Loop-the-loop

What to do: Tie the rope securely to the handle of the pail. Put the ball into the pail. Choose a spot where there is no risk of hitting anything—outdoors if possible. Hold the pail by the rope and whirl the pail in circles in the air as fast as you can.

What happens: The ball remains in the pail even when it turns upside down.

Why: Centrifugal force—the force created by that whirling motion—equals the force of gravity and keeps the ball from falling out of the pail. It pulls the object against the sides of the pail rather than down and out of it. When you get really good at this, you may want to try it with a pail of water—outdoors!

YOU NEED

• Rope, 24 inches long
• Pail
• Soft rubber ball