ENGINEERING DESIGN
PROCESS JOURNAL

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Participant Names

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Sponsoring Teacher

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Grade Level

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Project Title

The Engineering and Design Process

Buildings, machines, structures, and systems! Engineers follow a process to develop new products or systems to meet human needs or wants. Engineers use scientific reasoning, invent procedures, analyze results, and communicate with people who will evaluate and rely on the design solution.

Use this design process model to guide you through your challenge.

Plan

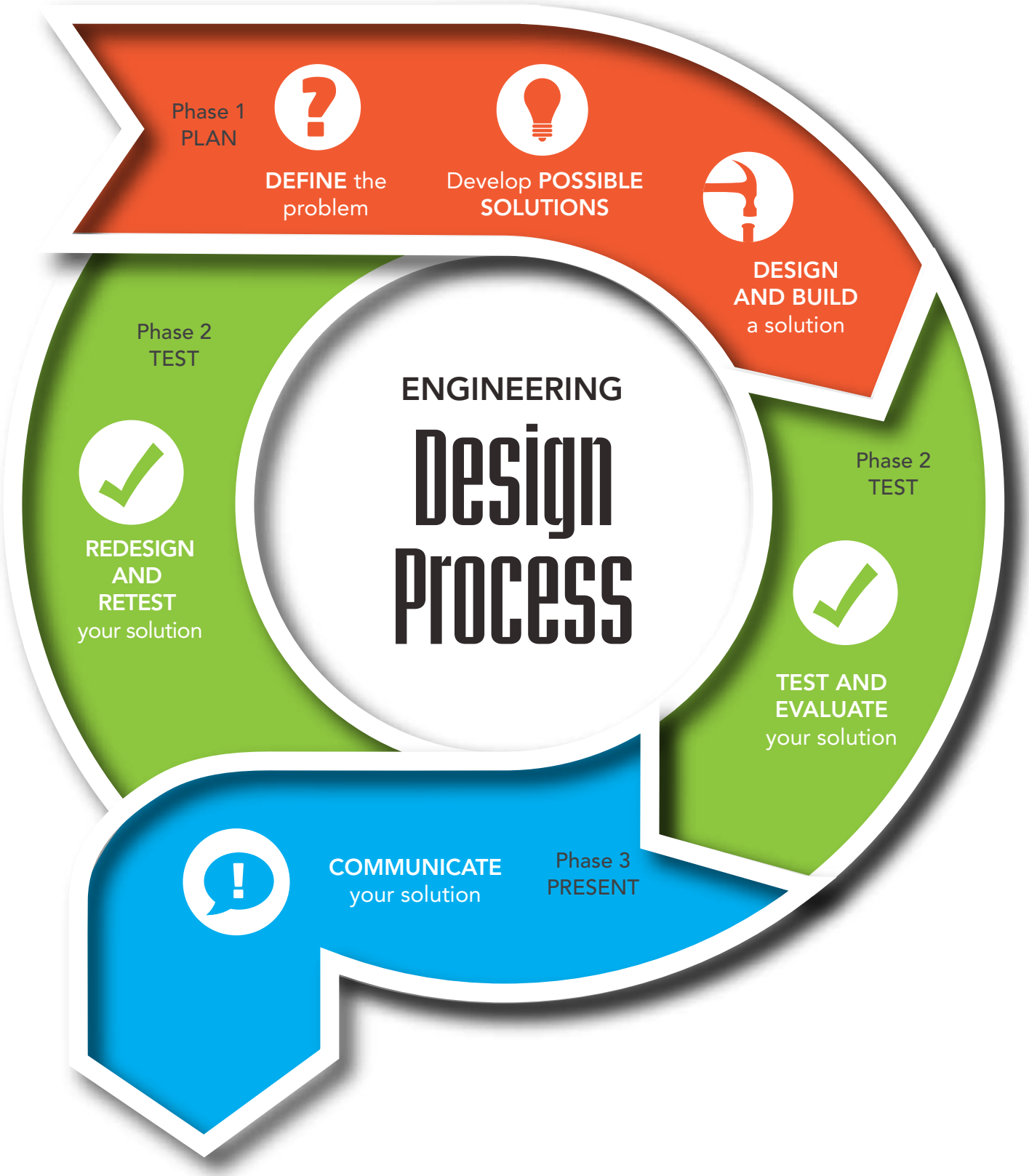
- Identify a problem or challenge
- Understand the criteria and constraints
- Brainstorm possible solutions
- Design and build a working model (prototype)

Test

- Analyze prototype results data and identify needed changes
- Modify the prototype to address the data analysis
- Repeat the sequence until a final model is achieved

Present

- Organize the evidence to support the design decisions
- Present the final design with the collected evidence
- Compare/evaluate the other competing designs


Phase 1
PLAN
DEFINE the problem
Develop POSSIBLE SOLUTIONS
DESIGN AND BUILD a solution
Phase 2
TEST
REDESIGN AND RETEST your solution
ENGINEERING
Design Process
Phase 2
TEST
TEST AND EVALUATE your solution
COMMUNICATE your solution
Phase 3
PRESENT

The Data Collection:

Don't forget to research! What data should you collect and analyze before you begin?

My Project

TITLE

Directions: Write a brief summary of your project experience.

PROJECT PROCESS SUMARY

Plan IT!

1. In order to find a solution for the engineering problem, you will need to consider some criteria and constraints.

CRITERIA

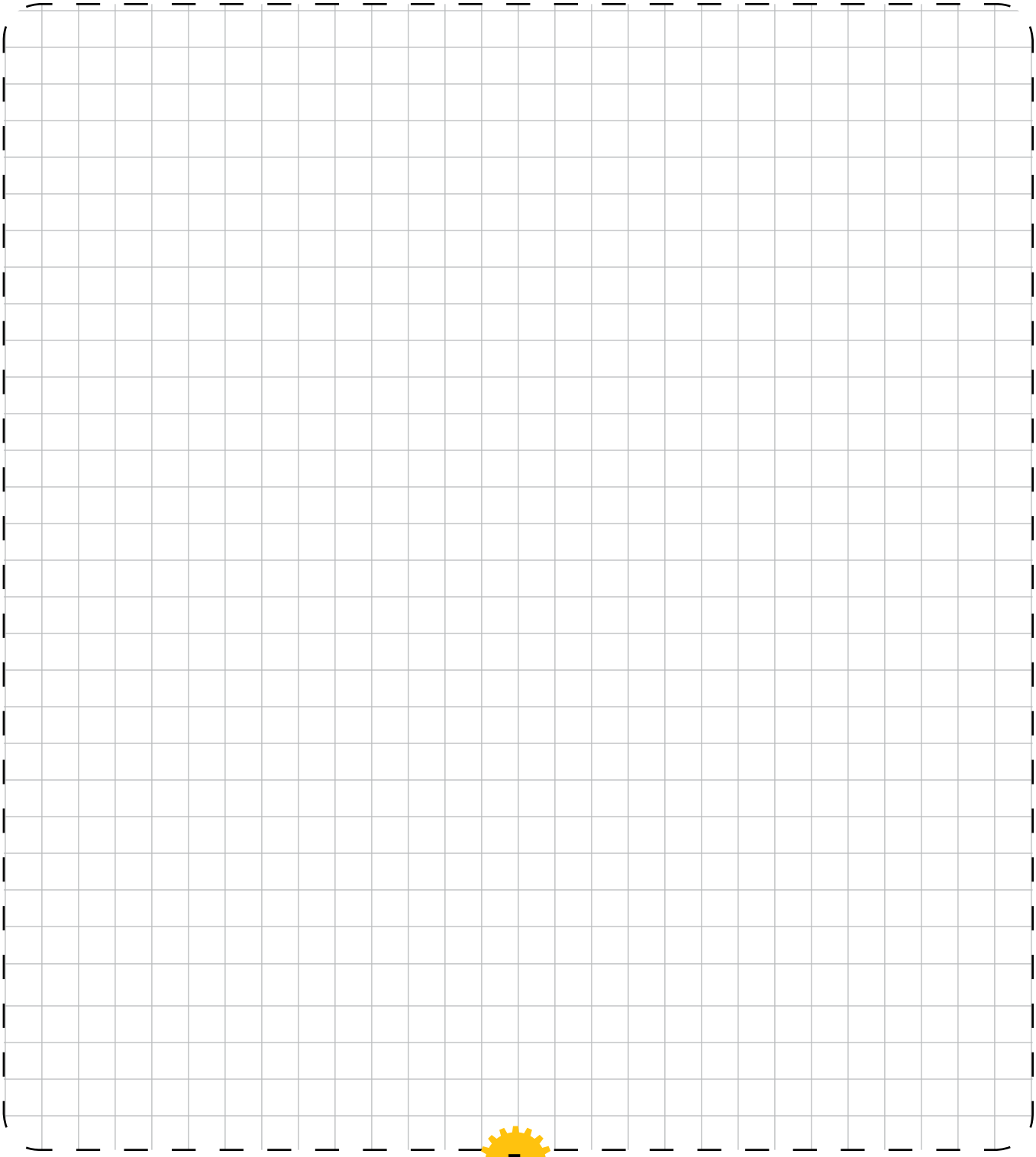
CONSTRAINTS

2. Research and find idea examples. Make a list of the key parts and possible materials you may need to model your idea.

MATERIALS

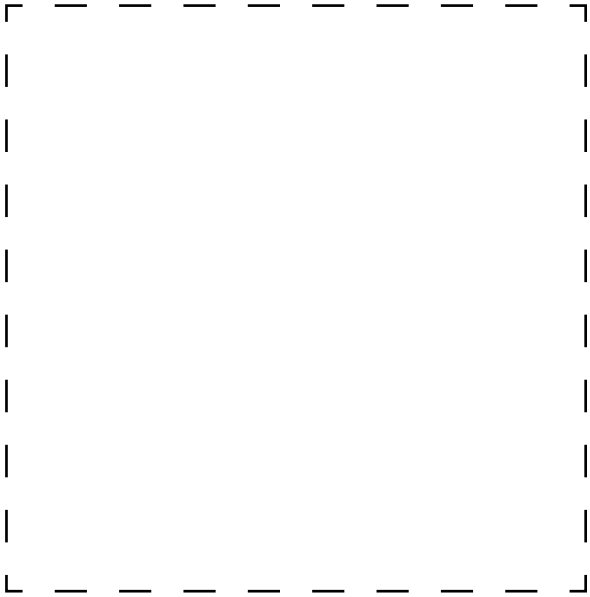
Design IT!

Make a sketch of your design solution. Upload a photo of your sketch!



Build IT!

Build your model and document it with a photo.



Test IT!

Describe a test you could perform to determine if you model meets the criteria of the design problem.

Evaluate IT! Refine IT!

Perform the test. Record your observations and evaluate the results. Does it meet the criteria of the problem?

Propose some changes you could use to improve the design.

Test and compare the results with your original design.

Communicate IT!

Present your findings! Plan out your presentation. Explain how your design works and why you made the decisions you did. Explain if any of your redesigns showed improvement and why.

Image Gallery

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