Atoms And Molecules

Methodological Steps

Create the teaching/learning unit in your virtual learning environment (e.g. Google Classroom) on the history of the atom theory.

Start with some icebreaker activities, like watching a short video, to attract the attention of the students and to motivate learners towards the specific topic; the aim is to make them curious about it, hence take some time to choose the right one from YouTube or TedED (or other sources here).

Assign to the students a text document for individual reading or a podcast, helpful for SEN students, through an online platform such as Spreaker or Spotify.

Help students to simply recap, even orally, the content. If they are used to it, you may ask them to create a mind map with a tool like iMindMap, or ask them to create a timeline about the history of the discoveries and evolution of the atom theory using an interactive picture online tool like Thinglink or Genially, that permit to create multimedia timelines.

Ask them to write down 5 questions based on the content you have assigned; the questions are to be used in a Kahoot as a formative assessment to check the understanding of the topic. Play the Kahoot in the class group and help the students to revise the content.

Practical activity: ask the students to use on online simulator for chemistry like Phet simulations. Show it to the students (10 minutes) and then ask them to use it by themselves.

Prepare a Padlet by asking for comments from the students around the experiment held in the simulator. Guide students in a self-assessment session to check if they need further materials or revision.

Share with students the evaluation criteria using the Classroom grid.

Use a different tool to prepare a summative test (make sure to offer a variety of items, ranging from T/F, multiple-choice, gap filling, short answers,...), like Socrative for example.

Give feedback to the students.

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Skills Assessment

This activity develops both knowledge and skills, the knowledge is subject specific, but the skills are cross-curricular, especially the digital ones.

There is a good variety of activities assessing the flow of the unit, from formative to summative.

The simulator is aimed at giving the students the possibility to have an idea of a practical experience, though in a digital form.

Communication

This activity offers both synchronous communication (online meetings to build up knowledge and skills) where students and teachers collaborate, and asynchronous communication (both for individual work and peer-work) where students have the space to recollect the steps along their teaching/learning path.

Subject(s) : Scientific subjects

Age of students : 15 - 16 years old

Duration : 2- 4 weeks

Learning resources : Digital texts

Tests : Written online test

Tools: Environment, Learning objects, Multimedia editors, Presentations, Podcast, Questions

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filling the gap

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