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The Changing Lithosphere: formation of minerals and dissapearance of rocks

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Earth Science teaching/learning is based on the idea that lithosphere is subject to changes that continuously modify its aspect.
In order to demonstrate one of the causes of these changes, simple laboratory experiments have been used for first year high school students allowing simulating the formation of minerals by precipitation from a saturated solution and their solubility due to chemical reaction with acid substances.
In the first stage, solubility, saturated and unsaturated solution concepts have been clarified by using sugar candies thatdissolveat different times by putting them in water containing increasing amounts of added sugar.
Afterwards, by inspection of data tables, students have verified that different substances have different solubilities at the same temperature.
At this point the solubility CuSO4. 5 H_2O was considered and students prepared saturated aqueous solutions by adding 31.6 g of the salt in 100 ml of water.
On further addition of salt for a total of 40 g, students have verified the presence of an undissolvedresidue that dissolved on heating. The obtained solution was transferred to a crystallization dish. Subsequent cooling and solvent evaporation produced a supersaturated solution where the precipitation process started allowing the formation, in 5-6 days, of CuSO4. 5 H_2O bluecrystals.
One of the minerals that can form by precipitation from a saturated solution is calcite that can originate from precipitation of calcium carbonate saturated solutions or from deposition of marine organisms inorganic residues containing calcium carbonate in their shells.

However, when a mineral is formed, it will not remain unchanged forever.
In order to show that some minerals and carbonaterocks, in addition to erosion phenomena, may also be subject to chemical attacks by atmospheric agents leading to their dissolution. Several rock samples were treated with an acid solution, and the bubbles forming in some of the samples demonstrated that even rocks could dissolve under acid conditions;as such substances can be present in rain, for example.
A clear example in nature of calcium carbonate dissolution by acid rain is the karst.The phenomenon was discussed with the aid ofimages depicting karst landscapes wherethe erosion phenomena produced by acid precipitations were evident.
Therefore, acidity is one of the causes of erosion triggered by atmospheric precipitation and increasing acidity produced by volcanic eruptions or anthropic activities will enhance lithosphere erosionphenomena.