

# Testing adhesive strength



# How strong is my glue?

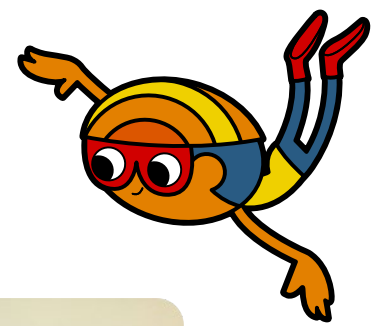
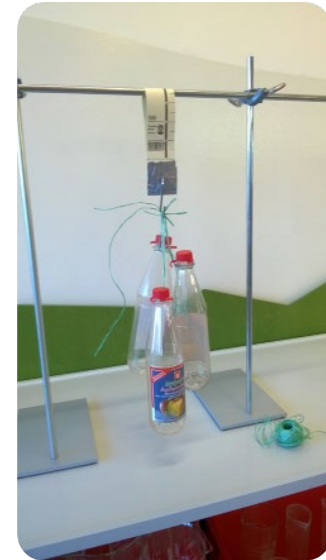
Build your own test device

## Research question

There are quite many different types of adhesives. They are all supposed to stick very well. But how strong are they really? **How can you test the adhesive strength of an adhesive?**

## Materials:

- Strong paper (e.g. folder dividers) for test strips
- Adhesive
- Duct tape for reinforcement
- Hook
- Cord
- Empty PET bottles as weights
- Building materials for frame (or broomstick, 2 chairs, etc.)
- Scissors



# How to do it

## Step by step



### Cut the strips

1. Take a folder divider and draw a 5 cm wide strip with a ruler.
2. Cut out the strip.



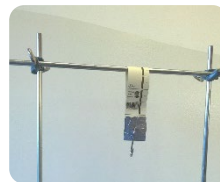
### Glue the loop

1. Make a loop with the strip and glue the bottom end with your glue, leaving a length of approx. 6 cm hanging down.



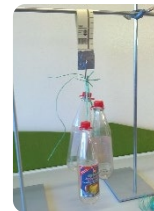
### Reinforce the loop

1. Reinforce the bottom end with duct tape by gluing two layers around the bottom.
2. Carefully poke a hole through the bottom end. The hole should be at least 2-3 cm from the bottom edge.



### Set-up

1. Put a hook through the hole and hang the loop on a round rod. This could also be a broomstick, for example.



### Test

1. Hang weights on the hook until the adhesive glue connection joint breaks.
- How many bottles can you hang from them? And how much do they weigh?



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## Context

The experiment forms the conclusion of a series of lessons on the subject of gluing. Children are to make their own glue and then test how strong it is. To do this, they are to build their own test apparatus from materials provided.

## Test principle

In an adhesive test, a test material (e.g. paper strip) is first bonded under controlled conditions. The bonded material is then pulled apart again by machines, measuring the force required to do so. This can be experimentally simulated with simple means by hanging weights on a bonded joint until the bond tears.

