

Good practices SCIEN_705BC_EN

Author's name and institution: **Branko Anđić, Zsolt Lavicza, Eva Ulbrich**

School of Education, Department of STEM Education, Johannes Kepler University, Linz, Austria

Description of the problem / exercise: **Modeling molecules with Poly-Universe**

Task could be realized within the following steps:

Teachers provide information for students about molecules they learn about, for example oxygen molecules, water molecules, sulphur dioxide, nitrate and so on. This information could be in the form of teachers' presentations, text, films or a combination of all of this.

Students analyze information and gain knowledge about these molecules. After that, using Poly-Universe and plastic straws, students create the model of molecules about which they learned.

Afterwards, students present their models, explain them, discuss the models and provide useful feedback to each other.

Examples of models which could be created are presented:

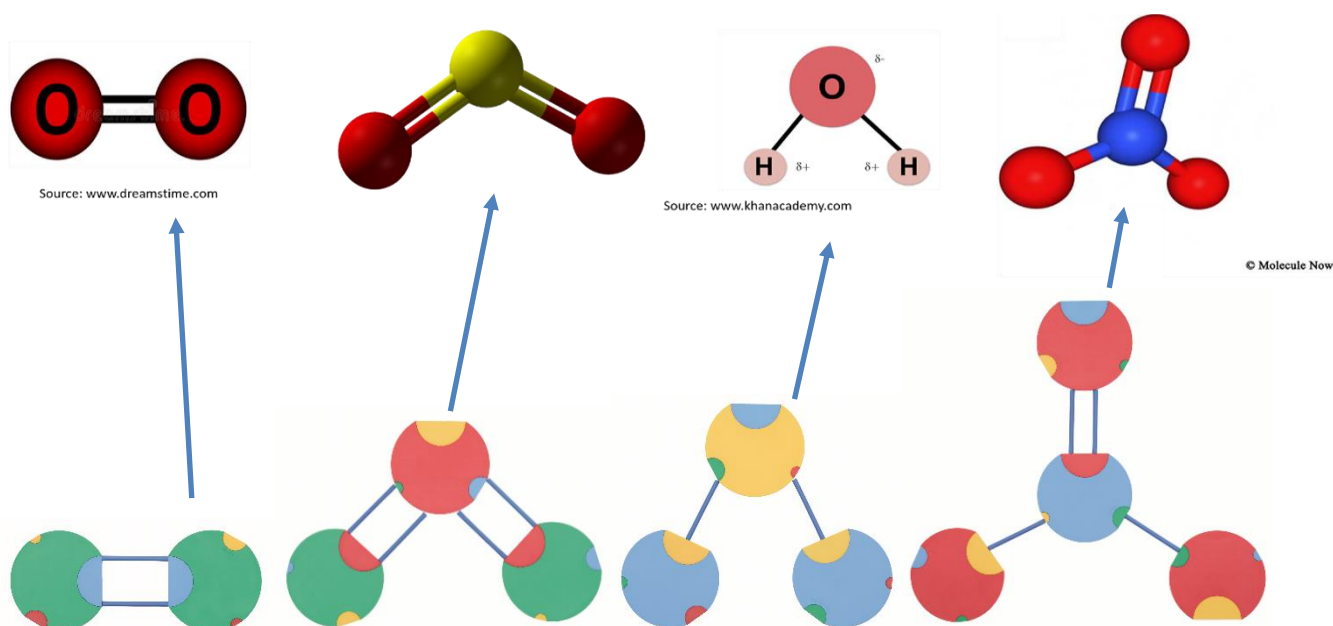


Figure: Examples of molecules model created from Poly-Universe.

- *Why this exercise is good:* This activity encourages students' creativity, knowledge implementation, increases the presence of gaming in the learning process, and is interdisciplinary in learning and communication between the students.
- *Level of teacher training:* primary and secondary school
- *School subject(s):* Chemistry, math, art

- *Comments:* This activity easily could be adapted to the students with learning difficulties. For example, teachers can prepare a 3D model of the molecule for these students, and ask them to create the same from the Poly-University. For gifted students, teachers can adapt the task by setting them the rules for Poly-University part connections.