



# MIRROR WRITINGS 1. NUMBER DIAL

phaeno

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**HOLD** the transparent number dial parallel to the mirror, first facing and then with its back to the mirror.

How do the figures appear on the dial and in the mirror?

**LAY** the dial flat on the table in front of the mirror.

What's happening now?

A flat mirror (plane mirror) changes neither the lateral nor the vertical order. We shouldn't say the reflection is "left-to-right", because a plane mirror doesn't actually change the sideways order – it simply shows things back to front.

If the dial stands at right angles to a plane mirror (b and c), the same inversion can have different effects. When standing upright the 3 and the 9, the 1 and the 11 etc. are swapped in the reflection. In other words right and left have changed places. With the dial lying flat (c), the mirror swaps 6 with 12, 11 with 7 etc. In other words up and down have changed places.

## WORD SHEETS



**LOOK** at the different sets of words directly, and then look at them in the mirror.

**LAY** the word sheets down flat on the table or hold them up so that you can read the text in the mirror.

Some letters – and even whole words – do not change in the reflection. What is so special about such letters? Other letters appear completely alienated.

When the word sheets lie flat on the table in front of the mirror, the reflection is upside down.

If you hold up one of the mirror-writing sheets to the mirror (with the writing facing the mirror), you can read the text straight away. Now look at the back of the sheet, and you can read the writing just as well through the thin paper. With normal writing the opposite is true – when you look through the back of the paper you see mirror-writing.

These experiments show that mirrors don't exchange left and right but front and back. The decisive factor for reading words in the mirror is the symmetry of the letters.