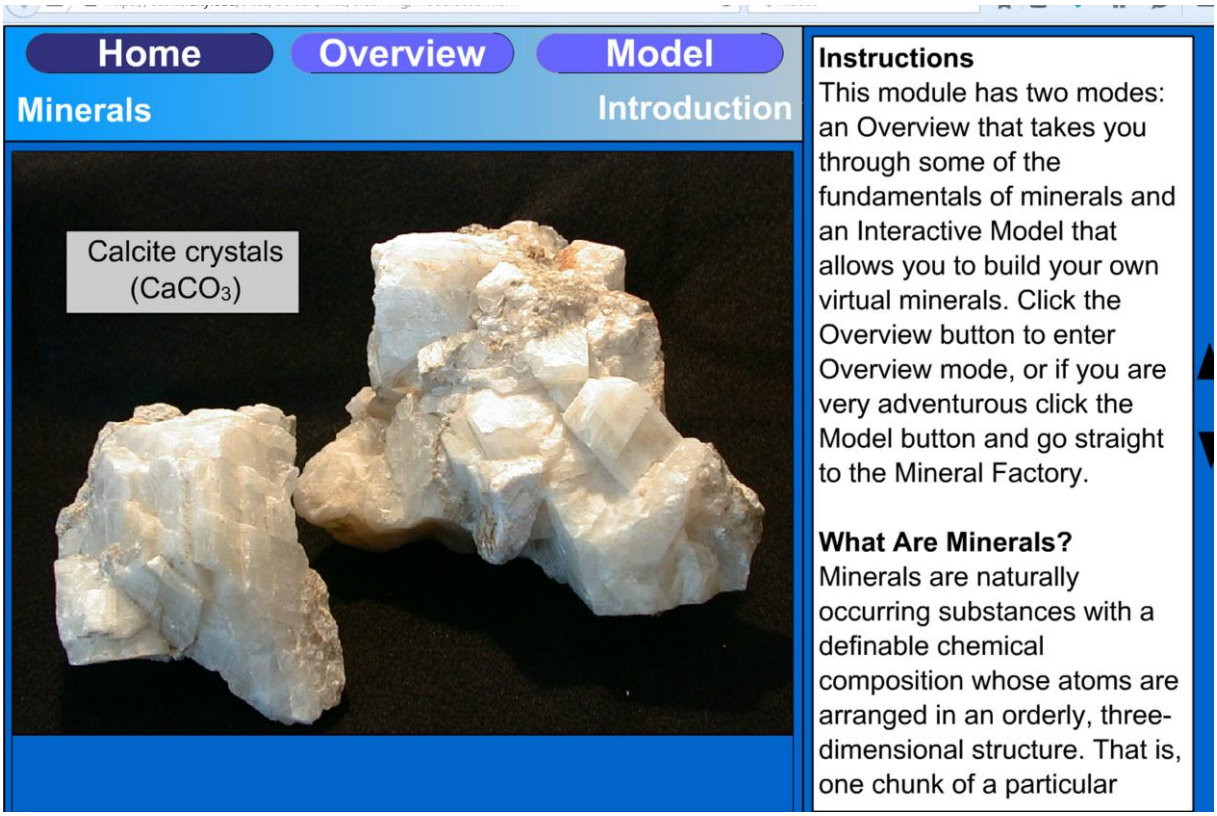
Minerals

Vzdelávací modul Minerals sa skladá z dvoch základných častí: základy mineralógie a interaktívny modul, prostredníctvom ktorého je možné vytvoriť minerál. Minerál alebo nerast je substancia (prvok alebo chemická zlúčenina), ktorá je za normálnych podmienok kryštalická, prirodzene sa vyskytuje v prírode a má rovnorodé chemické zloženie (môže sa však v rámci istých medzí meniť) a rovnorodé fyzikálne vlastnosti v ľubovoľnej časti (rovnorodú štruktúru aj na mikroskopickej úrovni).

Pomocou vzdelávacieho modulu Minerals je možné pochopiť stavbu jednotlivých chemických prvkov, štruktúru chemických zlúčenín i samotnú podstatu vzniku a vlastností jednotlivých minerálov.

Na nasledujúcich printscreenoch sa nachádzajú ukážky zo vzdelávacieho modulu Minerals.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Overview
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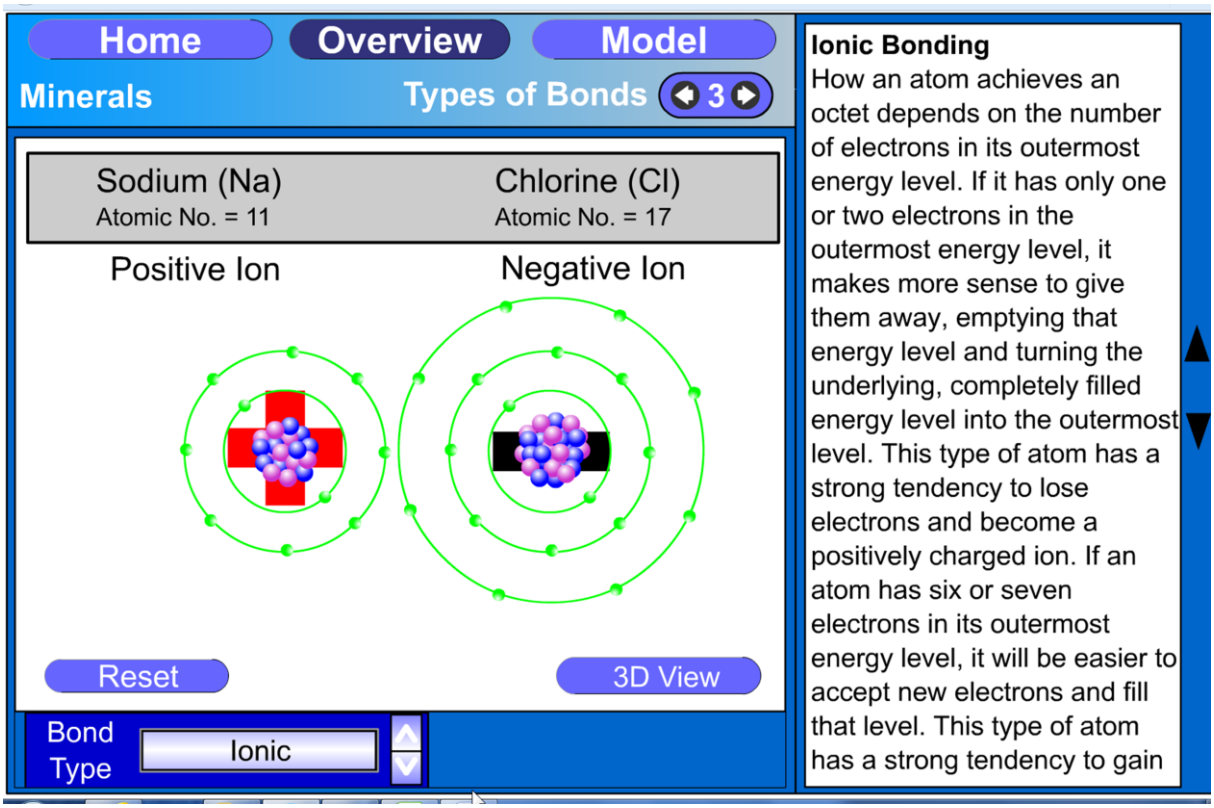
Introduction
Calcite crystals
(CaCO3)
Instructions
This module has two modes: an Overview that takes you through some of the fundamentals of minerals and an Interactive Model that allows you to build your own virtual minerals. Click the Overview button to enter Overview mode, or if you are very adventurous click the Model button and go straight to the Mineral Factory.
What Are Minerals?
Minerals are naturally occurring substances with a definable chemical composition whose atoms are arranged in an orderly, three-dimensional structure. That is, one chunk of a particular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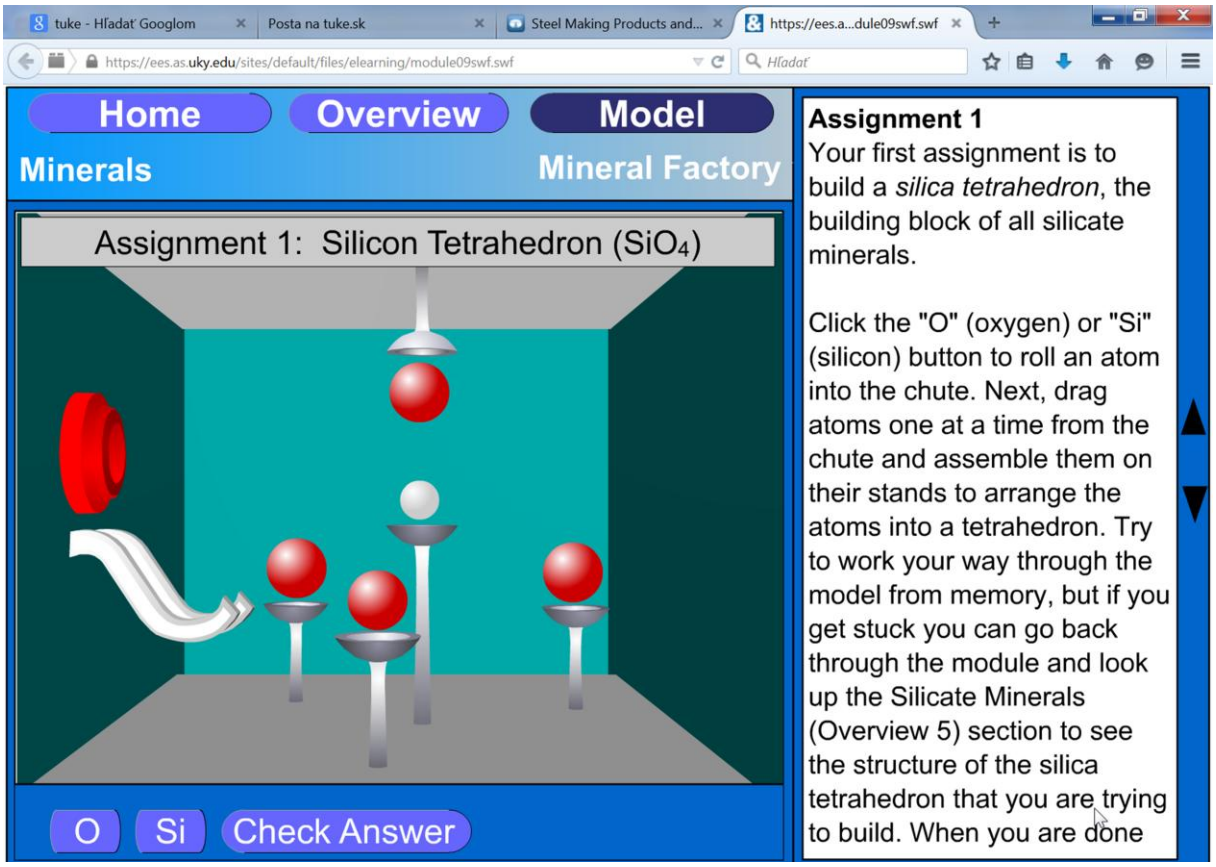
Types of Bonds
3
Sodium (Na)
Atomic No. = 11
Chlorine (Cl)
Atomic No. = 17
Positive Ion
Negative Ion
Reset
3D View
Bond Type
Ionic
Ionic Bonding
How an atom achieves an octet depends on the number of electrons in its outermost energy level. If it has only one or two electrons in the outermost energy level, it makes more sense to give them away, emptying that energy level and turning the underlying, completely filled energy level into the outermost level. This type of atom has a strong tendency to lose electrons and become a positively charged ion. If an atom has six or seven electrons in its outermost energy level, it will be easier to accept new electrons and fill that level. This type of atom has a strong tendency to gain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Hľadať
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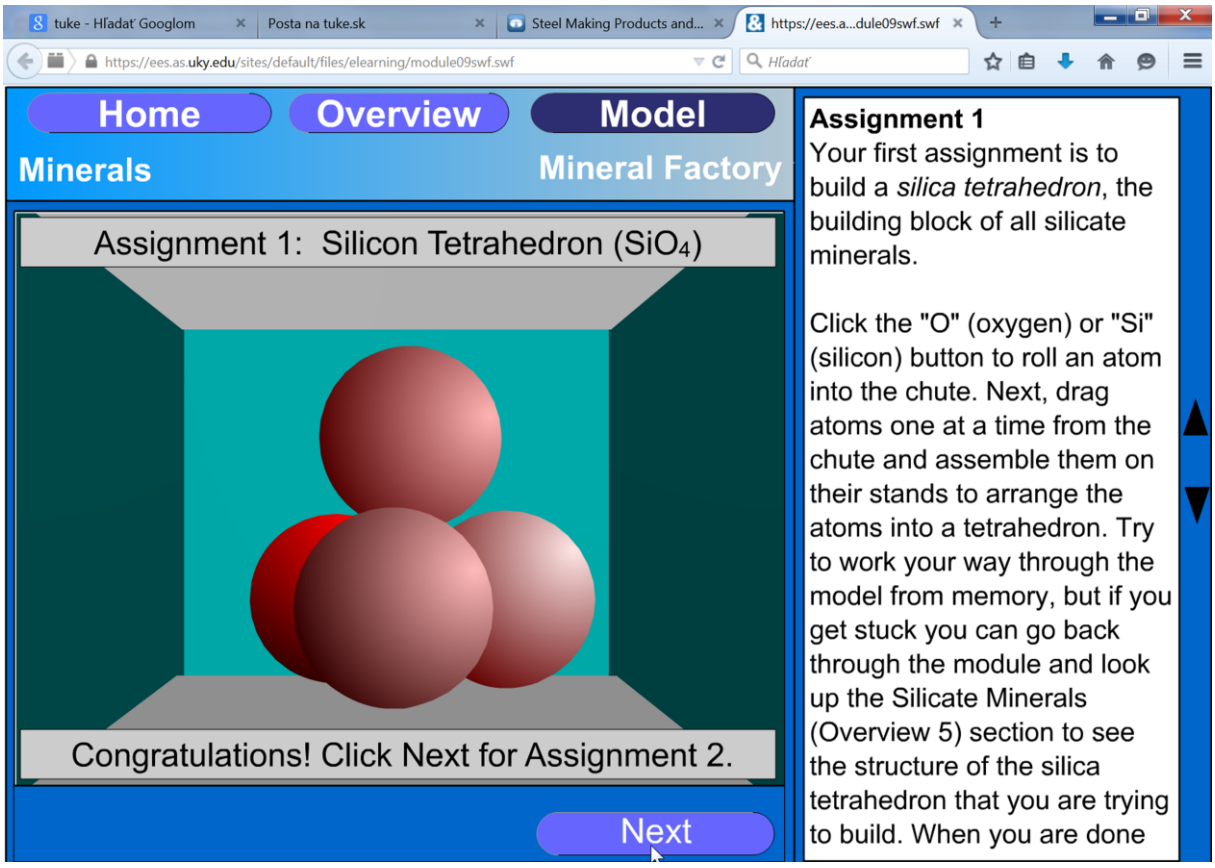
Mineral Factory
Assignment 1: Silicon Tetrahedron (SiO4)
O
Si
Check Answer
Assignment 1
Your first assignment is to build a silica tetrahedron, the building block of all silicate minerals.
Click the "O" (oxygen) or "Si" (silicon) button to roll an atom into the chute. Next, drag atoms one at a time from the chute and assemble them on their stands to arrange the atoms into a tetrahedron. Try to work your way through the model from memory, but if you get stuck you can go back through the module and look up the Silicate Minerals (Overview 5) section to see the structure of the silica tetrahedron that you are trying to build. When you are done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Mineral Factory
Assignment 1: Silicon Tetrahedron (SiO4)
Congratulations! Click Next for Assignment 2.
Next
Assignment 1
Your first assignment is to build a silica tetrahedron, the building block of all silicate minerals.
Click the "O" (oxygen) or "Si" (silicon) button to roll an atom into the chute. Next, drag atoms one at a time from the chute and assemble them on their stands to arrange the atoms into a tetrahedron. Try to work your way through the model from memory, but if you get stuck you can go back through the module and look up the Silicate Minerals (Overview 5) section to see the structure of the silica tetrahedron that you are trying to build. When you are done