

**Student experiment  
(5th - 10th grade)**

## **Color separation – chromatography**

🕒 **Time:** max. 20 min.

### **Instruments:**

- 1 coffee filter
- 1 glass
- scissors
- felt markers (different colors)

### **Chemicals:**

- vinegar water

### **Experiment:**

- Cut a strip from the coffee filter (circa 4 x 10 cm) with the scissors. Color four different dots with the markers about 3 cm from one end of the filter strip.
- Fill the glass half full of vinegar water and hang the strip so that the end is in the liquid. Be very careful that the colored dots do not contact the liquid directly.

### **Observations:**

The form and color of the dots will slowly change. For example, a red dot will change the least and a yellow spot the most.

### **Results:**

The coffee filter slowly pulls the vinegar water from the glass upwards. As the liquids passes through the ink spots, the color mixtures in the ink are separated into their individual, basic colors.

The colors yellow, blue and red remain unchanged because they are the three primary colors. Mixed colors like green, however, split into their primary color components, which move with differing levels of ease through the paper due to their varying solubilities in vinegar water.

Chemistry makes good use of this effect in order to separate substances into their parts (chromatography = "color writing").