

My Engineering Notebook

Unit 1: Structures & Bridges

A place to sketch ideas, make predictions, test designs, notice what happens, and improve your thinking.



Engineering is a cycle.

Ask, imagine, create, test, and improve - then start again. There is no single perfect path.

Engineer: _____

Date: _____ Activity: _____

For ages 6-10 • Use with any Unit 1 activity

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How to Use This Notebook

You do not need to fill out every page every time. Choose the pages that feel useful for the activity and for your family.

ASK	IMAGINE	CREATE	TEST	IMPROVE
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For kids

Draw, write, circle, cross things out, change your mind, and try again. This notebook is for your thinking - not for perfect answers.

For caregivers

Ask a few questions, stay curious, and let your child explain their ideas. You do not need to know the engineering answer.

Helpful questions to try

- What do you notice?
- What do you think might happen?
- Why do you think that worked?
- What could you change?
- What would you try next?

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My activity today:

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One thing I am curious about:

1. My Engineering Design

Sketch your idea before you build. Label important parts and show how you think your design will work.

What am I trying to build or solve?

Draw your design:

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What materials will I use?

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What part of my design is most important?



2. What I Think Will Happen

Engineers make predictions before they test. A prediction does not have to be correct - it gives you something to compare with what really happens.

My prediction:

Why do I think that?

What do I think will help my design work?

- A strong base
- Supports or braces
- A useful shape
- Careful weight placement
- The materials I chose
- Something else



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Something I want to watch for when I test:

3. Build & Test

Build your design, then test it. Watch carefully. Testing helps engineers learn what to improve.

Test 1

What did I test?

What happened?

What worked well?

What did not work the way I expected?



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4. What I Noticed

Engineers look for patterns, movement, bending, balance, strength, and other clues that explain what happened.

Draw or write what you noticed during testing:



I noticed...

- Something bent or changed shape
- Something moved or wobbled
- The base helped
- Supports helped
- One shape worked better than another
- Weight placement mattered
- Something surprised me

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The most important thing I noticed was:

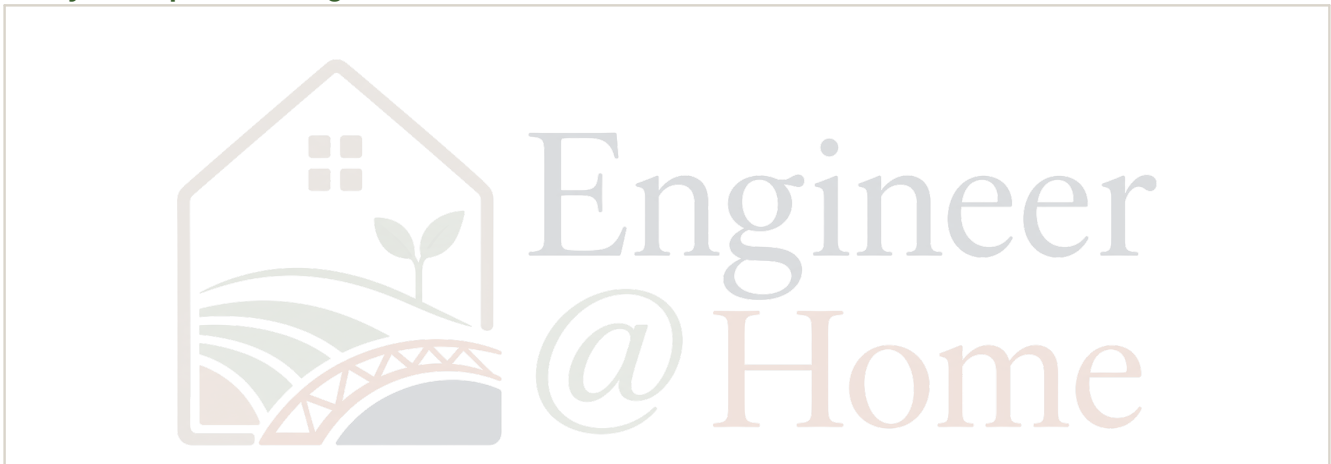
5. Improve & Redesign

Engineering is about learning from what happened and trying again. Change one part of your design, then test it again.

What will I change?

- ☐ Shape
- ☐ Base
- ☐ Supports
- ☐ Height
- ☐ Material placement
- ☐ Materials
- ☐ Something else

Draw your improved design:



Why am I making this change?

After I test again, did the change help?

- ☐ Yes
- ☐ A little
- ☐ Not yet

6. Engineer Reflection

Take a moment to think about your design process, not just the final result.

One thing I learned:

One thing that surprised me:

The hardest part was:

I am proud of:

If I did this activity again, I would:



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7. My Next Idea

A new question can lead to a new design. What would you like to try next?

My next engineering question:

Sketch your next idea:

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What would I change or test differently?

Keep going.

A design does not have to be finished after one try. Engineers learn, redesign, and test again.

Engineering Notes

Use this page for sketches, measurements, questions, new ideas, or anything else you want to remember.

