**Videos and other resources about groups and their applications**

* [du Sautoy group theory TED talk](https://www.ted.com/talks/marcus_du_sautoy_symmetry_reality_s_riddle)

du Sautoy introduces key ideas behind group theory using the group S3, the symmetry group of an equilateral triangle. He also provides some interesting stories about the historical deveopment of group theory.

* [Playing a Rubik's cube](https://www.youtube.com/watch?v=FW2Hvs5WaRY)

After working on this activity, you will probably not be surprised that group theory is central to the workings of a Rubik's cube. Can you imagine how many members this has group has?

* [A book on group theory and the Rubik's cube](http://www.amazon.com/Adventures-Group-Theory-Merlins-Mathematical/dp/0801890136)
* [The Monster group (including Conway)](https://www.youtube.com/watch?v=jsSeoGpiWsw)

Mathematician John Conway describes the "Monster Group," a massive group that is dizzying in its complexity and intricacy and may have important things to tell us about the deep inner workings of the universe.

* [The Periodic Table of Finite Simple Groups](https://irandrus.files.wordpress.com/2012/06/periodic-table-of-groups.pdf)

A many years of work, mathematicians managed to identify and categorize all groups of a certain type – finite and simple. (Simple groups are sort of the "prime numbers" of groups. They cannot be decomposed into smaller groups. This table shows all of them in an organized way that will remind you of the periodic table of elements.

* [Groups of symmetries in molecules (Wikipedia)](https://en.wikipedia.org/wiki/Molecular_symmetry)

Symmetries in the shapes of molecules play a key role in the properties of everyday substances. Group theory helps us understand these symmetries and properties.