



TESTING WHICH NATURAL FIBERS ARE STRONGEST WHEN WET

QUESTION: Which natural fiber is the strongest when wet?



BACKGROUND

Natural fibers come from plants and animals. When they get wet, they can change. Some stay strong, and some get weaker. In this experiment, we will test different natural fibers to find out which one is the strongest when wet.



HYPOTHESIS

I think _____
(name a fiber) will be the strongest
when wet because _____



MATERIALS

- Natural fibers to test (examples: cotton, hemp, jute, sisal, wool, flax)
- Scissors
- Ruler
- Bowl or container
- Water
- Weights (coins or washers work well)
- Tape
- Two sturdy chairs or other supports
- String or small clips



PROCEDURE

1. Cut each fiber into pieces that are 20 cm (8 inches) long.
2. Measure and record the exact length of each piece.
3. Tie or clip each end of the fiber to the supports so the fiber hangs like a bridge.
4. Place a small cup or container in the middle to hold weights.
5. Add weights one at a time to the cup until the fiber breaks. Record the total weight it held.
6. Repeat Step 5 two more times for each dry fiber. Record all three results.
7. Soak each fiber in water for 30 minutes.
8. Repeat Steps 3–6 with the wet fibers.

Keep all other conditions the same for a fair test!



DATA TABLE

Fiber (Type)	Dry Test – Weight Held (grams)				Wet Test – Weight Held (grams)				Percent of Dry Strength (Wet Avg ÷ Dry Avg × 100) %
	Trial 1	Trial 2	Trial 3	Average (grams)	Trial 1	Trial 2	Trial 3	Average (grams)	
Cotton									
Hemp									
Jute									
Sisal									
Wool									
Flax									

**Use grams for all weights. To find percent: (Wet Average ÷ Dry Average) × 100*



ANALYZE

1. Which fiber was the strongest when wet?

2. Which fiber lost the most strength when wet?

3. What did you notice about how the fibers changed after being in water?



CONCLUSION

What did you learn from this experiment?

If you did this experiment again, what would you do differently?
