

Introduction

The following thematic unit is centered around **CHOCOLATE** and contains classroom activities relating to mathematics, literature, geography and instructional resources found on the World Wide Web. Due to the nature of thematic units updates will be made on a continual basis adding additional resources as they become available.

(** See note below.)

To learn more about this Chocolate Thematic Unit click on either of the blue pointers located below to search the Great Lakes Collaborative's Explorer database:

- [Locate ALL instructional material for this unit itemized in this document](#)
- [Locate ALL instructional material in Explorer database containing the term "chocolate" in the description.](#)

Activities

Many myths associated with chocolate need attention before any in depth study of it can be made. In [WWW Cocoa Math](#) (seen later in this document), many of the questions pertaining to cholesterol, caffeine, sodium and allergies are expanded upon.

** In order to click on the blue pointers throughout this document you need to be reading this document with Acrobat Reader 2.1 or greater with the Web Link Plug-In installed. You also need to have installed some form of Web Browser, such as Netscape and a network connection with either a modem or hard wired network.

Another way of looking at chocolate is through its application in the study of statistics. M & M's are a commonly used source for practicing mental estimation, data collection and graphing for students. The resource titled **M & M Sort** by Karen Tobler introduces the art of statistical analysis.



Hershey Fractions reinforces fractional concepts through use of the Hershey Candy Bar. This candy bar is divided into many individual squares. Students, in this activity, take a whole candy bar and divide it into fractional parts. They can also use problem solving skills in order to divide up the bar evenly among their group members.

The language arts curriculum is also incorporated as a part of this unit. The activity **Charlie and the Chocolate Factory**, based on three chapters from the children's book by Roald Dahl, presents six reading, writing and math activities. In addition **The M & M's Chocolate Counting Book** is an excellent resource for similar activities. The last literature based file in this unit is **Chocolate Bibliography**. This section lists twelve books by such famous authors as Roald Dahl, Barbara Douglass and Richard Ammon that can be easily incorporated into a successful unit on chocolate.

Mapping of Chocolate Factories introduces both the geography and mathematics curriculum into a single lesson. Students create a plan to go on an imaginary world-wide chocolate tour. Students visit eight factories and are asked to hypothesize what the shortest distance traveled will be. This lesson brings together map reading skills and knowledge of geography, as well as, measurement and estimation skills.

Finally, **Chocolate Chip Math** introduces a lesson that incorporates activities in the areas of consumer education, general mathematics, language arts and the scientific method. In this lesson students are provided an opportunity to problem solve and apply mathematical skills using common everyday objects.



The Great American Chocolate Company



Name of main WWW Site: Hershey's

Home URL of site: <http://www.microserve.net:80/~hershey/>

Other related sites:

Specific URL of activity: <http://www.microserve.net:80/~hershey/welcome.html>

Ideas for using this site in your classroom:

This site is filled with information about the Hershey company and Milton Hershey.

It contains recipes, history of Milton Hershey, history of chocolate making, plant tour, nutritional information, fun facts, and a list of products hershey makes- complete with on-line ordering. The pictures of the plant and chocolate making are nicely done.

Use this when discussing inventors, factories, candy, or chocolate.

WWW Cocoa Math



Name of main WWW Site: Hershey's

Home URL of site: <http://www.microserve.net/~hershey/>

Specific URL of activity: <http://www.microserve.net/~hershey/nutrition.faqs.html>

Ideas for using this site in your classroom:

This site contains many facts that counter some of the myths associated with chocolate. Each myth is followed by problem solving activities.

The Sweet Truth About Chocolate

Chocolate is America's favorite flavor. But myths about chocolate abound, perhaps in the mistaken belief that anything that tastes good must be bad for you. Here are some answers to questions most frequently asked by consumers about our products.

Does chocolate contain high levels of cholesterol?

A 1.55 ounce Hershey's milk chocolate bar contains only 10 milligrams of cholesterol, all of which comes from the milk used in the milk chocolate. An 8-ounce glass of whole milk, for comparison purposes, has about 36 milligrams of cholesterol. Hershey's cocoa and Hershey's unsweetened baking chocolate have no cholesterol.

Problem: How many milligrams of cholesterol would there be in a 2 ounce Hershey's milk chocolate bar?

Is chocolate high in caffeine?

A 1.55 ounce Hershey's milk chocolate bar contains only 9 milligrams of caffeine. This compares to 137 milligrams of caffeine in a 5-ounce cup of regular automatic drip coffee, 30-46 milligrams in a 12-ounce can of regular cola beverage, and about 3 milligrams in a 5-ounce cup of instant decaffeinated coffee.

Problem: The statistics mentioned above include a 12-ounce can of regular cola. How much caffeine would be contained in a 5-ounce container of cola?

Is chocolate high in sodium?

A 1.55 ounce Hershey's milk chocolate bar contains only 40 milligrams of sodium. Much higher amounts of sodium are found in other processed foods such as an ounce of cheddar cheese (198 milligrams) and a slice of whole wheat bread (132 milligrams).

Problem: How many milligrams of sodium exist in a 2 ounce Hershey's milk chocolate bar. Find what is recommended by the FDA for normal intake of sodium and compare the 40 milligrams with other foods. Why is sodium so bad?

Are many people allergic to chocolate?

Very few people are truly allergic to chocolate. Less than two percent of the population have true food allergies. True food allergens that might be in chocolate bars are milk, nuts and soybeans. If you are allergic to any of these foods, read ingredient listings or contact us for information regarding which of our products contain these ingredients. (1-800-468-1714).

Problem: If the US population is 220 million, How many persons have true food allergies?

Read the labels of milk chocolate bars and record the ingredients. Call Hershey's 1-800 number and ask about the amount of each ingredient. Then create a circle graph showing the percent of each item.

What is the whitish color or streaking that sometimes appears on chocolate?

Temperatures of 78 degrees F. or more cause chocolate to melt and the cocoa butter in it to rise to the surface. If this happens, you will see a whitish appearance on the surface of the chocolate known as cocoa butter "bloom." Ordinarily, this has no effect on quality. However, prolonged exposure of the chocolate to excessive heat may cause further discoloration of the product and loss of flavor.

Problem: Compare this temperature (78 degrees F) with other activities and their temperature. For example, water freezes, water boils, a pleasant day, etc. Convert this temperature to degrees Celsius.

History of Chocolate



Name of

main WWW Site: Godiva Online Homepage

Home URL of site: <http://www.godiva.com/>

Specific URL

of activity: <http://www.godiva.com/resources/history.html>

Ideas for using this site in your classroom:

This site is filled with a complete history of "An Age-Old Obsession" known as "Confection." This history dates the making of chocolate to greater than 4,000 years ago during the time of the Aztec and Mayan cultures.

The Explorer database is jointly maintained by:
Great Lakes Collaborative and the University of Kansas.

The Great Lakes Collaborative does not control contents of resources pointed to in this lesson plan/classroom activity. Currency of data, comprehensiveness and relevancy of information is responsibility of the site visited. Supervise first-time student access and use. Are you interested in learning more about Great Lakes Collaborative Membership, this unit or others like it? Click on either the GLC or Explorer logos to the right. This will open up your web browser to our location.



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