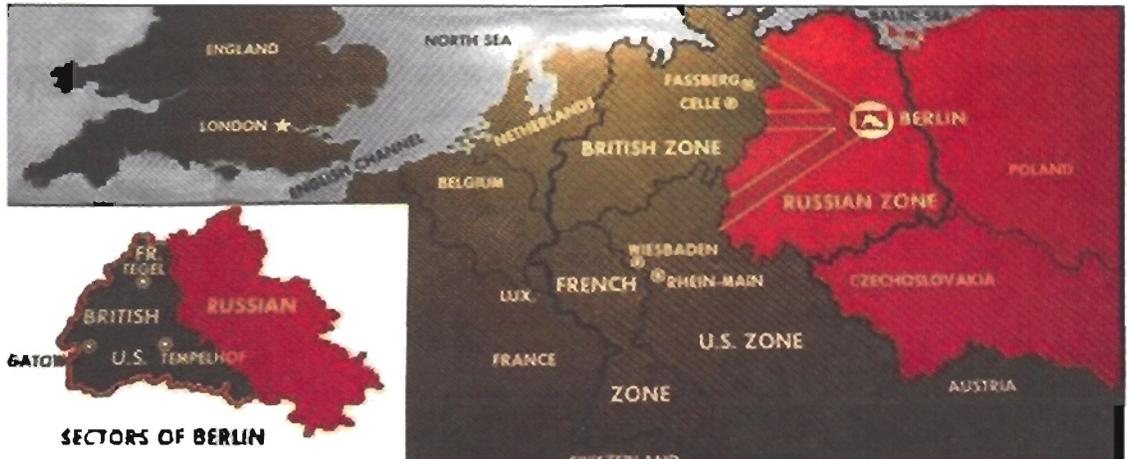


activity one

Parachutes, Candy and the Great Uncle Wiggly Wings

OBJECTIVE

This activity covers the construction of a toy parachute, and the story of how little parachutes brought joy and happiness to thousands of German children after the end of WWII. The primary hands-on objective is to build one or more parachutes that can carry a Popsicle® stick or a miniature chocolate candy bar.



CREDIT - Ms. Alice Faye Noble, an outstanding aerospace educator from the state of Kentucky, developed this activity around the heart-warming story of Col. Gail Halvorsen, an Air Force pilot. Ms. Noble has conducted numerous workshops featuring this activity and now thousands of children know the technology of a parachute and the story of the famous "Candy Bomber" during the period known as the Berlin Airlift!

NATIONAL SCIENCE STANDARDS

Content Standard A: Science as Inquiry

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

Content Standard B: Physical Science

- Position and motion of objects

Content Standard G: History and Nature of Science

- Science as a human endeavor

SOCIAL STUDIES STANDARDS

1. Culture
2. Time, Continuity, and Change
3. People, Places, and Environments
6. Power, Authority, and Governance
9. Global Connections
10. Civic Ideals and Practices

BACKGROUND

THE CANDY BOMBER STORY

At the end of WWII, a defeated Germany was divided amongst the victors, the United States, the Soviet Union, Great Britain, and France. The Soviet Union (USSR) took control of the Eastern half of Germany and the Western half was divided amongst the Allied forces of the USA, Great Britain, and France. The city of Berlin was sitting in the middle of the Eastern sector and it was governed by a union of the four powers, called the Allied Control Council. The objective of this council was to control and rebuild the war-torn city of Berlin.

Generally traffic moved throughout the city and much-needed supplies for everyday living for the 2,008,943 Berliners came in without any difficulty. There were many disagreements, on the Council, as to how the city should be rebuilt. As a result, Joseph Stalin, the leader of the USSR, wanted the US, Great Britain and France out and on the morning of April 9th, 1948, ordered all

American Military personnel maintaining communications equipment out of the Eastern Zone. On June 21st, a US military supply train was halted and it was moved back to the Western sector by a Soviet engine. On the 24th of June 1948, all land and water access to West Berlin was cut off by the Soviets. There were to be no more supplies to be moved into Berlin. The Allies were certainly not going to stand for this. Diplomacy failed, ground invasions were planned and World War III was eminent. U.S. military commander, General Lucius Clay had a plan by which an armed convoy through Soviet-controlled Berlin would break the blockade and this action would almost certainly create a war.

British Commander Sir Brian Robertson offered an alternative plan: supply the city by air. It was determined that the city's daily food ration would be 646 tons of flour and wheat; 125 tons of cereal; 64 tons of cooking fat; 109 tons of meat and fish; 180 tons of dehydrated potatoes, 180 tons of sugar; 11 tons of coffee; 19 tons of powdered milk; 5 tons of whole milk for children; 3 tons of fresh yeast for baking; 144 tons of dehydrated vegetables; 38 tons of salt; and 10 tons of cheese. In total, 1,534 tons would be needed daily to keep over 2 million people alive. These figures did not include other necessities, like coal and fuel.

Earlier, in 1945, an agreement was made between all of the powers including the Soviet Union, that three 20 mile-wide air corridors would be established providing access to Berlin. The pact was signed and agreed upon by all the allied powers including the USSR. When the blockade began, the Soviets thought that surely the U.S., Great Britain and France would leave. They were wrong and on June 26, the first American C-47 Skytrain cargo planes landed at Tempelhof Airport, foreshadowing the great operation that was to come. The great Berlin Airlift began.

This great undertaking was commanded by General William H. Tunner and he was known as the "transportation expert to end all transportation experts" by his commander, General Curtis LeMay.

Life for the people of Berlin was very difficult and had it not been for the Airlift, thousands would have died from starvation and disease. One of the most poignant stories to come out of

the Berlin Airlift was that of 1st Lt. Gail Halvorsen, a pilot for the US Air Force. Lt. Halvorsen had a hobby of making home movies and on one of his days off, decided to visit the city he was saving. At Templehof, he noticed, near the end of one of the main Airlift runways, a group of children watching the planes land. He went over to them and started a conversation. They were especially fascinated with him once they found out he was one of the pilots who was flying in their life-giving supplies. He noticed that they did not ask him for handouts of gum or chocolate. He reached into his pocket and found that he only had two sticks of Wrigley's Doublemint gum. He told them that if they didn't fight over it, he would drop some candy to them, by parachute, the next day when he flew over. They were very courteous and distributed the pieces of gum equally amongst themselves. Before he left, one child asked him how they would know it was him when he dropped the candy. He said, "I'll wiggle my wings!" True to his word, the

very next day, on approach to Berlin, he rocked the airplane and dropped some chocolate bars attached to a handkerchief parachute to the children waiting below. Every day, the number of children would increase and he made several more drops. Soon there was a stack of mail at the Base Operations addressed to "Uncle Wiggly Wings," "The Chocolate Flyer," and the "Chocolate Uncle." Eventually he was "called on the carpet" by his commander because some local newspaper reporter published a picture of Halvorsen's plane going by with tiny parachutes trailing it. His commander wasn't happy about it, but General Tunner thought it was just the kind of morale boost that the operation needed. It was eventually dubbed, "Operation Little Vittles!" The "Operation" continued and over three tons of candy was dropped over Berlin; some even landed in the Soviet Sector. For this simple, kindhearted gesture, Halvorsen became the most recognized pilot of the Berlin Airlift.





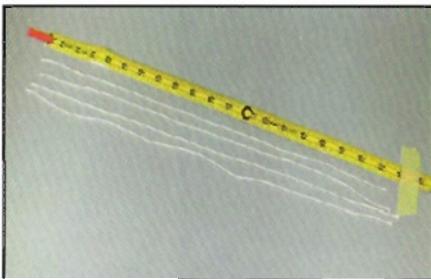
This is a picture of Air Force Colonel, Gail Halvorsen. If a teacher wants to learn more about the Berlin Airlift and its great significance in aerospace history, it is recommended that the following resources be considered:

- Tusa, John & Ann, *The Berlin Airlift*, 1998, Spellmount Limited ISBN 1-86227-044-9
- Halvorsen, Gail, *The Berlin Candy Bomber*, 1997. Horizon Publishers, ISBN 0-88290-616-X. (Mailing address is P.O. Box 490, Bountiful, Utah, 84111-0490.
- Video recommended: "Berlin Airlift, The First Battle of the Cold War," The History Channel, ISBN 0-7670-1166-X (New Video Group, 126 5th Avenue, NY, NY 10011)
- Video recommended: "The Berlin Airlift" (UNAPIX Entertainment Inc., 200 Second Avenue West, Seattle, WA 98119 ISBN 1-57523-571-4 Toll Free- 1.800.245.6742

AND NOW...A Parachute with a Chocolate Cargo!

MATERIALS

- A piece of cloth about the size of a large handkerchief. It can also be made of paper or filmy plastic.
- String will be needed to tie the four corners of the parachute together.
- One candy bar, small or large that can be attached to the parachute.
- Role of masking tape to attach the candy to the parachute.
- A ruler or tape measure for measuring string.

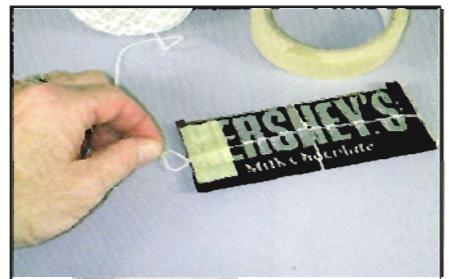


PROCEDURE

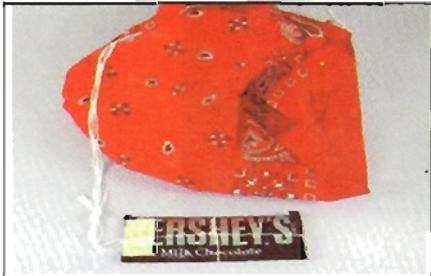
1. Depending upon the size of the parachute you want to make, measure out four equal lengths of household string and cut.



2. One at a time, tie the end of the string to the corner of a square piece of cloth. For this illustration a square bandanna was used.



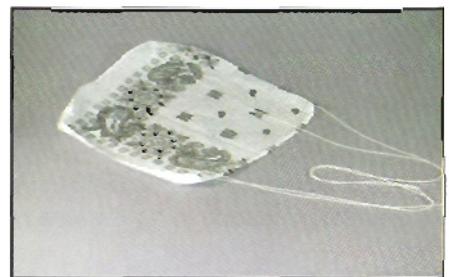
3. The candy bar is wrapped so that the long end will have some extra string available to attach to the parachute. A piece of masking tape was used to hold the string in place to keep the candy from separating when the parachute opens.



4. The four strings (in parachute terms, these are known as shroud lines) should be tied to the candy bar so that each one is an equal length from the attachment point. The parachute is carefully folded with the candy bar on top. When thrown upward, the parachute should open and float gently to the ground.

SMALLER 'CHUTES

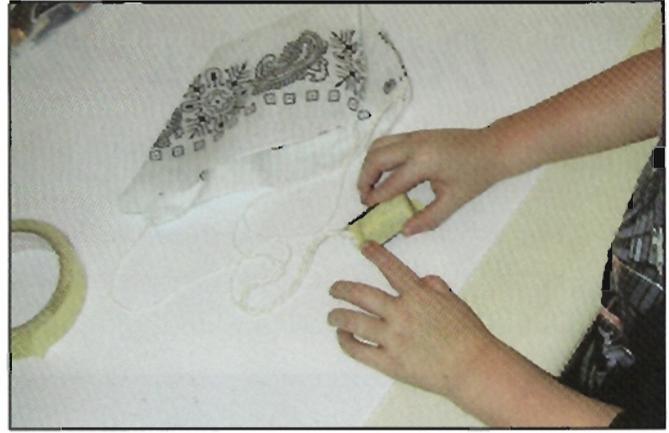
For a classroom exercise, you can make smaller parachutes with miniature candies attached. A square about the size of a normal bandanna works well. The one used in this activity was 12" x 12". The string shroud lines were 24" long and the candy was a Hershey's miniature chocolate bar.



1. A smaller parachute and miniature candies work very well for a class project. The one used in this portion of the activity was 12" x 12" with 24" lines.



2. The candy bar is attached end to end so that it hangs straight down from the parachute.



3. A small piece of tape will help keep the candy from separating from the lines.



Fold the parachute and let the fun begin!

Inquiry and Enrichment-

Ask children to experiment to find the answers to the following questions: (Be sure they understand the words "descent" and "mass")

1. How does the size of the parachute affect its descent?
2. Does the type of material used for the parachute affect its descent?
3. Does the outside temperature affect the descent of the parachute?
4. Does the mass of the object attached to the parachute affect its descent?
5. How does cutting a hole in the middle of the parachute affect its descent?

A children's book has been written about the Candy Bomber. The title is:

Mercedes and the Chocolate Pilot

By Margot Theis Raven

Illustrated by Gijbert van Frankenhuyzen
Sleeping Bear Press,
2002

