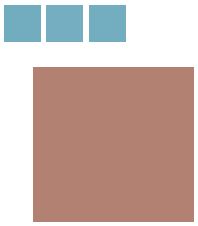
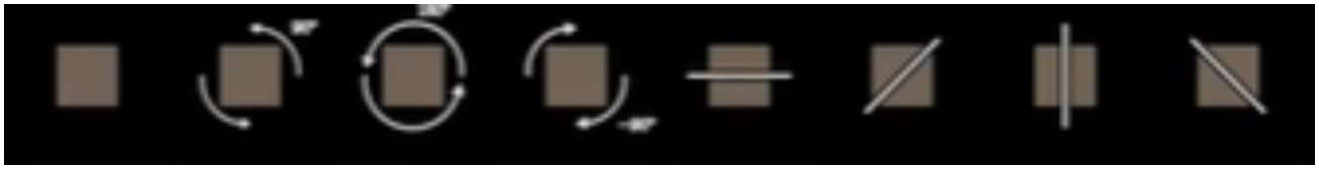
On the Subject of Symmetries Of A Square



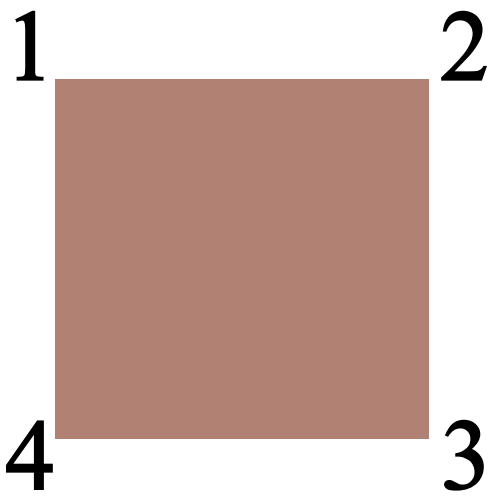
Who lives in a module under the sea?

A square has eight symmetries – actions that leave the shape of the square unchanged, including doing nothing.

The symmetries are notated on the module as follows; an arrow outisde the square represents a roation, and a line through the square represents a reflection.



To identify the different symmetries, the corners of the square are numbered like so.



To solve the module, press the four corners of the square in order of their numbers after the three symmetries on the module have been applied.

Useful note: The composition of any number of symmetries is always one of the eight symmetries above. A set of symmetries like this is a type of mathematical object called a group. Practice the module to get a feel for the underlying structure behind it. Also be sure to check out 3bluelbrown's videos on the topic, which make for interesting viewing if you want to learn more.