Complete this form to create an effective design challenge.

**CHALLENGE IDEA**
How might you use the design process to solve a problem?

**DEFINE THE PROBLEM: DESIGN BRIEF CONSTRAINTS**
- What problems are students solving?
- Who is this design for?
- What will students create?

**WHAT SUBJECT MATTER OR THEMES DOES THIS CHALLENGE ADDRESS?**
Subject matter can include civic, urban planning, computational thinking, etc. Use your subject area.

**WHO IS THIS DESIGN INTENDED FOR?**
Identify the target audience your students will be designing for.
WHAT ARE THE CONSTRAINTS OF THIS CHALLENGE?
Constraints are limitations a student must consider while engaging in a design challenge. Constraints can be physical (working within a defined space), economic (within a budget and limited to specific materials), or safety related.

WHAT RESOURCES ARE NEEDED FOR THIS CHALLENGE?
List all resources needed (paper, scissors, fabric, card stock, 3d printer, etc...)

WHAT KIND OF MEDIA SHOULD STUDENTS UPLOAD?
Check all that apply.

- Images (JPG, PNG, TIFF, GIF, other image format)
- Video
- Web Links or URLs
- Audio Files
- Physical Models
- Digital Models
- Other: ___________

THE DESIGN BRIEF
Synthesize your problem and constraints into an actionable design brief. Example: Design a safe and accessible public space for the elderly using the game Minecraft.
DESIGN PROCESS
The Design Process is an approach for breaking down a large project into manageable chunks. Architects, engineers, scientists, and other thinkers use the design process to solve a variety of problems. Use this process to define the steps needed to tackle each project, and remember to hold on to all of your ideas and sketches throughout the process.

COLLECT INFORMATION

LIST ACTIVITIES THAT STUDENTS WILL DO TO MEASURE AND GATHER DATA
Example: Use a lux meter to measure light.

LIST RESOURCES AVAILABLE FOR INFORMING THE SOLUTION
Trade magazines, case studies, readings, websites, videos, etc..

COLLECT INFORMATION PROMPT (250 WORDS OR LESS)
Give your students clear directions on how and where to collect information. "Use a lux meter to measure all available light use. Addressing how to assess a space’s sustainability through tools like lux meters will give you a good measure of each light’s electrical consumption and will help you in adjusting the space’s brightness."
BRAINSTORM AND ANALYZE IDEAS

BRAINSTORM ACTIVITY:
List activities for students to help them start creatively thinking of solutions using information they have collected. Example Activities: Students will __________ using the information collected (sketch ideas, use post-it notes to group think, or do a gallery walk activity).

BRAINSTORM MATERIALS:
List materials students will use in order to creatively think of solutions using information they have collected. Reference the constraints you listed earlier to see what physical materials you might use to brainstorm ideas.

ANALYZE PROMPT (250 WORDS OR LESS)
Refer to the constraints identified earlier. Ask your students "Does the idea meet the constraints in the design brief?"
DEVELOP SOLUTIONS

DEVELOP SOLUTION ACTIVITY:
List activities for students to do in order to improve their ideas into more detailed solutions. Example "Model Your Space: Build a model of your space (room, library, etc..) and help bring into focus what affects the space in terms of lighting, furniture placement, and color. Even a simple model gives you room to sketch out plans for what you could change. Think about how one adjustment will affect the entire space without testing it in the actual space."

DEVELOP SOLUTION MATERIALS AND TOOLS:
List materials/tools your students will use in this step. Example: Use SketchUp to build a 3D Model of your space.

FINAL DESIGN
How do you know when a project is finished? Use this section to remind the student of the criteria and constraints for the final design and check against The Design Brief.
Ask your students "Does the final design meet the criteria and constraints in the design brief?"

WHAT KIND OF MEDIA SHOULD STUDENTS UPLOAD IN THE FINAL DESIGN STEP?
Check all that apply.

- Images (JPG, PNG, TIFF, GIF, other image format)
- Video
- Web Links or URLs
- Audio Files
- Physical Models
- Digital Models
- Other: ___________