**Introduction**



**Major Themes for the Unit**

* **Scientific Themes: Science Themes:**General Nutrition, Biochemical Pathways, Energy Systems in Sport
* **Scientific Practice(s):**Constructing Explanations, Engaging in Argumentation from Evidence
* **SSI:**“Fat Tax” (taxation of food deemed to be obesogenic, based on their macronutrient profile and/or ingredients)
* **First-hand exploration of scientific themes and synthesis of related societal dimensions through analysis of significant historical and current events**

**Driving (Unit) Question:**Should the U.S. consider implementing a "fat tax" on non-nutritious foods to discourage people from unhealthful nutrition choices?

**Concepts needed to explore the driving question:**

* Science concepts:
  + Macronutrients as energy sources
  + Chemical structure and function of macro- and micronutrients
  + Carbohydrate & fat metabolism: pathways and hormonal regulation
  + Nutrition and energy systems in athletic performance
* Societal dimensions:
  + Socioeconomic disparity, food deserts
  + Conflicts among economic ideologies
  + Conflicts among political ideologies
  + Healthcare regulation
  + Political motives influencing government recommendations
  + Uncertainty & disagreement in “new” and complex science field

**Unit-level performance expectations**

* Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules (HS-LS1-6).
* Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy (HS-LS1-7).
* (All Sports, Exercise, and Health Science Core Syllabus Assessment Statements, International Baccalaureate Organization) \*link to PDF

**Unit Assessment(s)**

* Daily Starter Question (revisiting Essential Science Question)
* 3-Day Food Diary: documentation and stepwise analysis of own dietary intake
  + macronutrient content analysis & related energy calculations
  + micronutrient content analysis
  + tracing of fat & carbohydrate metabolic pathways
  + comparison to current and historical nutrition recommendations
* Culminating Event: position paper on proposed Fat Tax

[**Overall Instructional Sequence**](https://web.archive.org/web/20191025042008/http:/ri2.missouri.edu/ri2modules/Fat%20Tax/sequences)

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