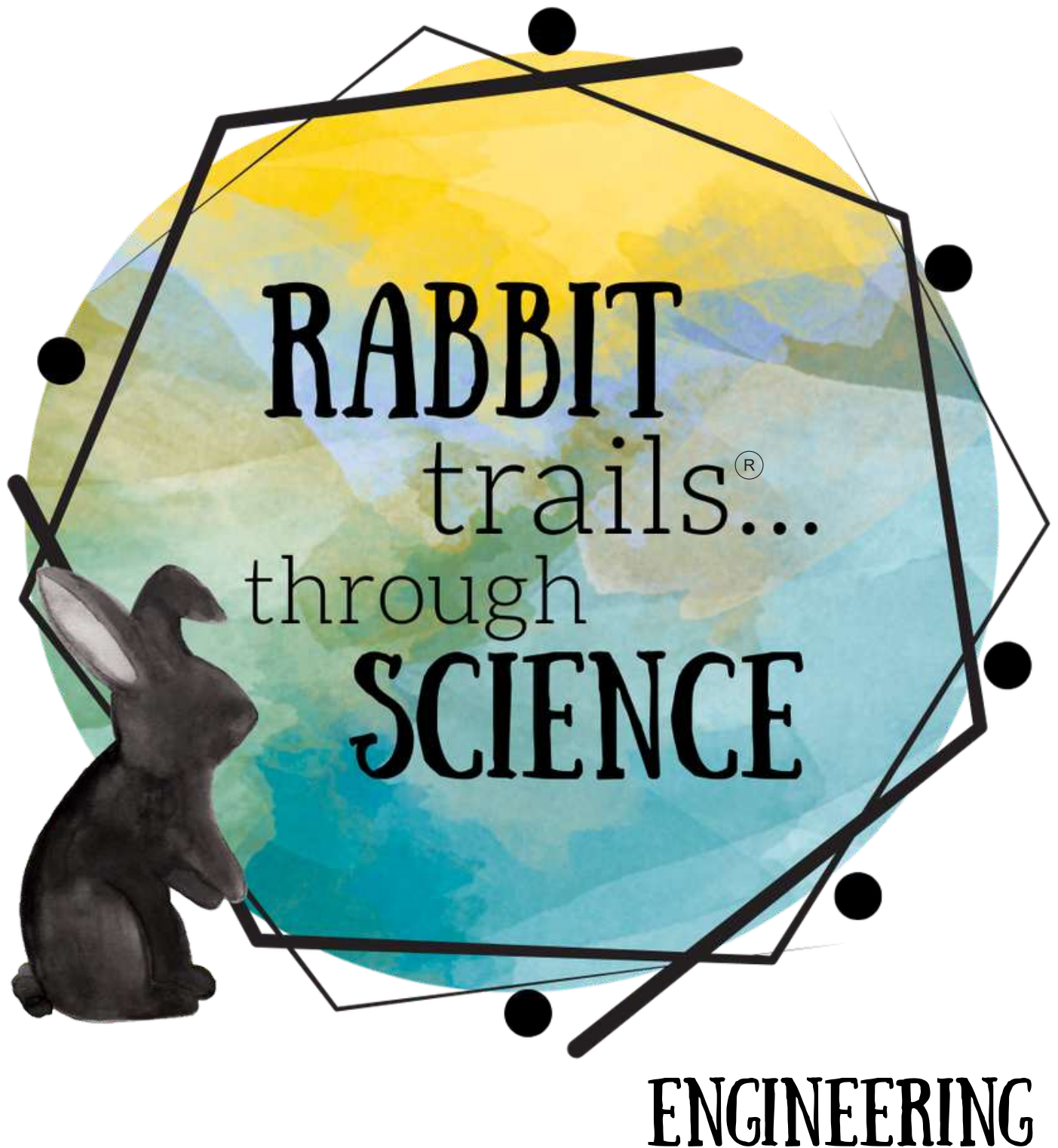


A Science Curriculum





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YouTube: [Rabbit Trails Homeschool](https://www.youtube.com/RabbitTrailsHomeschool)

HOW TO USE THIS CURRICULUM

I'm so excited that you've chosen Rabbit Trails through Science to use in your homeschool! This curriculum is a Unit Study inspired, relaxed curriculum for middle grades. What this means is that it's not designed to have lots of busy work. It's designed to provide quality literature to your children, hands on science experiments and activities, opportunities for copywork, journaling and observation, and other means to learn fun and enriching science material.

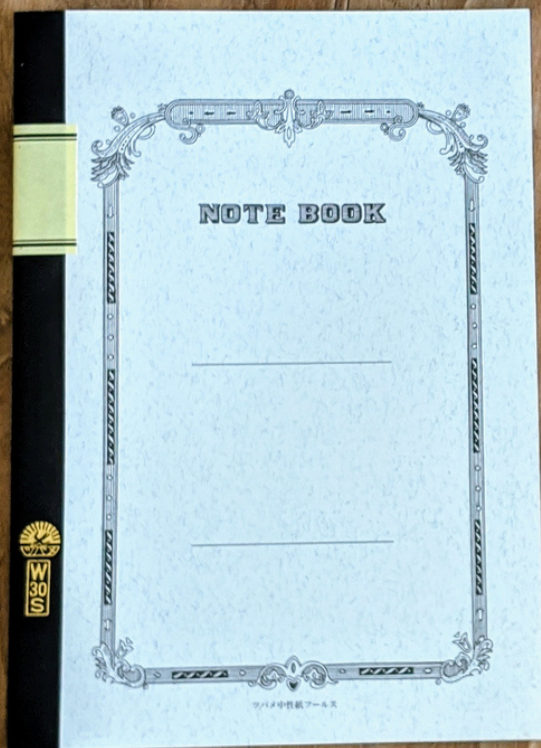
Rabbit Trails through Science was created with homeschooling adventures in mind. Not only will you be learning science, but your children will go on a journey through amazing books while gaining scientific knowledge about the world around them. This curriculum is meant to be used on *your* child's level. It's not meant to have boxes checked off each day, but to do what works for your unique family. When it comes to copywork and vocabulary, there are suggestions given, but take what you need and leave the rest. If your child isn't at the level of the suggestions, then create what works for them. Same thing if they're capable of beyond what is recommended. Make this curriculum your own!

Rabbit Trails through Science is a faith-based curriculum with Bible verses included in each lesson. However, finding quality books that do not discuss evolution can be difficult. Feel free to skip these sections in any books that discuss this, or use it as an amazing learning opportunity and discussion point to talk about your family's beliefs regarding creation.

I encourage you to enjoy reading as many of the books listed in this curriculum as you can! Quality literature is the framework of this curriculum. There is one spine book to this curriculum, with many other picture books recommended. However, don't become overwhelmed with purchasing these books if you don't have the means. Many can be found at libraries, on used book websites, etc. The books listed in the Rabbit Trails and Library Lists are just suggestions. Use what books you have on hand or find at your own library on the topic! If you do choose to buy all of the books, you can access many in my shop. **You can also access all of the links, YouTube videos, and more in the Resource Page in the back of this curriculum.**

NOTEBOOK STYLE CURRICULUM

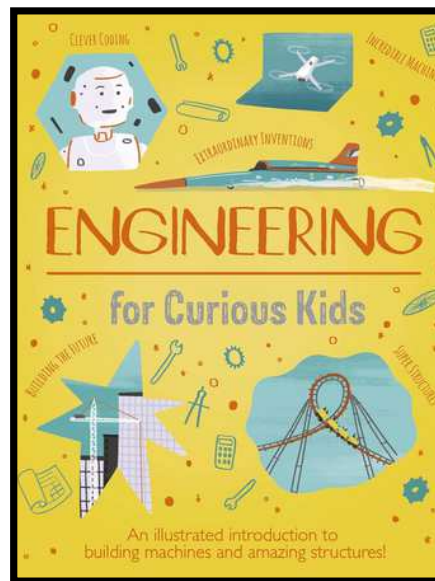
As you may have noticed, this curriculum does not include any kind of workbook for your children to work in. This was designed to all be done in a notebook. You may choose a standard, wide ruled notebook, or you can choose to use our pre-made Companion Journals. Feel free to use whatever method works best for you and your child.



CORE CURRICULUM BOOKS

These books are recommended to be purchased to go along with the curriculum as they'll be a part of each lesson in Rabbit Trails through Science: Chemistry. All other suggested books are listed inside of the individual lessons.

Engineering for Curious Kids
by Chris Oxlade



SUPPLY LIST

Engineering requires a lot of experiments, which means a lot of materials are required. We have included a list of all of the required materials for the main experiments inside of the Some Fun sections. While the More Ideas does also include some experiment ideas, these are all optional to add into your learning and we have only added items you wouldn't typically have at home for these.

Supplies from Home Science Tools:

(Link in Resource Page)

Hydraulic arm kit

Electric Motor Generator Kit

Supplies from Amazon:

(Link in Resource Page)

Solar powered STEM kit

All other supplies:

Popsicle sticks

Hot glue

Fabric

String

Fishing weight

Toothpicks

Clear plastic cups

Pinwheel

Foil

Wood glue

Mini Marshmallows

Uncooked spaghetti

Masking tape

PVC pipe

Clear vinyl tubing

Duct tape

Food coloring

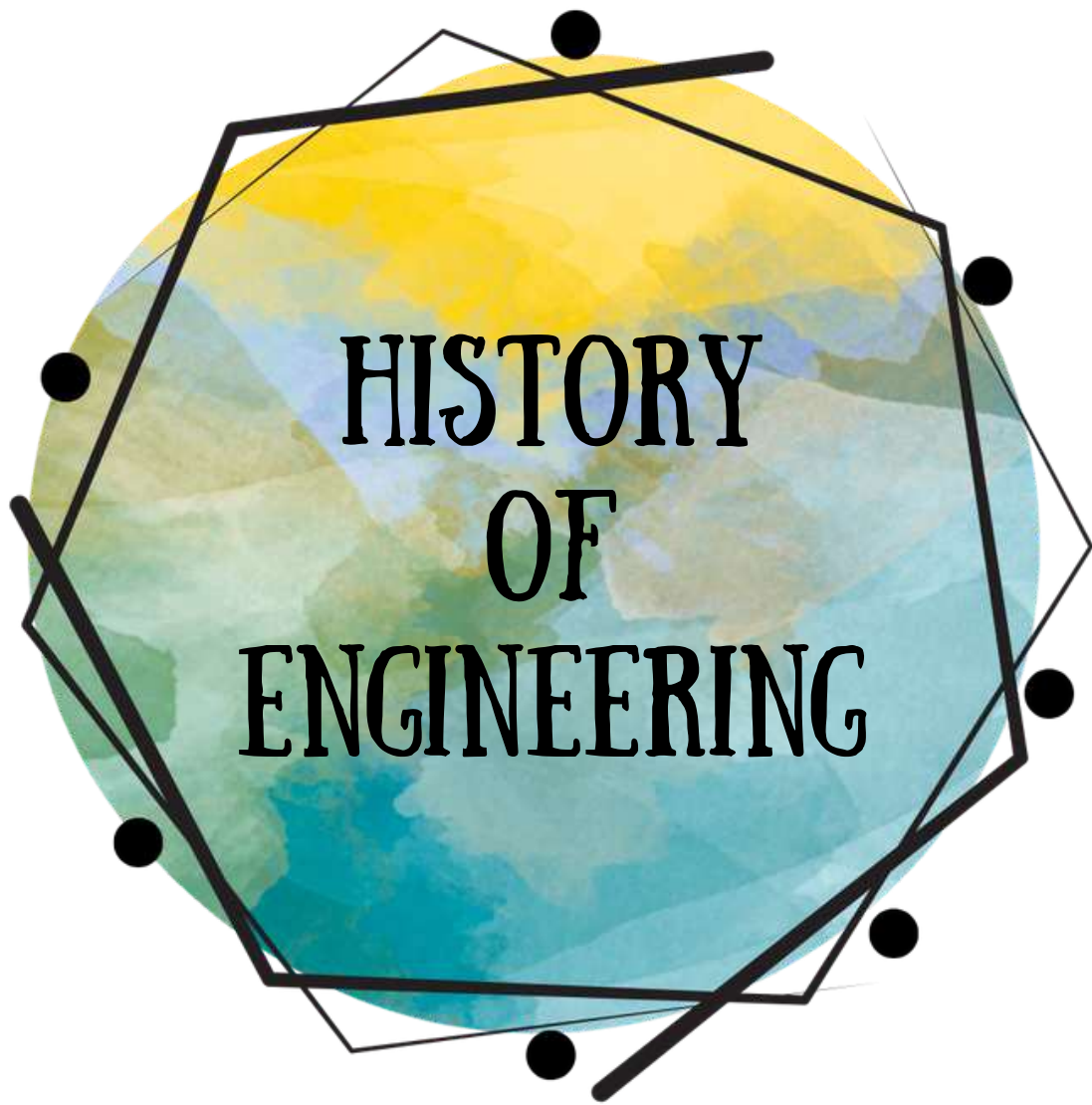
2 liter bottle (empty)

Peat moss

Perlite with nutrients

Old sock

Lettuce or basil seeds





Begin by reading pages 5-25 in Engineering for Curious Kids over the next few days, stopping to discuss new topics. Engineering is such an interesting field that covers a wide range of topics! We will learn about what engineering is and the history of engineering in this lesson.

Observation and Journaling: Turn to page 19 in Engineering for Curious Kids and copy the diagram of how artificial fertilizers were made by chemical engineers.



Copy the information about The Father of Chemical Engineering on page 18 of Engineering for Curious Kids. For all copywork, work where your child is, making copywork selections shorter or longer based on their abilities.

Therefore thus says the Lord God, "Behold, I am the one who has laid as a foundation in Zion, a stone, a tested stone, a precious cornerstone, of a sure foundation: 'Whoever believes will not be in haste.'" -Isaiah 28:16

In ancient architecture, engineers used a cornerstone. This was not only to help builders as a reference point, but to create a firm foundation of the building they were making. Jesus is our cornerstone- He is our sure foundation. He will never crumble, never fall apart, and will always be a strong support to hold us up.



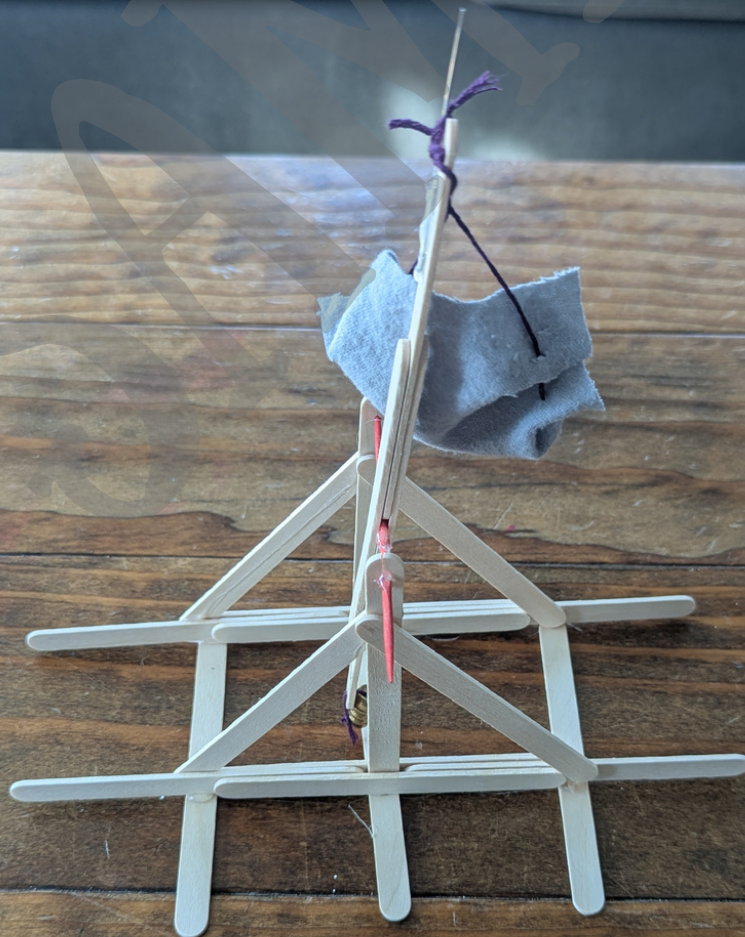
Let's go back to ancient times and use some of their engineering strategies by building a trebuchet.

Trebuchets date back to 5th century China (called "pao").

The English word "trebuchet" was first used in 14th century Europe, but of course, the actual word "trebuchet" is French! They were used as medieval weapons of war. Follow the YouTube video instructions inside the playlist on our Resource Page to build.

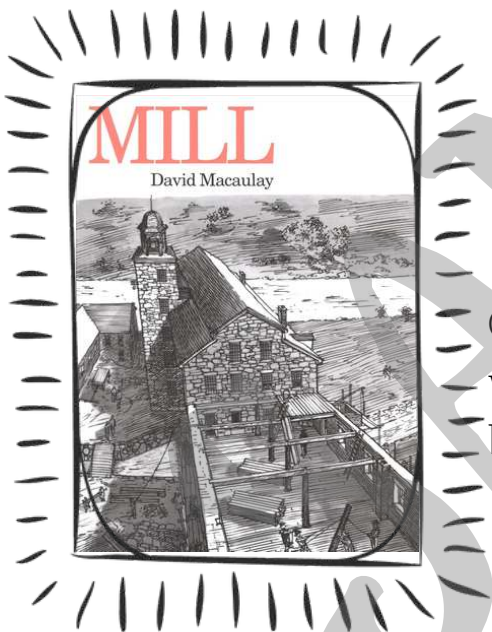
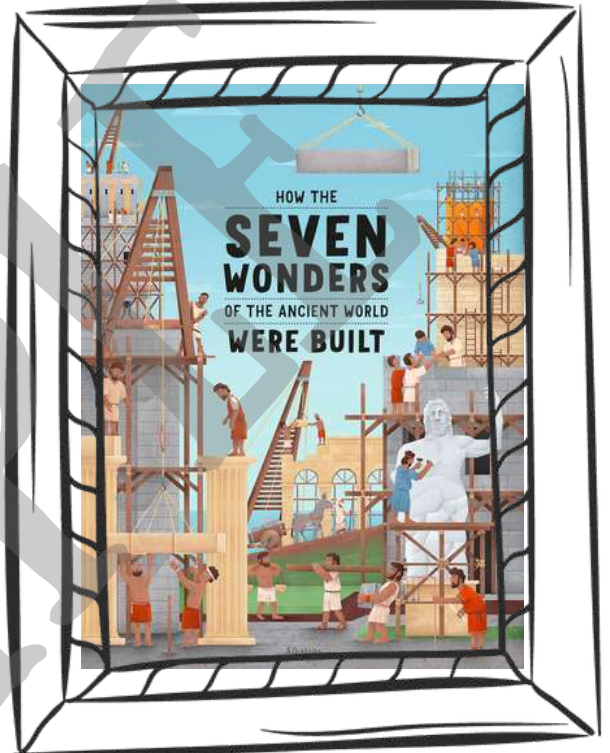
Supplies needed:

- Popsicle sticks
- Hot glue
- Fabric
- String
- Fishing weight
- Toothpick



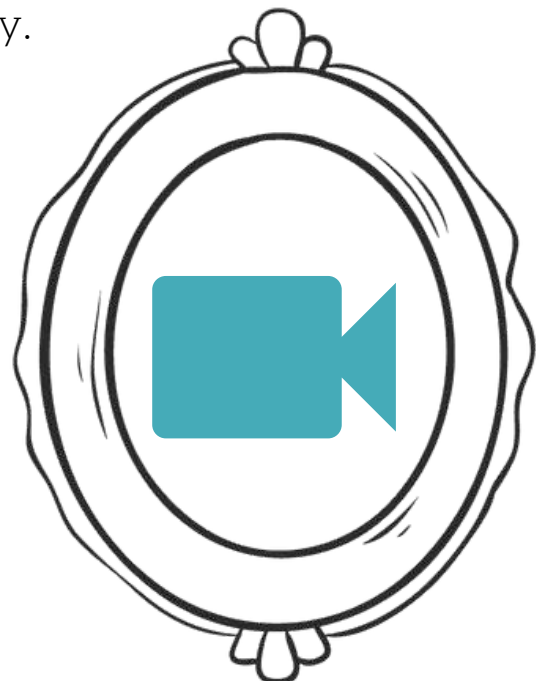


Let's learn more about the history of engineering. Start with How the Seven Wonders of the Ancient World Were Built by Ludmila Henkova.

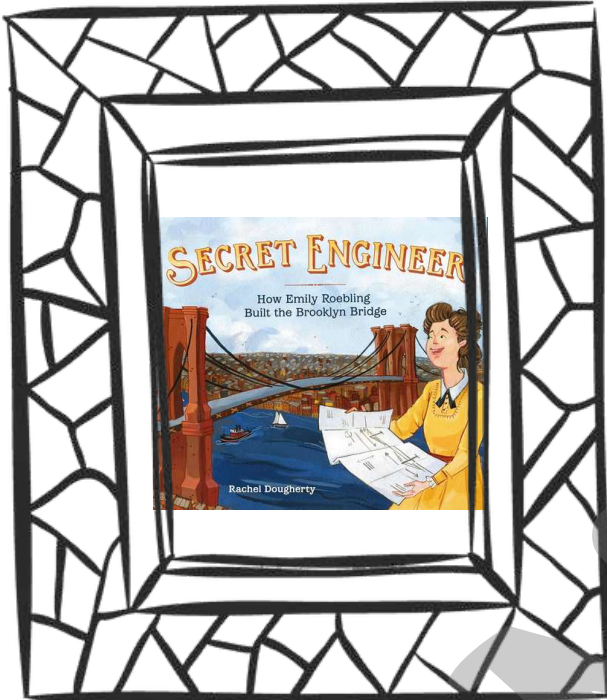


Continue learning with Mill by David Macaulay.

Learn more about early engineering by watching A Short History of Engineering on MrEngineeringGuy's YouTube channel.



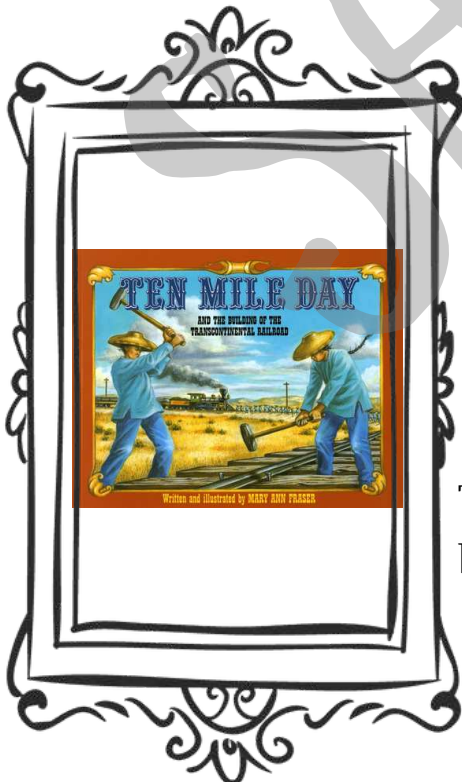
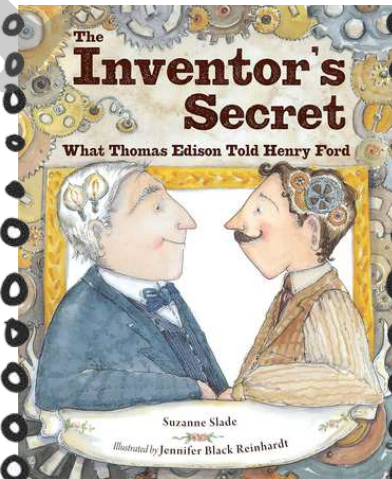
Secret Engineer
by Rachel Dougherty



LIBRARY
list...



The Inventor's Secret
by Suzanne Slade



Ten Mile Day
by Mary Ann Fraser



-Vocabulary Words: There will be vocabulary words to add to your child's journal in every lesson. Work where your child is. For younger kids, they can choose fewer words, where older children can find definitions for all.

-groma	-distillation	-semiconductor
-axles	-generators	-prototype
-lathes	-valves	-electromagnetic
-synthetic	-transistor	radiation

-In ancient times, a Clepsydra, or water clock, was used to tell time. Using two clear plastic cups, cut a tiny hole in the bottom of one and fill with water. Allow the water to drip into the second cup, measuring how much water is in the cup after a certain amount of time (30 seconds, 1 minute, etc). Experiment with different hole sizes to get the desired drip flow.

-Let's use the power of steam to make a pinwheel spin. Cover a small pot with tin foil, making a small hole in the middle of the foil. Once the water is boiling, carefully hold the pinwheel over the hole (wear oven mitts!) and see how the steam makes it spin.

-Penicillin wasn't invented until 1944. Before this, there weren't any antibiotics. Research how this has changed modern medicine and how it works in the body. What are the benefits? What are the risks?