Roller

Purpose
To determine how different surfaces affect friction.

Materials
2 books
24-inch (60-cm) string
Rubber band
Ruler
10 round marking pens

Procedure
• Stack the books on a table.
• Tie the string around the bottom book.
• Attach the string to the rubber band.
• Move the stack of books by pulling on the rubber band.
• Measure how far the rubber band stretches.
• Place the 10 marking pens under the stack of books.
• Move the books by pulling on the rubber band.
• Observe how far the rubber band stretches.

Results
The rubber band stretches more when the bottom book sits flat against the table than when it is placed on the pens.

Why? The flat surface of the book slides across the table and the round pens roll across the table.
Things that roll cause less friction than things that slide. Thus, there is less friction between the pens and the table than between the book and the table.