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## Simple Machines:

### Gears

Scientific Concept: Physics, simple machines

Recommended Ages: 8 to 12

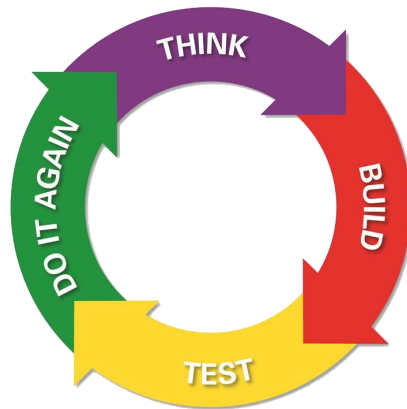
Scientific Practice: Engineering

### 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:



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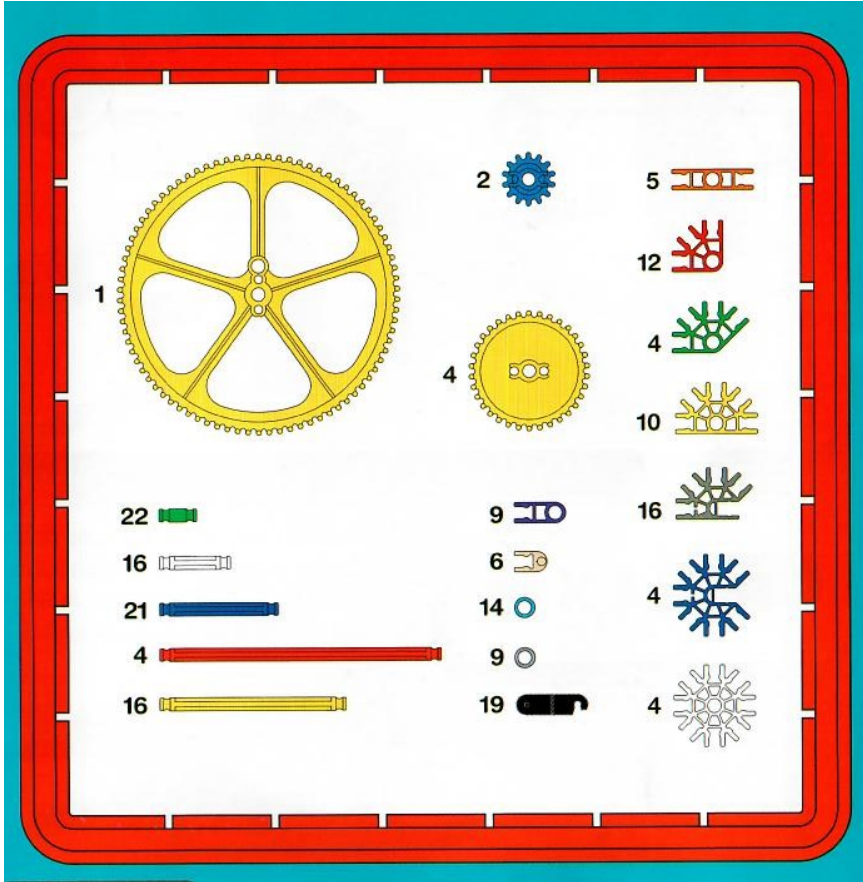
### What to know about this kit:

With this kit you can build 7 models as a jumping off point to learn about simple machines using gears. 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: Gears (198 pieces)	\$40
Leaflet	K'Nex Education Teacher's Guide	n/a
Leaflet	K'Nex Education Building Instructions	n/a
Book	<i>DK Findout! Engineering</i>	\$11
Book	<i>Junk Drawer Engineering</i>	\$15
Packaging & Processing Fee:		\$25
<b>Total Kit Replacement Cost:</b>		<b>\$91</b>



Please verify all parts are present before returning.