

Crafts with translational symmetry

In these short experiments, you can follow exactly how translationally symmetrical shapes are created by sliding patterns.

Make a frieze pattern with a potato stamp

A stamp creates patterns that can be repeated very easily. For this reason, they are good for making a frieze pattern.

You need:

- A raw potato, not too small
- A small knife for cutting the potato
- A felt-tipped pen
- Paint, ideally finger paint or fabric paint
- If available, Christmas cookie cutters
- Paper

Instructions:

- Cut the potato in half.
- Draw the outline or the pattern on the cut surface with the felt-tipped pen.
Or: Press a cookie cutter into the potato to transfer the outline.
- Cut away the potato along this outline: First, cut along the lines of the pattern on the cut surface, and then cut into the potato from the side so that the pattern protrudes a half centimeter (see photo).
Note: The part that you want to print must remain attached. The part that you don't want to print is cut away.



Attention: If you want to print a letter, you must draw the mirror image of the letter's outlines.

- Then place the potatoes on crepe paper with the stamping surface facedown for a few minutes to drain the moisture.
- Now you can apply paint to the stamping surface and stamp. Make sure you position the stamp precisely and always with equal spacing.



The frieze pattern that you make with the potato stamp could look something like this.

Tracing and coloring

You need:

- Transparent (see-through or tracing) paper
- Pencil, colored pencils

Instructions:

- Try to distinguish the pattern that repeats in this frieze pattern.
- Draw colored lines at the places where the pattern starts over again.
Tip: There are two patterns.



- Trace the pattern between two of the colored lines onto transparent paper. (You may simplify the pattern somewhat when you trace it.)
- Place a second piece of transparent paper on top of the copied pattern and trace it.
- Slide the top piece of paper and trace the pattern again a few times so that you end up with a frieze pattern.