**Curiosity Guide #708**

**Gears**

Accompanies Curious Crew, Season 7, Episode 8 (#708)

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**Curious Contraption**

Investigation #2

**Description**

Use gears and a motor to make something that moves and challenges your friend!

**Materials**

- Assorted gears
- Wooden dowels
- Hole blocks for dowels
- Motor
- Tape
- Battery
- Cardboard
- Scissors
- A friend

**Procedure**

1) Use a variety of materials to make an object that can rotate when driven by a series of gears that are controlled by a small motor.
2) Cover most of the gear assembly with cardboard, with one or two rotating parts sticking out through the top.
3) Show the contraption to a friend.
4) Can your friend reverse-engineer the contraption to explain how the thing works?
My Results

Explanation
The contraption is a combination of spur gears that mesh and rotate numerous parts. The driver uses a spur gear that slowly rotates the driven wheel. Ending the gear train with a smaller spur gear allows the rotating contraption to spin more quickly than the driver gear.

Did you know? Gears are used in many mechanical devices. Gears can provide different kinds of advantages by transmitting the power from one part of a machine to another. Although gears come in all sizes, they usually consist of a wheel with different numbers of teeth that mesh with the teeth of another gear. When one wheel turns, the meshed teeth cause the second wheel to turn, too. You can find gears in many things like oscillating fans, manual eggbeaters, cars, pumps, windup watches, and wind turbines. Amazing!

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