

### **Engineering Design Process**

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

That's the process engineers use when they tackle a problem.

AGAIN

E

00

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.



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.

THINK

TEST

BUILD

# Marble Run

Scientific Concept:	Physics, Gravity
Recommended Ages:	4 to 8
Scientific Practice:	Engineering

## What to know about this kit:

With this kit you can build and rebuild marble runs in endless combinations. Learn about cause and effect by trying different pieces to see how it changes the marble's path.

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



Kit Contents & Replacement Costs		
Item Type	Description	Cost
Object	Wooden Marble Run Set (44 pieces)	\$50
Book	Thrills and Chills of Amusement Parks	\$17
Book	Roller Coasters	\$17
Packaging & Processing Fee:		\$25
Total Kit Replacement Cost:		\$109

