

The scenario

Subject	Chemical reactions/Dehydration reaction of biomass
Length	5:44
Main objectives	To show how a dehydration by an acid works
Detailed objectives	
Structure and description of experiments:	
1. Introduction	Description: The motivation for the experiment will be the investigation of the dehydration of biomass.
2. Main subject	Description: What happens when biomass is exposed to an acid? What reaction occurs? What can we physically observe?
Part 1	
Experiment 1 (0:46), (0:40),	<p>Tools: Sugar, H₂SO₄, beaker</p> <p>Description: Pour the sugar into the beaker. Carefully add the H₂SO₄ and mix.</p> <p>After a few seconds of mixing, the mixture will darken. Subsequently, the mixture will start to boil. A reaction is occurring and produces vaporized water and carbon dioxide. The vaporized water and carbon dioxide are responsible for the expansion of the mixture inside the beaker. Meanwhile, the formation of a black spongy mass of carbon, known as sugar charcoal, occurs.</p> <p>Questions: What is the name of the reaction that occurs in the experiment that causes the generation of heat and causes the mixture to boil? – exothermic reaction</p> <p>Conclusions: The dehydration of biomass by acid results in the vaporization of the water and the formation of a black spongy mass of carbon</p>
3. Summary, evaluation and notes	<p>Application: This reaction is useful to prepare carbon materials from biomass wastes, this issue can be discussed in class, as well as the advantages of activated carbons for water purification, among other uses</p> <p>Level: primary school (ISCED 2 / 6th, 8th grade)</p>