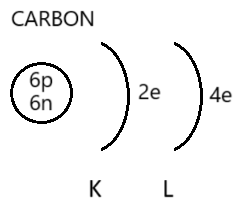
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| --- | --- | --- | --- | --- |
| **CLIL LESSON PLAN** | | | | |
| **Language level:** A2 – B1 | **Time:** 45 min. | | **Subject:** Chemistry | |
| **Group:** First year of high school - basic level | | | | |
| **Topic:** The structure of the atom. | | | | |
| **Previous knowledge/skills:**   * Students can use the periodic table; * Students know selected basic chemical elements. | | | | |
| **Aim(s):**   * Understanding the basic structure of an atom and the role of its components. | | | | |
| **Teaching objectives** | | | | |
| 1. **Content** | | 1. **Cognition** | | |
| * Introduction of basic components of the atom (proton, neutron and electron); * Explanation of terms: atom, atomic number, mass number, isotops; * Learn about Bohr's simple atomic model. | | * Developing skills in analyzing chemical information; * Practicing logical reasoning; * Enhancing spatial imagination when constracting atomic models. | | |
| **Learning outcomes** | | | | |
| 1. **Content** | | 1. **Cognition** | | |
| * Student can present and characterize the components of an atom; * Student understands the difference between atomic and mass number; * Student can get data about components and draw a simple model of an atom. | | * Student can: * read and use atomic information from the periodic table; * calculate the number of neutrons based on given data; * create a simple model of atomic structure. | | |
| **Communication** | | | | |
| 1. **Language of learning (vocabulary and grammar)** | | | | |
| * **Vocabulary:** atom, nucleons, proton, neutron, electron, atomic nucleus, electron's shells, electron's subshells, valence shell, valence electrons, atomic core, mass number, atomic number, isotopes * **Grammar:** --- | | | | |
| 1. **Language for learning:**  * Lecture (presentation); * Discussion; * Making definitions; * Using the application in English. | | 1. **Language through learning:**  * Listening * Speaking | | |
| **Culture/Citizenship** | | | | |
| None | | | | |
| **Materials and resources** | | | | |
| Presentation, worksheet, application (Build an atom) | | | | |
| **Teaching plan** | | | | |
| 1. Welcome, attendance check and introducing a topic. | | | | 2 min. |
| 1. Start the presentation and present teaching objective contents. | | | | 2 min. |
| 1. Brainstorm about meaning and definition of an atom.   Students try to answer the question:  “When you hearing the word „atom”, what is coming to your mind?”  Examples of the answers: atomic bonds, matter, atomic bomb, atomic energy, small particle, spherical, ancient elements, matter, world, everyday objects, life, invisible. | | | | 5 min. |
| 1. Atom definition and presentation of simplify atom structure (present a structure that takes into account shells and subshells). | | | | 2 min. |
| 1. Elementary particles definition containing theirs description. | | | | 5 min. |
| 1. Explain how to get particles data and how to construct the simply atom structure.   In the provided example (magnesium), students attempt to independently obtain information about elementary particles of the selected atoms from the periodic table and then enter the data into a table.    In their notebooks they draw simple models of selected atoms (within period 3 of the periodic table) | | | | 10 min. |
| 1. Brainstorm about definition of the isotope. Students try guess the definition by analyzing a given diagram presenting hydrogen isotopes.   Obraz zawierający tekst, zrzut ekranu, kreskówka, design  Zawartość wygenerowana przez sztuczną inteligencję może być niepoprawna. | | | | 5 min. |
| 1. Practice with the “Build an atom” application using students mobile phones. | | | | 12 min. |
| 1. Lesson summary, assignment of additional task and farewell.   Extra assignment: | | | | 2 min. |
| **Assessment** | | | | |
| * Work during the lesson is assessed, and the activity is entered as a grade in the electronic grade book. * Students throughout the lesson doing themselves a check card. | | | | |

Solutions to table-based tasks:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Element name** | **Element symbol** | **Atomic number** | **Mass number** | **Number of protons** | **Number of neutrons** | **Number of electrons** | **Period number** |
| Carbon | C | 6 | 12 | 6 | 6 | 6 | 2 |
| Hydrogen | H | 1 | 1 | 1 | 0 | 1 | 1 |
| Oxygen | O | 8 | 16 | 8 | 8 | 8 | 2 |
| Lithium | Li | 3 | 7 | 3 | 4 | 3 | 2 |
| Silicon | Si | 14 | 28 | 14 | 14 | 14 | 3 |
| Helium | He | 2 | 4 | 2 | 2 | 2 | 1 |
| Boron | B | 5 | 11 | 5 | 6 | 5 | 2 |

Simple models sketch of selected atoms

 Obraz zawierający tekst, Czcionka, diagram, krąg

Zawartość wygenerowana przez AI może być niepoprawna. Obraz zawierający diagram, szkic, krąg, Czcionka

Zawartość wygenerowana przez AI może być niepoprawna.

