

Summer of STEM

Engineering Challenges



My age:

What I want to be when I grow up:

My favorite subject

Summer is our favorite time of year!

This summer get your parents, siblings, friends, and cousins together to plan, design, build, and share these activities!

From July 11 to August 12 you will get a weekly challenge to participate in! You'll use the Engineering Design Process to tackle activities brought to you by *real engineers*! Use the Engineering Journal on the following pages to document your Engineering Process!

1

GET YOUR CHALLENGE

Watch *Chats with Change Makers* and receive your weekly Engineering Challenge!

2

BUILD, BREAK, HAVE FUN!

The *Engineering Journal* is your guide through the *Engineering Design Process*

3

SHARE!

When you have your finished and final project, share it to our Facebook Page!

I love:

- Drawing
- Legos
- Minecraft
- Building
- Being outside
- Crafting
- Games
- Playing with Friends

Identify the Problem

Are you trying to: fix something that doesn't work? Make something better? Create something that's never been done?

What materials do you need?

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Learn Specifications

Are there physical constraints? Who is the user? What do they need? What will it cost? What is my budget? What is the timeline?

Brainstorm Solutions

Come up with as many possible solutions as you can. Then ask: How well do these ideas meet some or all of the requirements?

Predict the Future:

What do you think will be the biggest challenge that you face? How will you overcome that?



Design It

It's time to start sketching, drawing, doodling, noodling, rendering, & wire framing!

Activity

This week's activity is:

Slow It Down

Use the QR code to watch the **Chats with Change Makers** episode that links with this activity.



Use this QR code to find the **Activity Guide!**



Build It

Now that you have your sketch, it's time to build!

Test, Improve, Redesign

You have a working model. Now try to break it!

Share it

*Now that you have a tested, redesigned, and final project: tell people about it! If valuable feedback is shared: consider going back to **Test, Improve, Redesign,** and **Build it!***



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Critical Load

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Mechanical Hand

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Foil Boats

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Cell Phone Stand

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