

# Technological Design Model

The process of using the model

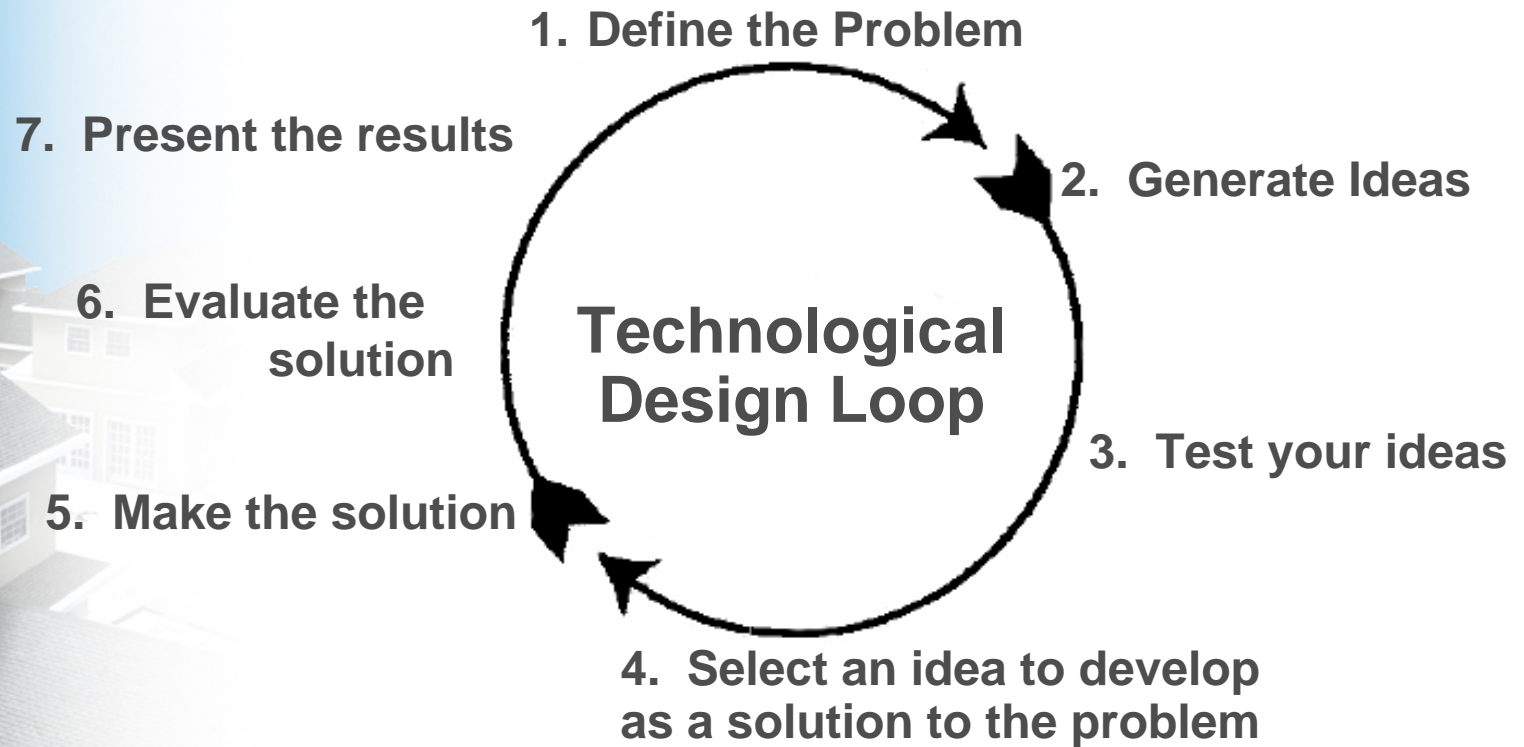


# Technological Design Model

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



This model is presented as a loop in that the process continues from design to improvement.

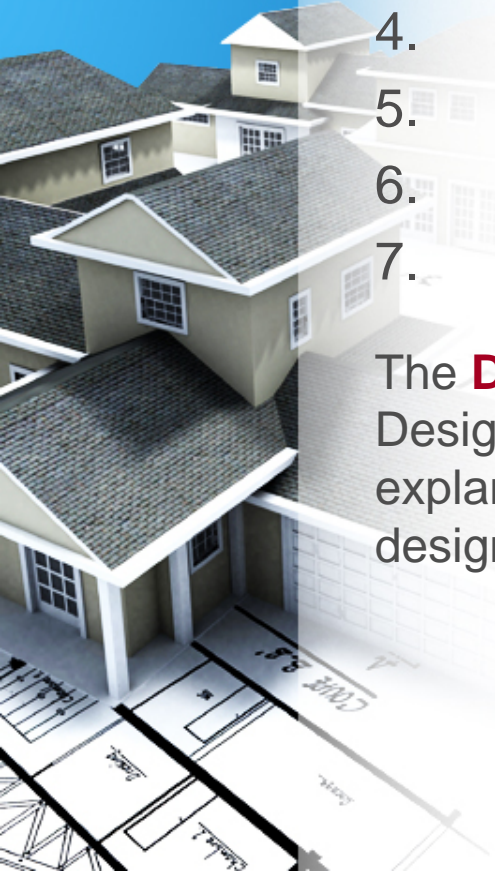


# Technological Design Model (TDM)

*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.



# Technological Design Model

## 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?

## Technology Education

Montgomery County Public Schools  
Rockville, Maryland  
Technology Design-Folio

Name:	
Grade:	
Date Started:	
Date Due:	
Teacher:	



### Technology Challenge

write a brief description of the challenge you are to solve in this box...

Illustration  
of  
topic

**Problem Statement Goes Here**

**Hints:** What is the design brief asking me to do?  
What do I need to find out?

# 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*



1 It must...

2

3

4

5

6

7

8

9

10

11

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13

14

15

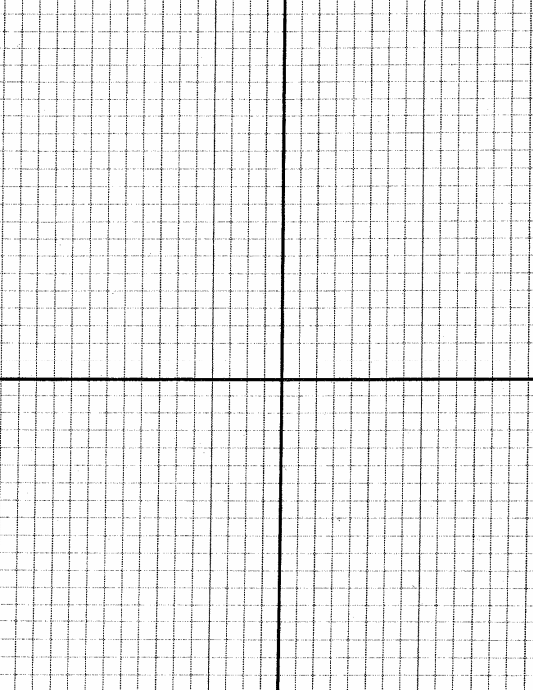
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**All  
Criteria  
and  
Constraints  
listed here**



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.

Draw pictures or diagrams of your ideas:



# Technological Design Model

## 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.

### 3. Testing the Designs

Select 3 of your designs and test them. Record the testing data in the chart below. Describe the strengths and weaknesses of each design in the space provided.

Describe Design	# of Pennies held
1.	
2.	
3.	



#### Design 1, Strengths and Weaknesses:

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#### Design 2, Strengths and Weaknesses:

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#### Design 3, Strengths and Weaknesses:

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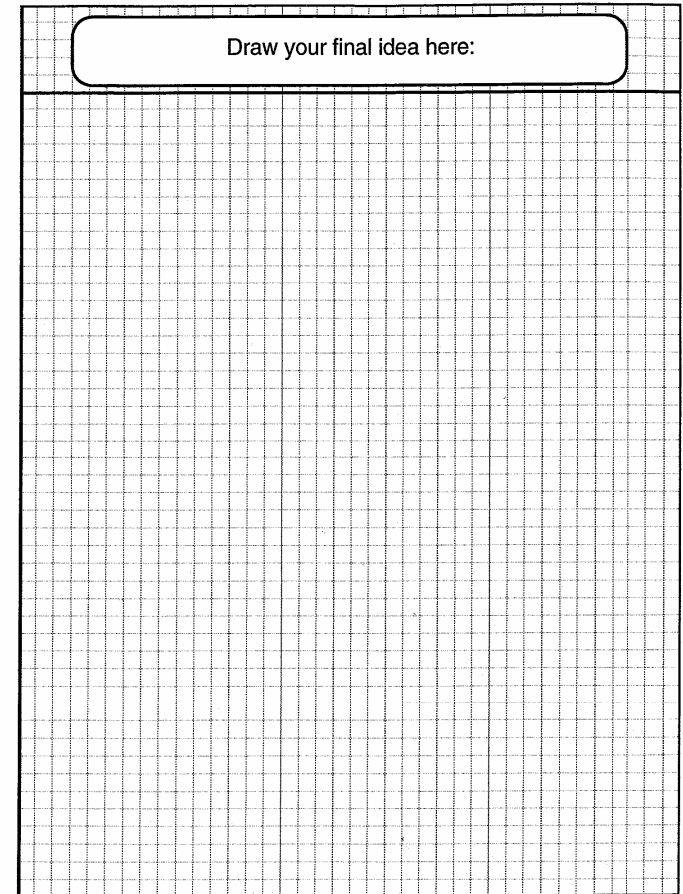


# Technological Design Model

## 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.



Draw your final idea here:

This design was most suitable because...

# Technological Design Model

## 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.

Give reasons for the choice of your final design

The design chosen is the most suitable because ... \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



### Resources of Technology



Tools & Machines:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Materials:

**All  
Resources and  
Processes  
listed here**

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

Processes:

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\_\_\_\_\_

Information: \_\_\_\_\_

Energy: \_\_\_\_\_

People: \_\_\_\_\_

Capital: \_\_\_\_\_

Time: \_\_\_\_\_

# Technological Design Model

## 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.



The things I was really happy with when the design was made ...

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The things that were ok when the design was made ...

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**All  
personal feedback  
information goes  
here**



The things I was not real happy with when the design was made ...

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How I could improve the design..

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What I learned while working on this challenge..

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# Technological Design Model

## 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.

