The scenario

Subject	Detection of organic substances
Length	3,05 min.
Main objectives	Learning the reducing properties of sugar.
Detailed objectives	Observation of the transformation of copper (II) oxide into a red precipitate of metallic copper Learning the methods of sugar detection
Structure and description of experiments:	
Introduction	Description: Sucrose heated with black copper(II) oxide decomposes while reducing the oxide to metallic copper. Sugar is oxidized during thermal decomposition. Similar reactions are used when obtaining metals from their ores (usually oxides).
Main subject	Description: Learning the reducing properties of sucrose.
Experiment	**Equipment:** test tube, test tube clamp, gas burner. **Reagents:** sucrose, copper(II) oxide **Precautions:** work with gloves and protective glasses! **Description:** Add a pinch of sucrose to the test tube and then, using a spatula, add about twice as much copper(II) oxide. Mix the contents of the tube by gently shaking it so that it takes on an even color. Then place the tube in the tube clamp and start heating it carefully in the flame of the burner. Heat the contents of the test tube until thick smoke appears - then stop heating and set the test tube aside to cool down. After the tube has cooled, check the appearance of the contents. **Questions:** 1. Write down the changes taking place in the test tube. 2. What reactions take place in the test tube after the start of heating? **Conclusions**: During heating, sucrose decomposes, which removes oxygen from black copper(II) oxide, reducing it to a red precipitate of metallic copper. Copper Cu^{2+} goes to the zero oxidation state and sugar decomposes into carbon dioxide and water. These transformations are observed as smoke (water vapor) and the formation of a brown-orange precipitate in the test tube. **Level:** Secondary School

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