Technological Design Model

The process of using the model
In the previous lesson you were introduced to the design process with a look at technological design. In this lesson, you will look more specifically at technological design using the “Technological Design Model (TDM)”. In this lesson you will learn about the 7 components that make up the model. Before we begin take a look at the TDM on the next slide and review it.
Technological Design Model

1. Define the Problem
2. Generate Ideas
3. Test your ideas
4. Select an idea to develop as a solution to the problem
5. Make the solution
6. Evaluate the solution
7. Present the results

Technological Design Loop

This model is presented as a loop in that the process continues from design to improvement.
Technological Design Model (TDM)

Here are the 7 components of the model:

1. Defining the problem (what is it?)
2. Generating ideas (brainstorming)
3. Testing the solution (does it work?)
4. Selecting a solution (make a choice)
5. Making the item (construction process)
6. Evaluating the item (feedback and testing)
7. Presenting the results (show and tell)

The Design Folio is used to guide your use of the Technological Design Model. On the slides that follow, you will see both an explanation of the parts of this process and an example of the design folio used to guide the process.
1. Defining the Problem

The design process generally begins with identifying and defining a problem — there is some need to be met or some want to be fulfilled, and the designer must understand exactly what it is.

What must the solution do?
What are the requirements?
What criteria must be met?
What constraints must be met?
Defining the problem - continued

You will need to fully understand the problem in order to develop a solution.

What must the solution do?
What are the requirements?
What criteria must be met?
What constraints must be met?

What my project must do
Write a list of the things that your idea must do to solve the challenge

All Criteria and Constraints listed here
2. Generating Ideas

After investigating and researching the problem, the designer generates a number of ideas for a solution. It is particularly helpful for several students to brainstorm ideas, you will generally work in a small group at this stage.
3. Testing the design ideas

The design ideas are modeled and tested, and then reevaluated. If necessary, the original design is dropped and another is tried. Eventually, through a series of iterations, repeating the various steps of the process as necessary, a final design is chosen.
4. Selecting a Solution

Considering the original criteria and ideas, along with various constraints, one design — or, in some cases, more than one — is chosen as the most promising.

You will be asked to give reasons for selecting your final design.

This design was most suitable because…
5. Making the Item

Construct the item using a materials list — a shopping list of items that are needed to assemble your product. You will need to define the tools needed, the materials needed, and the processes to be used to create your item.
6. Evaluating the Item

One of the many lessons you will learn from making the item is that there are many possible solutions to a technological problem, and that while some answers are clearly wrong — they don’t work, or they work poorly — there is no such thing as “the” correct answer.
7. Presenting the Results

Share your results with others and demonstrate how your item works or you may have to make modifications as necessary and evaluate what you have done and try it again.

its purpose.
Technological Design Model Summary

- The **Technological Design Model** (TDM) is a process for technological problem-solving.
- There are seven (7) steps to the TDM process.
- The **Technology Design Folio** is a problem-solving tool that helps guide you through the 7 planning stages of the TDM.
- Each of the 7 components must be followed in the proper sequence as numbered when planning activities using the folio, but there will be times when you repeat steps in the process without staying in sequence.