



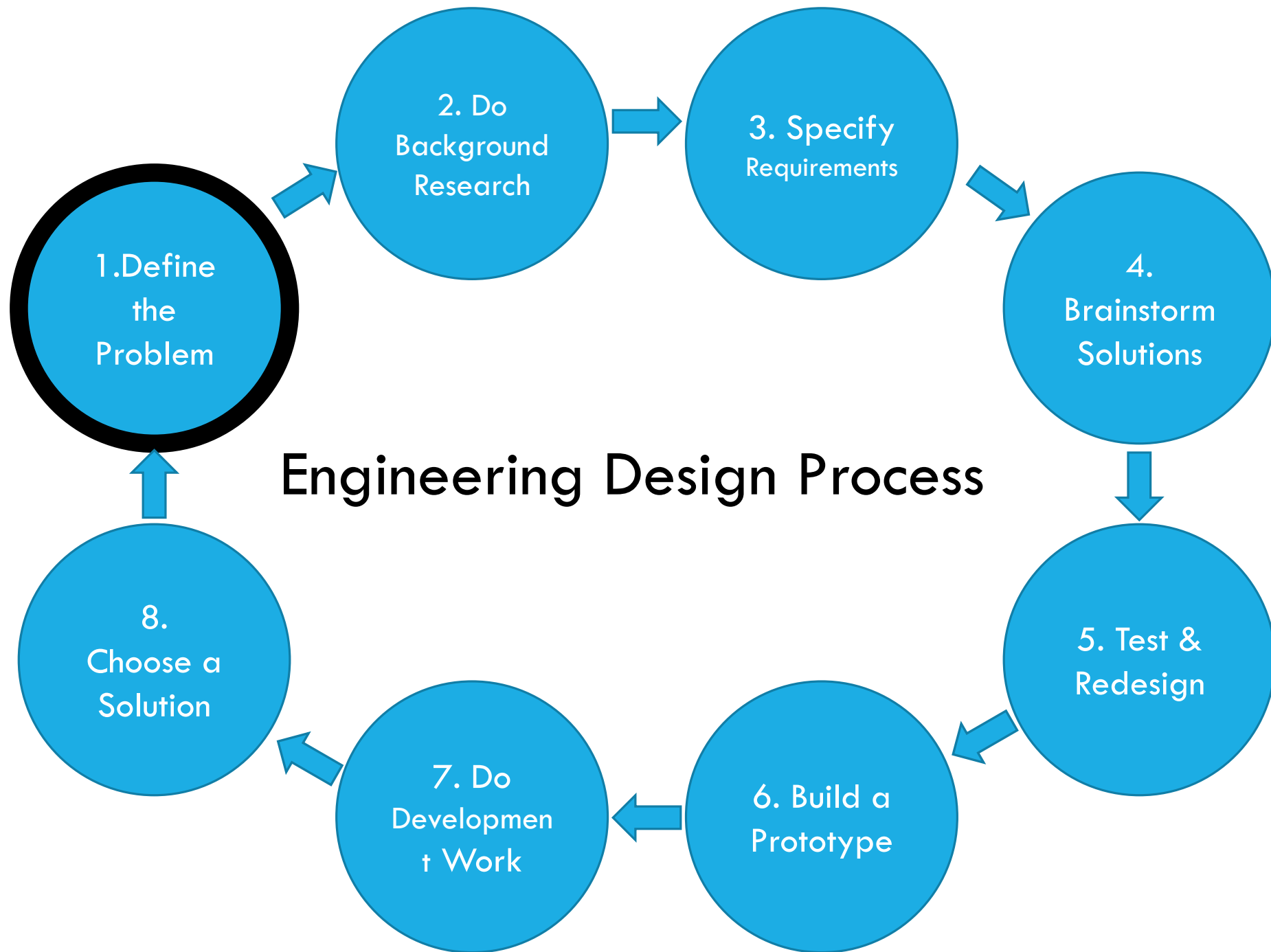
# ENGINEERING DESIGN PROCESS

8/2/18

# ENGINEERING DESIGN PROCESS

Cheesy intro video:

[https://www.youtube.com/watch?v=MAhpfFt\\_mWM](https://www.youtube.com/watch?v=MAhpfFt_mWM)



# DEFINE THE PROBLEM

Identify the problem you are trying to solve or need which you are addressing

**1. Define the Problem**

2. Do Background Research

3. Specify Requirements

4. Brainstorm Solutions

5. Choose a Solution

6. Do Development Work

7. Build a Prototype

8. Test and Redesign

# DO BACKGROUND RESEARCH

- Examine the current state of the issue and current solutions
- Explore other options via the internet, library, interview, etc.

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# SPECIFY REQUIREMENTS

Determine the **constraints** and **criteria**

## KEY VOCAB

**CONSTRAINT:** a limitation or condition that must be satisfied by a design

**CRITERIA:** a standard or aspect of a design that can be measured

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# BRAINSTORM A SOLUTION

- Look at solutions to similar problems
- Draw on mathematics and science
- Think *creatively*

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# CHOOSE A SOLUTION

From what you know, choose a solution

“Do the best you can until you know better. Then when you know better do better.” – Maya Angelou

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# DO DEVELOPMENT WORK

Plan out your design (sketch/model)

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# BUILD A PROTOTYPE

Make something!

## KEY VOCAB

**PROTOTYPE:** A first working model or product from which other forms are developed

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# TEST AND REDESIGN

Experiment with your prototype

Does it meet the original constraints?

How does it meet the original criteria?

What worked?

What didn't work?

How can it be improved?

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# REPEAT!!!

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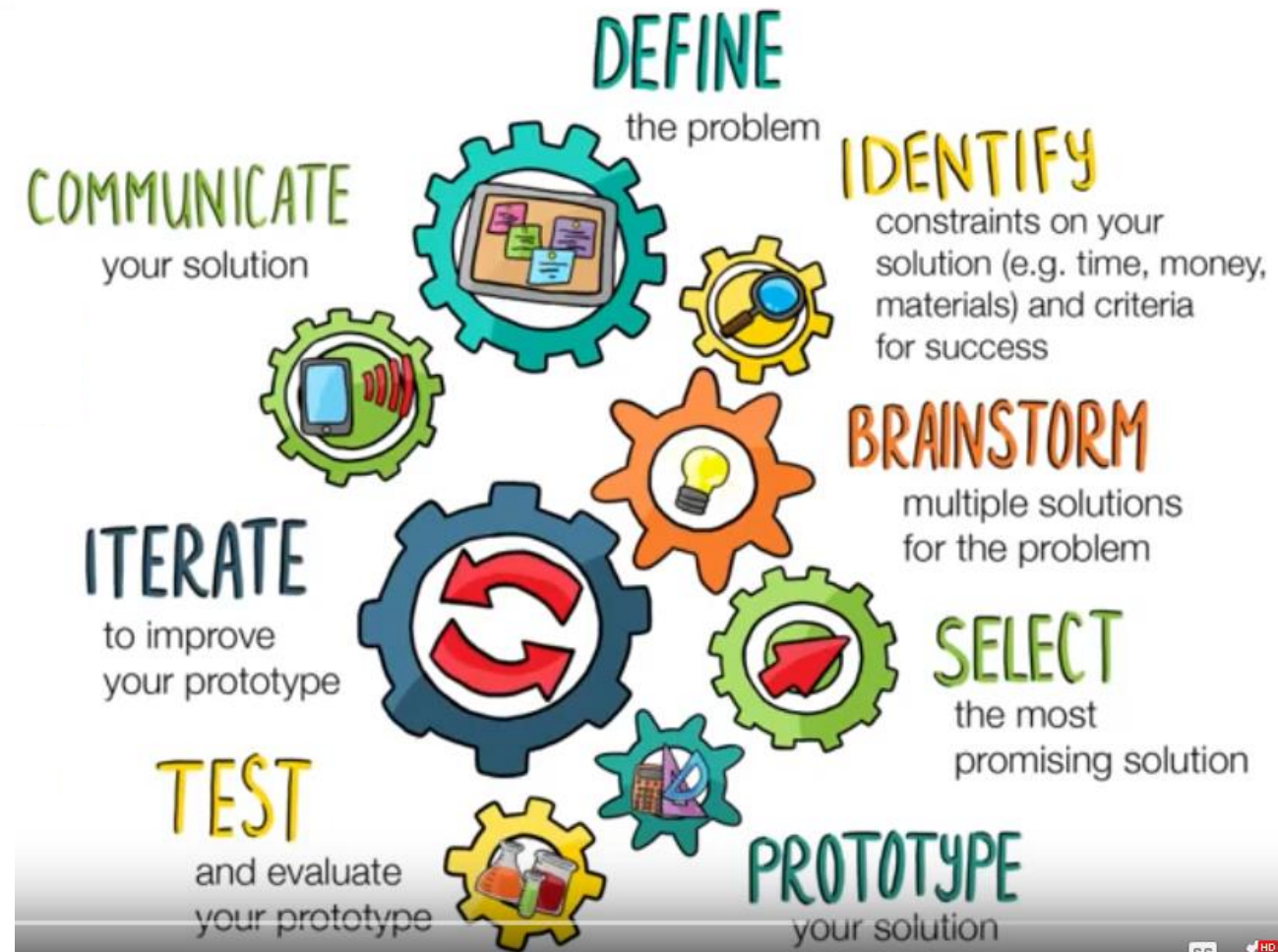
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# OTHER ENGINEERING DESIGN PROCESS MODELS:



# PAPER AIRPLANE CHALLENGE!

## Rules:

- Your plane can only consist of paper and <4" of scotch tape
- Can only throw your plane in the designated throwing areas

### Goal #1

Create the plane  
which flies the  
farthest

### Goal #2

Create the plane  
which flies the  
most accurate  
over 10 feet

Put your name on your plane (and decorate!) your plane and turn it in before leaving class

## CLOSING: *TURN IN BEFORE LEAVING CLASS*

On a piece of paper, write the steps of the Engineering Design Process (you can look up a different process than the 8 steps we covered) and briefly explain how you completed each of the steps for the paper airplane challenge