



TESTING THE TENSILE STRENGTH OF DIFFERENT TYPES OF TAPE

Tensile strength is the maximum amount of pulling force a material can withstand before it breaks.



OBJECTIVE

To compare the tensile strength of different types of tape.



MATERIALS

- Different types of tape (at least 3)
 - Spring scale (force gauge) in newtons (N)
 - Ruler or measuring tape
 - Scissors
 - Pen or pencil
 - Notebook or data sheet (this page)
 - Books or a sturdy table edge
 - String or small carabiner (optional)
- (See setup diagram to the right.)



PROCEDURE

1. Cut a strip of tape that is 20.0 cm long. Keep the width the same for all tests.
2. Fold the tape in half (sticky sides out) so that 2.5 cm overlap. Press the ends together firmly to make a loop.
3. Place a book or the edge of a table on each side of the loop to hold it in place. The loop should hang down in the middle.
4. Attach the hook of the spring scale to the bottom of the tape loop.
5. Pull down slowly and steadily. Record the greatest force (in newtons) just before the tape breaks.
6. Repeat 2 more times for that tape. Record all trials.
7. Repeat the steps above for each type of tape.



SAFETY

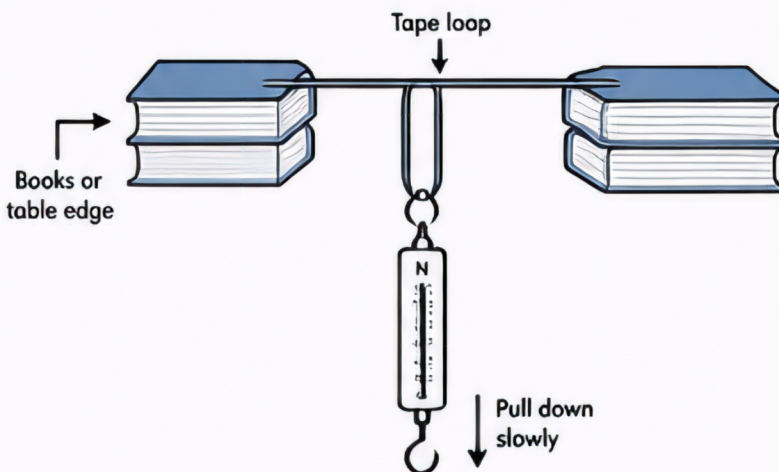
- Pull slowly to avoid the tape breaking suddenly.
- Keep hands and face clear of the tape path.
- Do not exceed the limit of your spring scale.



CONCLUSION

Write 1–2 sentences summarizing what you learned from this experiment.

SETUP DIAGRAM



DATA TABLE

Type of Tape	Trial 1 (N)	Trial 2 (N)	Trial 3 (N)	Average Tensile Strength (N)

N = newtons (unit of force)

ANALYSIS & QUESTIONS

1. Which type of tape had the highest average tensile strength? _____
2. Which type of tape had the lowest average tensile strength? _____
3. What factors might affect the strength of tape? _____

4. How could you improve this experiment? _____
