1 Intro

2 Geometrie

[Intro]

[Zyklische Gruppe]

Let's now focus our attention on the simplest class of simmetries: those generated only by a rotation. We'll describe the symmetries with a group G, and we'll write that it is generated by a rotation r with these angle brackets.

Take this shape as an example. By applying the rotation <u>action</u> 5 times, it seems as if we had not done anything, furthermore, if we <u>act</u> with higher "powers" r, they will have the same effect as one of the previous action. Thus the group only contain the identity and the powers of r up to 4.

In general, groups with this structure are known as the "Cyclic Groups" of order n, where the action r can be applied $n-1$ times before wrapping around.

[Diedergruppe]

Okay that was not difficult, now let's spice this up a bit.

[Symmetrische Gruppe]

[Alternierende Gruppe]

3 Algebra

4 Krystalle