Name: _____ Date: _____

HOMESCHOOL SCIENCE EXPERIMENT

Observing how different surfaces affect friction

QUESTION:
How does the type of surface affect friction?

HYPOTHESIS:
I think _____
will have the most friction because _____.

MATERIALS

- Book (or other object with a flat bottom)
- Spring scale (or kitchen scale with string)
- String or yarn
- Tape
- Several different surfaces (see ideas to the right)
- Notebook and pencil

SURFACE IDEAS (use flat areas)

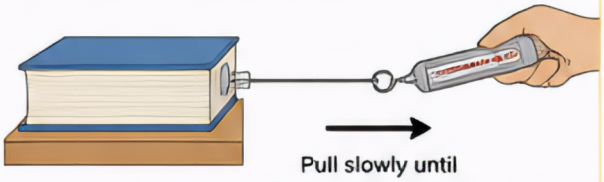

Wood (floor or table)


Tile


Carpet


Cardboard


Paper


Pull slowly until the book just moves.

PROCEDURE

1. Tie the string to the book. Tape the other end of the string to the spring scale.
2. Place the book on the first surface.
3. Pull the scale slowly and steadlly until the book just starts to move. Record the force shown on the scale (in newtons).
4. Repeat steps 2–3 two more times on the same surface. Record all three trials.
5. Find the average of the three trials.
6. Repeat steps 2–5 for each different surface.

RESULTS

Surface	Force (newtons)			Average Force (N)	Rank (1 = most friction)
	Trial 1	Trial 2	Trial 3		

REFLECTION

1. Which surface had the most friction? _____
2. Which surface had the least friction? _____
3. How did the surface change the amount of force needed to move the book? _____
4. What surprised you about this experiment? _____
5. Give one real-life example of how friction on different surfaces can be helpful or not helpful. _____

THINK FURTHER: How would the results change if the book was heavier or lighter? _____