

Lesson Title: Micronutrients and Health
Course: Health Science 20
Designer: Sam Gajda and Lauren Carlson

Learning Outcomes/Intentions

Formal Unit Outcome(s):

Assess the importance of macronutrients and micronutrients in maintaining human health.
Indicator (i): Explain how micronutrients (A, B, C, D, E, K, iron, calcium, phosphorous) are necessary for health.

Concept:

1. Students will understand the difference between a vitamin and a mineral
2. Students will identify the roles and sources of essential micronutrients (vitamins and minerals)

Essential Questions:

1. What is the difference between a vitamin and a mineral?
2. What are the roles of the essential micronutrients?
3. What are some food sources of the essential micronutrients?

Skills:

CP - N/A
SI - making observations; posing questions; examining sources of information to see what is already known

Assessment Evidence

Formative Assessments (Assessment for Learning):

1. Students will be assessed on their responses to questions asked in class and class discussions. They will be assessed on their understanding of and engagement in the lesson. This will help inform whether students understand the concepts or whether more time is required on them.

Summative Assessments (Assessment of Learning):

1. Students will complete a question sheet that is based on the PowerPoint slides taught to them. They will be assessed on how well they show they understand the content and can communicate it in the question sheets.

Safety

No safety concerns

Materials

PowerPoint
Handouts

Learning Plan

Engage:

Link students to previous learning regarding macronutrients (lipids, carbohydrates, proteins). Ask students to identify these macronutrients.

Explain:

Show students PowerPoint introducing them to micronutrients

- vitamins
- minerals

- fat-soluble vs water-soluble vitamins

Explore

Hand out Micronutrients question and answer sheet for students to complete

Extend

Questions on assignment include extension questions to have students apply what they have learned to their lives

Health Science 20: Micronutrients and Health Assignment

Match the following micronutrient to their function:

- | | |
|---------------------|---|
| 1. _____ Potassium | A. Maintains bones and teeth; aids in muscle contraction |
| 2. _____ Copper | B. Key for blood clot formation |
| 3. _____ Iron | C. Needed to absorb calcium; aids maintenance of bone structure |
| 4. _____ Calcium | D. Maintains fluid balance; aids in muscle contraction |
| 5. _____ Magnesium | E. Supports the immune system; aids collagen production |
| 6. _____ Vitamin A | F. Produces the protein to carry oxygen to the muscles |
| 7. _____ Vitamin K | G. Group of vitamins that primarily aid in metabolism |
| 8. _____ B Vitamins | H. Supports healthy eyes, skin, and immune system |
| 9. _____ Vitamin C | I. Supports the central nervous system; regulates iron metabolism |
| 10. _____ Vitamin D | J. Regulates blood pressure; maintains blood sugar levels |

1. What is a micronutrient?

2. Explain the difference between vitamins and minerals.

3. What does it mean for vitamins to be fat soluble?

4. List the vitamins that are fat soluble and two dietary sources for each.

5. Why is consuming too many fat soluble vitamins a concern?

6. Explain the definition of a water soluble vitamin.

7. Why do water soluble vitamins have to be consumed more regularly than fat soluble vitamins?

8. List the water soluble vitamins and provide two dietary sources for each.

9. List two reasons why a doctor might recommend someone take vitamin/mineral supplements. What vitamins/minerals might be recommended based on their circumstances?

10. What items can you buy at the grocery store that have vitamins or minerals added to them (fortified)?