

Try This

Smooth running

This experiment shows you why a bunch of tiny balls can make turning things work better.

You'll need

- Unopened can of soup or vegetables
- About 12 marbles
- Plastic or metal jar lid that fits over end of can
- Pencil
- Modeling clay

- 1 Make two balls of clay that are the same size and stick one to each end of pencil

Stick pencil to center of jar lid with a piece of clay

- 3 Remove lid from can, put marbles on top of can, then replace lid

- 2 Put jar lid on can and try to spin it

Does it spin easily?

Does the lid spin more easily this way?



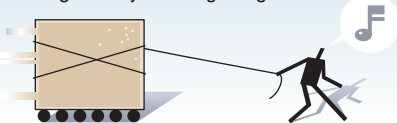
Source: Science Museum of Minnesota
Graphic: Paul Trap

What happened?

Without the marbles, spinning the jar lid is difficult, like dragging a heavy object along the ground



With the marbles, spinning the lid is like rolling the object along the ground



The marbles greatly reduce the **friction** between the lid and the can

This arrangement is called a “ball bearing”

Bicycles and cars have ball bearings at the centers of their wheels to make them roll more easily

