Promoting STEAM education

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The following project is based in STEAM principles and intends to enhance inquiry learning, creativity and cooperation of the students. It takes place in a chemistry lab and it is aimed to 8th grade students.

Preparing ketchup in the lab

Timeline (about 1 hour 20 min procedure)

1) Setting the problem.
   Preparation of ketchup in the chemistry lab. Why? It is a lovely relish for youngsters. Let's prepare a healthy product.
   A video related to the project would be helpful.
   (5 min)

2) Inquiry
   Searching for materials and devices. Surfing for information in various sources (sites, videos).
   Group assessment of the procedure and the possible effectiveness.
   (20 min)

3) Design and testing
   Manufacturing the mixture.
   Ingredients: tomato pulp, salt, sugar, vinegar, oregano
   Utensils: beakers, stirrer, spoons, cups
   Device: digital scale
   Equipment: lab aprons, goggles.
   The students are working in teams following the recipe (7 g tomato pulp, 4 g water, 3 g sugar, 1 g vinegar, 0,5 g oregano)
   After making the mixture, it is transferred to cup.
   Testing of the product.
   Measuring the calories per 100 g of the product after collecting information from the internet.
   (30 min)

4) Conclusions and presentation.
   A group of students compares the taste of different cups.
   Discussion in the assembly. Students express their experience. Discussion of the possible failures, of alternative recipes.
   Possible use of the product.

Each team submits a short report of the whole work they carried out. *(25 min)*