

1K20.75 Friction Books

To show the strength of the frictional force between the pages of two books.

DESCRIPTION The pages of two very large books have been layered on top of each other such that every other page belongs to the same book. Strong ropes are attached to the spines of the books. Multiple students can pull on the ropes as hard as they can, but because of the massive area of contact between the pages, the friction between the two books is strong enough to support the weight of a car.

SUGGESTED TECHNIQUE

1. Get two student volunteers. Have each student grab one of the ropes attached to the spines of the books.
2. Instruct each student to pull as hard as they can on the rope to try and separate the two books.
3. Option: get a few more student volunteers and show that even four or six students are not strong enough to separate the books.

TECHNICAL DETAILS

LOCATION OF APPARATUS

EQUIPMENT	LOCATION
Friction Books	Mechanics D

LOCATION OF COMMON ACCESSORIES

SETUP INSTRUCTIONS

Setup Time ~15 min

1. Provide the friction books.
2. A video of two phone books being separated by military grade tanks can be paired with this demonstration: https://www.youtube.com/watch?v=hOt-D_ee-JE

ADDITIONAL RESOURCES