

**Are you eating iron nails for breakfast?**      **SNC4E – Nutritional Science**

<b>Are you eating iron nails for breakfast?</b>	Assessment	AS/OF
	Cross-curricular	Phys Ed. /Home Ec

<p><b>Big Ideas</b></p> <ol style="list-style-type: none"> <li>1. investigate nutrients and non-nutrient additives in a variety of foods;</li> <li>2. demonstrate an understanding of food components and their effects on the human body.</li> </ol> <p><b>Learning Goals</b></p> <p>Students will:</p> <ol style="list-style-type: none"> <li>1. Understand how to conduct an investigation;</li> <li>2. Understand why certain nutrients are added into food;</li> <li>3. Be able to initiate and carry out an investigation based on variables that they identify.</li> </ol>	<p><b>Specific Expectations</b></p> <ol style="list-style-type: none"> <li>2.3 conduct an investigation to test for the presence of various nutrients in foods (e.g., use iodine to test for starch; use Benedict’s solution to test for simple sugar)</li> <li>3.1 identify sources of the principal food nutrients (e.g., carbohydrates, lipids, proteins, vitamins, minerals, fibre), with reference to Canada’s Food Guide, and describe the function of these nutrients in the body</li> </ol>
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**Description**

Students will carry out a laboratory experiment to isolate particles of iron in their breakfast cereal. They will then identify other variables that they would like to test for and using their Smarter Steps to Inquiry framework, go ahead and test their variable. Lastly, a class discussion would take place discussing the difference between chemical and nutritional iron and the need for iron in our bodies. Students should also be prepared to discuss the other variables that they tested for and their results.

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**Materials**

Strong magnet painted white (e.g. magnetic stir bar magnet) or neodymium magnet  
Re-sealable clear sandwich bags  
Approximately 1 cup of cereal high in iron or fortified with iron  
Water  
Bowls

**Safety Notes**

Do not eat the cereal as you are conducting the experiment.

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**Introduction**

Introduce the topic of added nutrients and vitamins in our foods to students. Show them pictures of labels to illustrate the point. Have a class discussion around the different types of added nutrients and vitamins found in foods and discuss the reasons why this is done. I.e. Scurvy, rickets, etc.

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**Action**

In small groups, have students perform the laboratory, “Are you eating nails for breakfast.” Students will then identify their own variables and test one per group using the Smarter Steps to Inquiry framework.

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**Consolidation/Extension**

Extension – if conditions are ideal, groups can test for another variable and report their findings.

Consolidation – students will briefly present their findings on the variables that they tested to the class. A class discussion on the difference between mineral and chemical iron (and other nutrients) should also be discussed.

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**Resources**

Experiment adapted from:

*<https://www.stevespanglerscience.com/lab/experiments/eating-nails-for-breakfast/>*