Gears! Gears! Gears! Building Set Activity Sheet

BUILDING BASICS

Build a Base

Attach bases together by sliding side pegs into slots. There are many different ways to arrange the bases; rows, pyramids, zigzags and more.

Add Gears

Attach gears to the base by lining up the center hole of the gear with a peg on the base and popping it on. When on correctly, gears should easily spin both ways with a tiny push. Attach more gears, making sure the “teeth” of all the gears mesh.

Get Things Moving

Turn the crank to start everything moving. The cranks works best if placed on a gear attach to the base (not a vertical structure).

Going Up

Place a square pillar into a square hole on the base to begin vertical structures. Then, add a six-way axle and attach gears to the axle making sure the “teeth” mesh at a right angle with the gear on the base. The gear on the axle should spin when you turn the gear on the base.

Up and Over

Continue to build up by adding a square pillar to the top of the six-way axle and attaching another six-way axle. Add a square pillar to the side of a six-way axle to build horizontally. Use the purple pillar extenders to connect two square pillars.

EX-GEAR-IMENTS!

How Does it Spin?

Place two gears next to each other on a base. Spin the gears and watch them move. Are the gears spinning in the same direction?

End to End

Connect the bases so that they are in a straight line. Make a long row of connecting gears going from one end of the bases to the other. Spin the first gear at one end very slowly. Does the last gear start spinning right away?

Spinning Speed

Connect a flat gear to a base. Give it a quick spin with your finger and see how fast it spins. Connect another gear next to the first one and spin again. Does it spin faster or slower than the first time?
FOLLOW THE PICTURES ON THE BACK OF THE GEARS! BOX TO CREATE:

Crawling Caterpillar

You need: 23 gears, 13 square pillars, 12 six-way axles and 2 pillar extenders. Repeat this pattern to make the crawling caterpillar as long as you like.

ZigZag Gears

You need: 7 bases, 40 gears, 16 pillars, 2 pillar extenders and 12 six-way axles. This is the basic building concept for creating Zigzag gears. Use this configuration for connecting the vertical structures.
Souped-Up Race Car

You need: 20 gears, 17 square pillars, 6 pillar extenders and 12 six-way axles. Build two of the side structures shown here. Use a square pillar to connect the two sides at the bottom, center six-way axle. (The center six-way axle does not have any gears on it).