

Chemistry

Stereoisomery Lesson

High
School

Grade
9-12

Sweden

Author Jonas Bäckelin

School Mikael Elias Gymnasium, Stockholm, Sweden

Lesson Overview

Chemistry lesson about stereoisomers. Aim for the students to interact with a learning simulation, instead of just the pictures in the book. By seeing molecules in 3D, they will have more understanding of cis-trans isomerism and chirality centers.

Lesson objectives

Use a real world example linked to the theory of isomerism (i.e. medication industry) let the students elaborate on consequences.

Models / channels used:

Chemistry

e.g. Methane, Cis/Trans Isomerism

Further resources, apps or technology needed:

Computer, Internet, textbook, projector or shared link to OfficeMix, mini-whiteboards or OneNote Class Notebook.

21st century skills learnt:

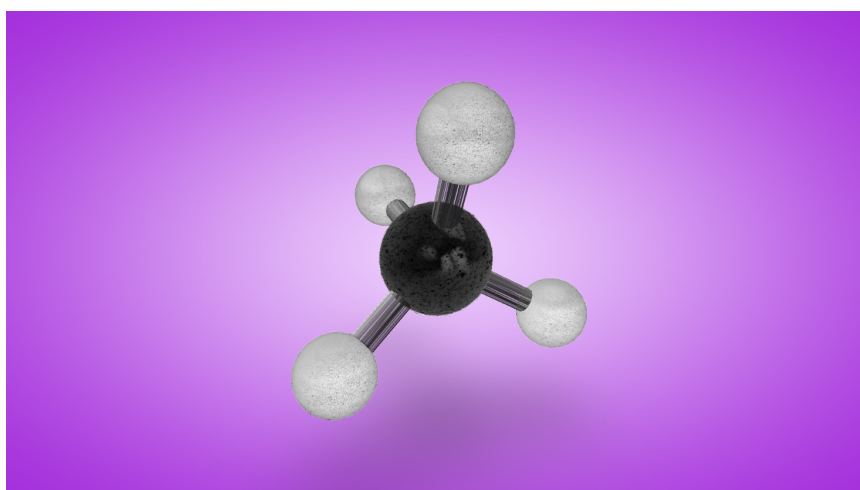
Visual communication, using 3D animation

Duration:

100 mins

Lesson Outline:

- 15 mins
Distribute the link to the OfficeMix presentation.
Summary of isomerism (textbook) on the whiteboard.
- 50 mins
Students start creating their own examples of structural isomers using the Collaboration Space in the OneNote Class Notebook (you can allocate them different tasks and then let them show their examples to the class).
- 20 min
On the active board or projector show the animated 3D module of **methane** in LifeLiQe and explain that a carbon with four different substituents are not superimposable on a mirror image.



Then show the 3D model of **chirality centers**.

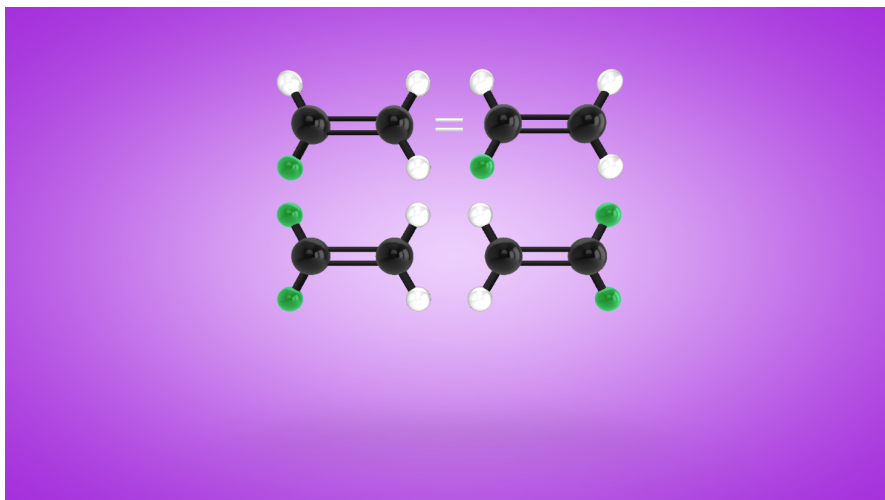
Let the students **view the lesson in Khan Academy**:

<http://bit.ly/28QB3nf>

(The link will not open in this document. Please, type it in your browser.)

Then ask them to answer the three poll questions and finally show the result on the projector and discuss the results (if there is no projector the teacher will inform about the results and lead the discussion).

Repeat the same procedure for the model of **Cis-trans isomerism**.



Use this lesson in Khan Academy:

<http://bit.ly/28N5VFR>

(The link will not open in this document. Please, type it in your browser.)

- 15min
Ending the lesson, **students write their exit note** in their Student Notebooks in OneNote summarizing what they learned and questions for next lesson