hypothesis, and design an experiment. This structure helps students start their projects by turning a large task into clear, actionable steps.

The sample projects model this process. One compares recycled paper to virgin paper to test strength (page 11), while another uses compost piles to measure effectiveness (page 15). These examples show how to frame a hypothesis and collect data. The checklist "What the Judges Look For" (page 9) clarifies expectations and helps students focus on the qualities of a strong project.

For teachers, the booklet doubles as a teaching and planning tool. They can use the "Step by Step" section to structure lessons or track progress, while the checklists provide grading criteria that align with science fair standards. Despite these strengths, the booklet gives little advice for when experiments fail, or results don't match the hypothesis. In those cases, teachers must step in and provide support, which limits how independently students can use the booklet.

Reflects an organization's goals and culture

The EPA's mission to protect human health and the environment shapes the booklet. From the start, it emphasizes projects that reduce, reuse, and recycle, encouraging students to connect their work to conservation. The sample projects reinforce this by testing how convenience affects recycling rates (page 14) and showing how a "pay as you throw" system reduces waste through financial incentives (page 16). These choices tie the scientific method directly to the EPA's goals.

This strong focus, however, can make the booklet feel less like a neutral science resource and more like an outreach tool. Students learn to form hypotheses but are steered toward environmental themes. For teachers and staff, this alignment is useful because it blends science instruction with civic responsibility. For students, it narrows the range of topics if they are curious about other areas of science.

Uses design to increase readability

The booklet uses a clear structure that helps readers follow along. Sections are marked with bold headings such as "Step by Step" and "Sample Projects," which let students scan quickly and stay oriented. Within these sections, bulleted lists and numbered steps make directions easier to follow, such as the checklist "What Makes a Good Science Fair Project" (page 8).

For teachers and staff, the same design supports classroom use. Bolded titles help them locate information quickly, while checklists and boxed lists double as grading tools. The layout also helps plan lessons that follow the project sequence. For example, the *Sample Projects* section (pages 11–15) uses boxed text, bold headings, and visuals teachers can reference when showing students what a completed project looks like or how to organize results.

The document also includes diagrams and boxed lists that add variety. The scientific method diagram (page 2) shows the cycle of asking a question, forming a hypothesis, testing, and drawing conclusions, reinforcing the text. Bolded glossary terms (pages 16–17) highlight key vocabulary. These features show the EPA's effort to make long passages more readable.

Even with these strengths, the booklet remains word-heavy, and some visuals serve more as decoration than instruction. Students who struggle with long text may find it overwhelming, and teachers may need to provide extra support. More charts or data tables would make the design stronger and easier for students to use independently.

Consists of words or images or both

The booklet relies heavily on text, with many images serving more as decoration than instruction. For example, pictures of a recycling bin and orange peels in the composting section (pages 12–13) add color but do not explain how to run the experiments. In most cases, the text provides the instruction while the images reinforce the theme.

The language also shapes how readers use the material. It is friendly and direct, using short sentences and action verbs such as “Choose a topic,” “Record your observations,” and “Summarize results” (pages 3–5). For students, this tone makes the process easier to follow. Phrases like “Science is fun” and “make a difference” (page 1) motivate younger readers but emphasize doing over explaining. Teachers and staff use the same language to guide student work. They may need to clarify terms like “variables,” “hypothesis,” and “experimental method” (page 4). The glossary helps bridge this gap but assumes students know when to use it without teaching direction.

The scientific method diagram (page 2) is one of the few visuals that adds meaningful support, showing the sequence of questioning, hypothesizing, testing, and drawing conclusions. Since the booklet leans so heavily on words, younger readers may struggle with long passages. More instructional visuals, such as data tables or experiment diagrams, would make the material more accessible and encourage independent work.