

Did you enjoy this kit? We'd love to see how you used it! Tag us on social media and let us know! #APLstem

Twitter: @anchlibrary

Facebook & Instagram: @anchoragelibrary

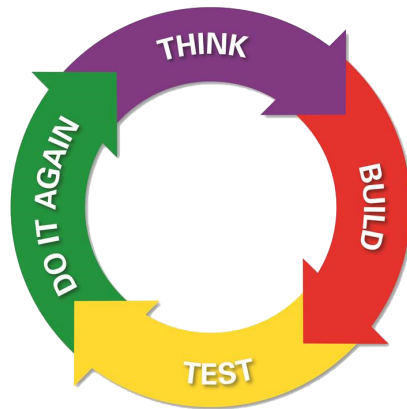


## Engineering Design Process

### Think, Build, Test, Do It Again

That's the process engineers use when they tackle a problem. Engineers don't have official rules telling them to follow this set of steps. But, over time they've learned that **they get the best results this way**.

They **think** and brainstorm about a problem and factors they have to consider to solve it. They come up with an idea and **build** a prototype. They **test** the prototype. And, then they **repeat** the process to improve their results.



### It Takes a Lot of Back and Forth

Engineers often **move back and forth within the loop**, repeating two steps over and over again before moving forward. It's a key to engineering success. Sometimes, engineers will focus on one specific step, and when complete, pass the project off to another team with a different skill set.

### Engineers are creative problem solvers!

This kit generously sponsored by:



This material is based upon work supported by the National Science Foundation under Grant Number DRL-1657593. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

## J-KIT STEM

# Simple Machines: *Levers and Pulleys*

Scientific Concept: Physics, simple machines

Recommended Ages: 8 to 12

Scientific Practice: Engineering

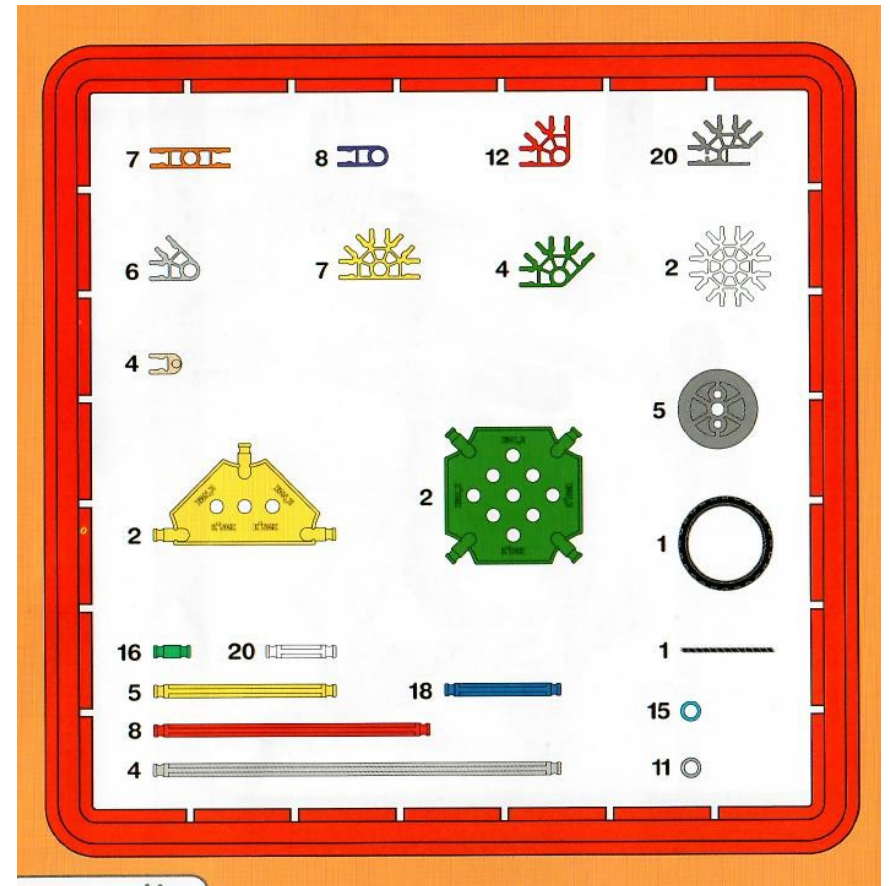
## What to know about this kit:

With this kit you can build 8 models as a jumping off point to learn about simple machines using levers and pulleys. You can modify those models to see if you can make them more (or less) efficient. As you follow the lessons in the teachers guide, you can examine several variables that affect the models' movements. These models focus on physics concepts and simple machine concepts such as force, motion, leverage, work, energy, and efficiency.

Please note: This kit must be returned to a **staff member at an Anchorage Public Library** location.



Kit Contents & Replacement Costs		
Item Type	Description	Cost
Object	K'Nex Education Introduction to Simple Machines: Levers and Pulleys (178 pieces)	\$40
Leaflet	K'Nex Education Teacher's Guide	n/a
Leaflet	K'Nex Education Building Instructions	n/a
Book	<i>Explore Simple Machines: With 25 Great Projects</i>	\$13
Book	<i>Levers</i>	\$7
Book	<i>Pulleys</i>	\$7
Packaging & Processing Fee:		\$25
Total Kit Replacement Cost:		\$92



Please verify all parts are present before returning.