

16. Line-Up

Purpose To demonstrate that some minerals have a definite cleavage line.

Materials paper towels

Procedure

- Try to rip a single sheet of a paper towel from top to bottom.
- Turn another sheet of paper towel and try to tear it from side to side.

Results The paper will tear easily in one direction but not in the other.

Why? Paper towels are made on a wire screen, creating a straight line in one direction. Pulling on the paper attacks the weakest point. The parallel lines on the paper made by the wire screen are thinner than the rest of the paper, and thus the paper rips easily down one of these lines. Jagged and irregular tears result when the paper is pulled in the opposite direction. This is like cutting minerals, such as diamonds, along cleavage lines. The mineral splits smoothly and easily *along* the lines where the molecules line up, but it can smash into irregular pieces if hit *across* the cleavage line.

