

Folic Acid Health Campaign

Caleb Cheung, NBCT

Frick Middle School, Oakland, California

In collaboration with Alina Flores, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention

In this lesson students learn about the importance of folic acid in birth defects prevention. Students apply the information they gain through this lesson to design a public awareness campaign. They then present their designs to the class.

Disclaimer: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Folic Acid Health Campaign

Caleb Cheung, NBCT
Frick Middle School
Oakland, California

Summary

In this lesson, students learn about the importance of folic acid in preventing birth defects. Students apply the information they gain through this lesson to design a public awareness campaign, which they present to the class.

Learning Outcomes

- Students will learn about the role of folic acid in pregnancy and birth defects prevention.
- Students will design a product for a folic acid health campaign.

Materials

1. Computers with Internet access
2. Overhead or LCD projector
3. Art materials (paint, markers, crayons, poster paper, legal sized paper, etc.)
4. Optional: tape recorder, cameras, video cameras

Total Duration

4–5 hours

Procedures

Teacher Preparation

Download and copy the “What Is Folic Acid?” worksheet to be used in step 2 and the “Project Rubric” to be used in step 3. Look through the “Folic Acid” website to become familiar with the background for this lesson.

Students can either work individually or in groups. Plan the lesson accordingly.

Web Resource

Title: Folic Acid

URL: www.cdc.gov/ncbddd/folicacid/index.htm

Description: This CDC web page provides information on folic acid.

Step 1: Introduction

Duration: 15 minutes

Start the lesson by introducing the importance of public health and the role that public health workers play in our community. Pose a few questions about public health to generate interest and assess students' background knowledge. These may also be used as a “do now” or a “prewrite” prompt. Here are some suggested questions:

- Why is it important to keep our society healthy? (e.g., prevent diseases from spreading, control new diseases)

- Who is responsible for keeping us healthy? (e.g., doctors, nurses, public health workers, ourselves)
- How is the health of individuals different from public health? (e.g., one person vs. many people, concern over how diseases are transmitted and controlled)

Next, pose a few questions about how health workers prompt awareness about public health issues. Here are some suggested questions for the discussion, along with a few possible answers:

- If a new disease or condition is discovered, what can health workers do to make sure people know about it? If there is a way to prevent the disease or the condition, how can health workers “get the word out”? (e.g., newspapers, TV commercials, letters)
- Often the government sets aside money to promote health. What might influence the way the money is used? (e.g., who controls the money, best way to share the information)
- What factors do health workers have to take into account when they design a health campaign? (e.g., target potential patients, best way to communicate the information, cost)

Step 2

Duration: 45 minutes

Now that students know about the role of public health workers, explain to students that this lesson will focus on a health campaign based on folic acid awareness. The reason for choosing this topic is because many people do not know about the importance of folic acid.

Have students use the “What Is Folic Acid?” worksheet and CDC’s folic acid website to research basic information about folic acid in preparation for designing their health campaign. Students can complete the worksheet either in groups or as individuals. (**Note:** For the actual health campaign, you may choose to have students work individually or in groups. If students are working in groups, you may want them to work in the same group for the duration of this lesson.)

When students have had adequate time to complete the worksheet, review the answers provided in “What Is Folic Acid? Answers” together as a class.

Web Resource

Title: Folic Acid

URL: www.cdc.gov/ncbddd/folicacid/index.htm

Description: This CDC web page provides information about folic acid.

Supplemental Documents

Title: What Is Folic Acid?

File Name: What Is Folic Acid.doc

Description: This worksheet guides students in finding out more about folic acid.

Title: What Is Folic Acid? Answers

File Name: What Is Folic Acid Answers.doc

Description: This document provides answers for the “What is Folic Acid?” worksheet.

Step 3

Duration: 2–3 hours

Now that the students have learned about folic acid, have them design a project to promote folic acid awareness. Brainstorm a list of possible ways to promote the importance of folic acid in the

community. After a list is established, allow students to select a method for their own projects. Depending on available resources, you may limit the options. Here are a few possibilities:

1. Brochure or pamphlet
2. Poster
3. Newspaper article
4. A song or rap
5. Radio commercial
6. Television commercial

The most basic version of this assignment would involve students designing posters, brochures, or newspaper articles since they only require basic art materials. However, if additional resources are available, students can also make radio commercials with a tape recorder or television commercials with a video camera. Additionally, if computers and cameras are available, students can use these as tools to design and add to parts of their project. If students need more time to finish their designs, they can take time outside of school to complete it.

Discuss what constitutes a good public health campaign product to promote folic acid. Review directions for designing their project. Remind students that they will need to present their project to the class and that both the project and its presentation will be graded. Share the rubric with the students and make sure they understand every component.

Help groups that are stuck on their design. Be ready to offer suggestions and encouragement for groups or individual students who are struggling.

Supplemental Documents

Title: Designing a Folic Acid Health Campaign

File Name: Designing a Folic Acid Health Campaign.doc

Description: This document provides the students with directions for designing their health campaign project.

Title: Project Rubric

File Name: Project Rubric.doc

Description: This is the rubric used to score the projects.

Conclusion

Duration: 1 hour

After students have completed the folic acid worksheet and have designed their project, have them present their projects to the rest of the class. Either have students volunteer or assign them in order. It might be helpful to write the order on the overhead or board so students are ready when it is their turn. During this time, students are given a score for their project based on the "Project Rubric" included in step 3.

Assessment

Assessment takes place in the evaluation of the health campaign using the rubric provided in step 3.

Modifications

Extension

Have students use their projects to disseminate this information to other people. Possible ideas include launching a school-wide campaign or using some of the material in conjunction with a community health organization. You could contact your state or local health department to discuss distributing the materials that the students designed.

Other Modifications

Instead of the teacher evaluating the projects, you could set up a student evaluation process that allows for peer assessment of the projects. There might be an increase in accountability knowing that their peers will be grading their work.

Education Standards

National Science Education Standards

LIFE SCIENCE, CONTENT STANDARD C:

As a result of their activities in grades 5–8, all students should develop understanding of

- **Structure and function in living systems**
- **Reproduction and heredity**
- Regulation and behavior
- Populations and ecosystems
- Diversity and adaptations of organisms

SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES, CONTENT STANDARD F:

As a result of their activities in grades 5–8, all students should develop understanding of

- **Personal health**
- Populations, resources, and environments
- **Natural hazards**
- **Risks and benefits**
- **Science and technology in society**

HISTORY AND NATURE OF SCIENCE, CONTENT STANDARD G:

As a result of their activities in grades 5–8, all students should develop understanding of

- **Science as a human endeavor**
- **Nature of science**
- History of science

What Is Folic Acid?

Folic Acid Health Campaign
Caleb Cheung, CDC's 2005 Science Ambassador Program

Use the Centers for Disease Control and Prevention's web pages on folic acid to answer the following questions. In the process of searching for answers, you will learn about the importance of folic acid. Start at the following website and be sure to type in the web address correctly: www.cdc.gov/ncbddd/folicacid/index.htm

- 1. What is folic acid?**
- 2. Why is it important?**
- 3. Why is it important for women of child-bearing age to consume folic acid?**
- 4. How much folic acid is needed each day?**
- 5. Is it possible to consume too much folic acid?**
- 6. What conditions or birth defects can folic acid help to prevent?**
- 7. Name three places where you can find folic acid.**
- 8. At what age do women need to make sure they are taking enough folic acid? Why?**
- 9. What are the health care costs involved for a person with spina bifida?**
- 10. If a woman is thinking about having a baby, when is the best time to take folic acid?**

What Is Folic Acid? (Answers)

Folic Acid Health Campaign
Caleb Cheung, CDC's 2005 Science Ambassador Program

These are the answers to the "What is Folic Acid?" worksheet.

1. What is folic acid?

According to the CDC website, folic acid is a B vitamin that is needed to make healthy new cells.

2. Why is it important?

According to the CDC website, folic acid is needed for making the cells that will form the brain, spine, organs, skin, and bones.

3. Why is it important for women of child-bearing age to consume folic acid?

The B vitamin, folic acid, helps prevent a number of birth defects. If a woman has enough folic acid in her body before and during pregnancy, her baby is less likely to have a major birth defect of the brain or spine.

4. How much folic acid is needed each day?

According to the CDC website, every woman who could possibly become pregnant should take 400 micrograms (400 mcg or 0.4 mg) of folic acid daily.

5. Is it possible to consume too much folic acid?

According to the CDC website, it's unlikely that women will be hurt from getting too much folic acid. We don't know of an amount that is dangerous. Yet, for most women, consuming more than 1,000 mcg of folic acid daily has no benefit. Unless their doctor advises them to take more, most women should limit the amount they take to 1,000 mcg a day.

6. What conditions or birth defects can folic acid help to prevent?

Neural tube defects (NTDs) such as anencephaly and spina bifida, and possibly, cleft lip and palate and some heart defects.

7. Name three places where you can find folic acid.

Multivitamins containing folic acid and various foods enriched with folic acid (cereals, oatmeal, rice, bread, and nutrition bars).

8. At what age do women need to make sure they are taking enough folic acid? Why?

Any woman of child-bearing age should take folic acid. Educational campaigns usually target women who are between the ages of 18 and 35 because most women become pregnant in this age range.

9. What are the health care costs involved for a person with spina bifida?

The average cost of caring for a child born with spina bifida for life is about \$636,000 per child. This is only an average cost, and for many families the total cost might be well above \$1,000,000. Additionally, the physical and emotional tolls on the families affected are high as well. If spina bifida could be prevented in just one more child, all efforts would be worthwhile!

10. If a woman is thinking about having a baby, when is the best time to take folic acid?

Folic acid should be taken a few months before pregnancy and during pregnancy, Because neural tube defects can occur before a woman knows she is pregnant, it is a good idea for all women who can become pregnant to take a multivitamin with folic acid every day.

Reference:

Centers for Disease Control and Prevention. Folic Acid Frequently Asked Questions (FAQs) [online]. 2005. [cited 2005 August 20]. Available from URL: <http://www.cdc.gov/ncbddd/folicacid/faqs.htm>

Designing a Folic Acid Health Campaign
Folic Acid Health Campaign
Caleb Cheung, CDC's 2005 Science Ambassador Program

Directions

Now that you have learned about folic acid, your job is to design a project to promote folic acid awareness. Your group has a choice of one of the following types of projects:

- Brochure or pamphlet
- Poster
- Newspaper article
- Song or rap
- Radio commercial
- Television commercial

Required Content

Whichever type of project you choose, you will need to include the following information from your folic acid worksheet:

1. Describe folic acid and its role in the human body.
2. Explain the importance of folic acid for women who are considering having children.
3. Include amount of folic acid needed each day.
4. List two sources of folic acid.
5. Discuss birth defects or conditions that folic acid can help prevent.
6. Include any other pieces of information you think is important.

Remember, your project also needs to be creative and appeal to your target audience. Keep in mind the location where the project will be used. (Where will the brochure be handed out? Where will the poster be posted? If you are designing a commercial or song, when will it be played? What station or shows will play your commercial or song?)

To help you plan your project, answer the following questions before you start:

1. What type of project will your group be working on?

2. What materials do you need to complete your project?

3. Who is your target audience? (age group)

4. Where will your project be used? (location)

Project Rubric

Folic Acid Health Campaign
Caleb Cheung, CDC's 2005 Science Ambassador Program

Your grade on the project will be based on the following rubric areas.

Area	4	3	2	1
Content accuracy	The project actively describes all parts of the required content.	One item is missing from the list of required content.	Two items are missing from the list of required content.	More than two items are missing.
Persuasiveness	Project is persuasive and appeals to the target audience.	Project is only partly persuasive or does not have a clear target audience.	Project is not persuasive or audience is too general.	Project is not persuasive and does not identify a target audience.
Creativity and completion	Project idea is original, interesting, and completed.	Project is not original or only partially completed.	Project is not original and not completed.	No project created.
Presentation	Group is organized and ready to present, and everyone in the group participates.	Only some of the group members participate or the group is not well organized.	Only one person in the group participates and the group is not well organized.	No presentation prepared.

Worth 16 points