GENERAL SCIENCE TOOLKIT

Technological Problem-Solving Organizer

BLM G-10

Goal • Improve your design planning for technological solutions to problems.

Introduction

As science inquiries, technological problems are best solved through a step-by-step systematic process. The process in the flow chart provides a guide to consider before building a useful product or carrying out an improved technique.

What to Do

- Use the flowchart below to help you develop a proposed design for a technological solution to a problem.
- Use the question to help you introduce your idea to an audience

Solving a Technological Problem identify the problem decide on design criteria plan and construct sketch • draw a complete plan build a model revise revise design criteria evaluate design criteria product or technique excellent plan had were inadequate solution to the problem identifiable flaws use the product patent the product or technique or technique for possible mass production

State the problem to be solved.

| • Area or topic: |
|------------------|
|------------------|

| • | Key | word | ls for | r resea | rch: |
|---|-----|------|--------|---------|------|
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Develop design criteria:

- Materials needed
- Cost of materials
- Time required (for each step)
- Account for design adjustment(s)

Plan and build working model:

- Sketch with estimates
- Blueprints with specifications
- Construction criteria (i.e., safety, space, testing)

Evaluation:

- · Adjustments, if flaws found
- Repeated testing, if design works
- · Suggest uses

Question

1. You have been selected to speak to a meeting of citizens concerned about the problem your proposal is designed to solve. Draft a fact sheet for them describing the uses of your design. You may include a sketch and offer to demonstrate your model. Include any safety, ethical, and special social considerations related to the model.