



I. The History of Gum

- **Natural Gum is Discovered**

Years before the invention of chewing gum, many civilizations around the world were chewing natural gum that was found in their immediate surroundings. In A.D. 50, Ancient Greeks were believed to chew *mastiche* (pronounced “mas-TEE-ka”), tree resin derived from the Mastic tree. Grecian women especially favored chewing mastic gum to clean their teeth and sweeten their breath. It has also been discovered that the Mayans, an Indian civilization that inhabited Central America during the second century, enjoyed chewing *chicle*. *Chicle* is a natural gum that comes from the latex of the Sapodilla tree and it later becomes the main ingredient in chewing gum.





By cutting the bark of spruce trees, the American Indians discovered another natural form of gum-like resin. They were the first to introduce the custom of chewing spruce gum to the early North American settlers. The New Englanders, eager to make a profit, commercialized chewing gum by selling and trading spruce. In about 1850, sweetened paraffin wax known and eventually exceeded spruce gum in popularity.

- **The Evolution of Chewing Gum**

Modern chewing gum products appeared in 1869 when Mexican General, Antonio Lopez de Santa Anna, hired New York inventor, Thomas Adams, to develop a new form of rubber using *chicle*. Despite his unsuccessful attempts to develop rubber, Adams did succeed in producing the first modern chewing gum. He named it “Adams New York No. 1.”

It became evident that gum made with *chicle* and similar latexes were more popular than spruce or paraffin gum. Manufacturers as well as consumers found that *chicle*-based chewing gum was smoother, softer and held its flavor longer than any previous type of chewing gum. By the 1900s manufacturers experimented with different shapes and sizes, ranging from long pencil shaped sticks to ball form, and flavors, such as peppermint, fruit and spearmint.



- **Bubble Blowing Begins**

Bubble gum was invented in 1928 by Walter Diemer, a cost analyst for the Fleer Company. Many people had tried for years to develop a gum that could be blown into bubbles. However, it was Mr. Diemer, a young man who knew nothing about chemistry, who found the right combination of ingredients and created a gum that was strong enough and elastic enough to stretch when filled with air.

II. What Is Bubble Gum Made Of?

Ingredients



Each gum product has its own specific formula that makes it unique. Common ingredients in chewing gum are: powdered sugar, gum base (a combination of food-grade synthetic and natural ingredients that make gum smooth and chewy), softeners, flavoring and coloring. Sugar substitutes replace powdered sugar and glucose syrup in sugarless gum. The ingredients are described below:

Gum Base

Gum base puts the “chew” in regular chewing gum and the “bubble” in bubble gum. Resin, a product of trees growing here in the United States, plays a part in enhancing the texture of gum base. Resin comes from pine trees growing in the southeastern and southern parts of the United States. In recent years, science has developed new



synthetic gum base materials which improve the texture of chewing gum when blended with natural ingredients.

Softeners



Softeners are made with refined vegetable oil products. They help to blend the gum base ingredients and keep the gum soft and flexible by retaining the correct amount of moisture.

Sweeteners

Sugar and corn sweeteners found in sugared bubble gum are used to provide the sweet characteristics of bubble gum, as well as to maintain the proper texture of the gum while chewing.



Flavorings



Many fine flavorings are used in different types of bubble or chewing gum. The most popular flavors in the United States are the fruit flavorings. The best fruit flavorings are formulated with pure fruit extracts and other synthetic fruit flavorings blended together.

Colorings

Only approved colors are added to improve the appearance and fun aspects of bubble gum. Bubble gum colors of all colors of the rainbow have been experimented with, ranging from bright, multi-colored gum, to the traditional “bubble-gum” pink.

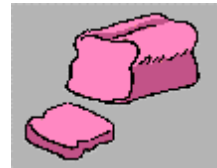


III. How Bubble Gum Is Made

Most types of gum are manufactured in spotless, air-conditioned rooms and are closely monitored to meet the company's high standards of quality. The process begins with the accurate weighing of all the ingredients. The gum base materials go into machines called **extruders**, which are used to **blend**, **smooth** and **form** the gum.



Next, the sweeteners, softeners, and colors are transferred and added to the mixture. Following the initial mixing, the flavors are added, and then blending is continued very slowly, for just the right amount of time required by the formula. At this point, the gum looks like stiff, colored **bread dough**.



Now it is time for the gum to be shaped. Gum can be flattened and cut into sticks, squeezed into a rope shape and cut into chunks, or molded into shapes and candy coated.

However, sticks of gum are the most common forms of bubble



gum. When blending is complete, the gum passes between rollers that press it into a **flowing ribbon**. The thick **ribbon of fragrant gum** moves through a sheeting machine, which is a series of rollers, each pair of rollers being set closer together, reducing the gum's thickness in stages. When the rollers press it to the exact thickness desired, the ribbon of gum is scored in a pattern of single sticks, long tapes or prepared in another way for packaging.

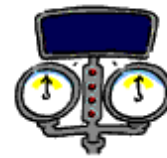
The process for making chunk bubble gum is essentially the same except that after the ingredients are blended, the mixture goes through an extruding process. This process changes the bubble gum into a solid, rope-like form. To



visualize what happens during extrusion, imagine **pushing toothpaste out of a tube**. This rope is then put on a moving belt and passed through a conditioning tunnel to cool it and develop its texture. Immediately after this, the rope-shaped gum is cut into one-inch long chunks and individually wrapped.

If gum is candy coated, like most gum balls or pellet gum, it is sprayed with liquid sweetener, allowed to dry, and then sprayed again. This process is repeated several times until the candy shell reaches the proper thickness.

The next stop is the conditioning room. Here the **temperature** and **humidity** are carefully **controlled** to make sure the finished gum will stay fresh on store shelves.



High-speed machines carefully wrap and package the gum in airtight wrappers. This ensures the gum is fresh and soft when the pack is opened. Then the gum is shipped to stores around the world for people of all ages to enjoy.

IV. The Benefits of Chewing Gum

The act of chewing is a pleasure that almost everyone enjoys. It seems we just like to sink our teeth into something



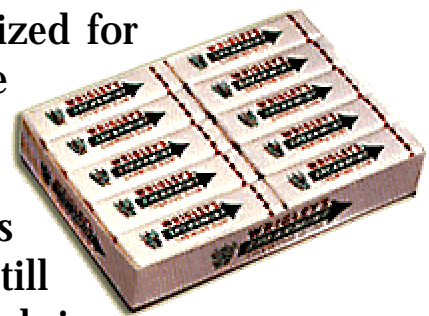
chewy from time to time. In addition, gum offers the pleasure of chewing in a handy, wholesome form. It relaxes out nerves and muscles and eases tension in the many everyday situations that make us restless and fidgety.

At work, chewing gum seems to make the job go easier. It helps us concentrate on the task at hand, whether in an office, factory or on the farm; or while doing homework or working on a hobby. Many car and truck drivers find that chewing gum is a valuable aid in keeping alert at the wheel. Chewing gum is also one of the longest lasting of all flavor treats.

As early as 1939, scientific research studies such as “The Psycho-Dynamics of Chewing,” by Dr. H. L. Hollingworth of Columbia University in New York showed how chewing relaxes people while they are working. Professor Hollingworth found that chewing reduces muscular tension and helps people feel more at ease. He emphasized that chewing on any chewy substance would give the same result, but modern chewing gum provides these benefits in the most convenient and enjoyable form.



Since chewing gum is so well-recognized for helping a person keep alert and wide awake while it eases tension, the Armed Forces supplied chewing gum to the fighting men in World War II and in the military actions in Korea and Vietnam. Today it is still included in field and combat rations and is supplied through post exchanges, base exchanges and aboard ships in the fleet. In fact, the Wrigley Company, in accordance with Department of Defense specifications, supplied chewing gum to government-appointed contractors to be distributed to U.S. troops stationed in Saudi Arabia during the Persian Gulf War in 1991.





Chewing gum adds to people's comfort and enjoyment in several other ways too. It moistens and refreshes the mouth and throat, and sweetens the breath. As a between-meals treat, it provides a pleasant little lift. Chewing gum often satisfies the desire for a snack, yet it is low in calories—averaging less than 10 per stick.

After meals, when it is not always convenient to use a toothbrush, chewing gum helps keep teeth clean. Chewing stimulates saliva, which helps neutralize traces of acids from fermented food that may cause tooth decay.

V. How To Blow Bubbles



First, chew 2 to 5 sticks worth of your favorite bubble gum. Chew for about 5 minutes before trying to blow a bubble.

Second, Flatten out the gum between your tongue and your front teeth.



Third, open up your teeth a little bit. Use your tongue to start pushing a bubble out between your teeth.

Lastly, Blow out ***SLOWLY*** until the bubble starts to form.



There are many manufacturers out there that make a numerous amount of different kinds and flavors of gum, so try them all until you find the one that works the best for you. **Remember bigger is not always better, so-- practice, practice, practice...**



Fun Facts About Gum



- ★ The first patent for chewing gum was issued in 1869 to William F. Semple, a dentist from Mount Vernon, OH.
- ★ In the Early 1900s, William Wrigley Jr., was one of the first to promote the sale of branded goods through advertising. Wrigley's new spearmint gum quickly became a best seller.
- ★ During WWII, United States military personnel spread the popularity of chewing gum by trading it and giving it as gifts to people in Europe, Africa, Asia and around the world.
- ★ Cinnamon, spearmint and peppermint are among the most popular flavors of chewing gum today.
- ★ The first bubble gum cards were issued in the 1930s. The pictures ranged from war heroes to wild west figures to professional athletes. The Topps Company became famous by offering baseball cards in packages of gum and sponsoring bubble gum blowing contests among ball players.
- ★ Why is bubble gum pink? The color of the first successful bubble gum was pink because it was the only color the inventor had left. The color "stuck" and today bubble gum is still predominantly pink.

- ★ The largest bubble ever blown was 23 inches in diameter. The record was set July 19, 1994 by Susan Montgomery Williams of Fresno, CA. (Guinness Book of World Records 1998)
- ★ Can you really remove gum from your hair with peanut butter? It has been proven that if you knead a small amount of peanut butter between your fingers and the gum, the gum will disperse enough so that you can remove it.
- ★ Did you know that North American kids spend approximately half a billion dollars on bubble gum every year?