

MONUMENT



Learn fascinating facts about the Statue of Liberty and Mount Rushmore. Learn how they were built and what they mean to Americans. Build a model of one for display or gift.



MONUMENT CASTING KIT

Monument

Read directions thoroughly before starting.

These two Eyewitness kits are a fascinating, educational and creative introduction to monuments in America. Mount Rushmore and The Statue of Liberty are two diverse and intriguing monuments that peek the interest of people around the world. Discover why and how these monuments were designed and built. Cast and paint the model. Add magnets to the cast for display on any metal surface. With additional casting material, unlimited casts can be made for gifts for friends and family.

MATERIALS PROVIDED

- Information about Mount Rushmore and The Statue of Liberty.
- Casting (PerfectCast) material to make casts of the monument, PerfectCast is available from your local retailer.
- 1 mold tray containing a monument.
- Instructions explaining how to use the mold tray.
- Paints and paint brush with which to finish each cast.
- Magnets and glue used to attach the monument.
- Suggested reading.

MATERIALS NEEDED

- Disposable container to mix PerfectCast. A can or paper cup will work nicely.
- Mixing utensil.

WARNING: Don't place hand in casting material while it is hardening. Don't pour excess material into drain or toilet bowl. Dispose of excess material in garbage.

Adult supervision suggested

INSTRUCTIONS

Find an area with a flat, level, stable working surface, such as a counter-top, desktop or table. Make sure the surface is waterproof; some excess water may spill out of your container. Use a disposable container to mix the PerfectCast and water.

1. Place the mold tray on a flat, stable surface.
2. In a disposable container, mix PerfectCast using a ratio (by volume) of 1 part cold water to 3 parts PerfectCast. *See tip below for suggestion on estimating the amount of PerfectCast to use for your cast.*
3. Stir the PerfectCast/water mixture with a spoon or mixing stick until it is evenly mixed (about 1½ minutes). Tap the container on the table several times to remove air bubbles. There should be no lumps.
4. Pour the PerfectCast mixture into the mold. Tap the mold on the work surface to remove the remaining bubbles.

WARNING: Do not pour excess material into the drain or toilet bowl. Dispose of excess materials in the garbage.

5. Let PerfectCast set for 30 to 40 minutes. If the object is delicate, allow at least one hour before demolding.
6. After the mixture hardens, carefully press each part out of the mold. If a section should break, use glue to repair it or cast additional sections.
7. Read the information about monuments.
8. Let the cast dry for 2 hours before painting. Consult color suggestions for painting the casts. Separate the paint pots from each other with sissors before painting. Your kit comes with one of two possible assortments of paint colors. One assortment includes an attached glue pot labeled GL, the other assortment has a separate glue packet. Adding a small amount of water to the paint will thin it for easier application as well as insure enough paint to cover the complete item.
9. Using the guide in the back of this booklet, glue the magnets on animals or glue the animals on a background of your choice.

Tip: How to measure the volume of the objects to be cast.

If you have purchased additional PerfectCast or don't want to mix all the PerfectCast included in your kit, follow the instructions below to determine how much PerfectCast to mix.

Fill all the cavities you intend to cast with water and pour into a measuring cup. This is the total volume of the finished casts.

For each fluid ounce needed, mix 1½ fluid ounces of PerfectCast and ½ fluid ounce of water. The mixture should have a consistency of a runny milkshake or melted ice cream.

MONUMENT

A monument is a structure created to commemorate and help us remember and reflect on individuals or events that have earned a place in history.

The Skullduggery Eyewitness Kits "Monument – Mt. Rushmore" and "Monument – Statue of Liberty" are exciting, creative activities that combine hours of fun while learning about the history and the creation of two of our nation's most amazing monuments. This kit includes one mold to cast one of these very famous and beautiful monuments. Along with a mold of one of these wonderful monuments, this kit includes paints, glue, a paint brush, and magnets to glue on the back of the monuments for display on a refrigerator or other metal surface.

THE STATUE OF LIBERTY

Overall height- 305 ft, 6 in

Statues height – 111 ft, 6 in

Height of face - 8+ feet

Dimensions of tablet - 23 ft. 7 in tall, 13 ft 7 in wide

Weight of Statue – 225 tons

Crown spikes – 9 ft long; 150 lbs each

Exterior copper 3/32 inch thick (less than the thickness of 2 pennies)

Green color from weathering of the copper

In 1865, Eduard de Laboulaye of France proposed that his country honor the United States with a special gift for America's 100th anniversary of the Declaration of Independence. It was proposed that France create a statue

dedicated to liberty and given to the United States in honor of the friendship the countries shared. It was decided that The Statue of Liberty was to be designed and created by sculptor Frederic-Auguste Bartholdi. It was also decided that the United States would build the base on which the statue would stand.

Bartholdi came to America to find a site for the statue. As he sailed into New York Harbor, he realized that every ship that sailed to America would pass by Bedloe Island and that this was the perfect site on which to put the statue. Bedloe Island was 12.7 acres and was situated south of the tip of Manhattan at the point where the Hudson River empties into the Atlantic Ocean.

To begin the creation of the statue, Bartholdi made the original 4 foot model from plaster. It depicted a woman in robes holding a tablet in her left arm and a torch held high in her right hand. After taking measurements with calipers he proceeded to enlarge that model first to 9 feet and then to 36 feet. This 36 foot model was then divided into 300 pieces that were each, in turn, enlarged four more times. These sections were recreated in wood and then each was covered by a thin layer of copper which was pounded to conform to the original shape. These thin copper pieces were then riveted together.

Copper alone would not be strong enough to withstand the statue's weight so Gustave Eiffel (the creator of the Eiffel Tower) engineered and designed an iron skeleton to support the weight of the lady. The copper "skin" would then be attached to the iron skeleton that was positioned on the inside.

The construction of the statue was completed in France in July 1884. It was then disassembled into 350 pieces and placed in 214 crates for transport by ship to America.

Meanwhile in America, architect Richard Morris Hunt was commissioned to design and build the pedestal on which the statue would stand. He cleverly designed it to be put into Fort Wood, the existing fortress on Bedloe Island. The pedestal was 154 feet tall, made of concrete and covered with granite.

The pedestal was not completed until after the statue arrived in America. The building of the pedestal was delayed because of lack of financing. After it was finally completed, the pieces of the statue were re-erected on the pedestal and by October 28th ,1886, the Statue of Liberty was in her final resting place for all to admire.

The interior of the crown used to be open to visitors. There were 354 steps inside the pedestal and statue which lead up to the statue's crown. In the base of the crown there are 25 windows that provide a grand view of the New York Harbor. The crown consists of 7 spikes representing the 7 seas and continents of the world. The torch she is holding in her right hand signifies enlightenment. The tablet she is holding represents knowledge and has the date of the United States Declaration of Independence, July 4th, 1776 printed in roman numerals. It reads July IV, MDCCLXXVI. Her left foot is trampling broken shackles at her feet, signifying the United States' wish to be free from oppression and tyranny.

The interior of the pedestal contains a bronze plaque inscribed with a poem by Emma Lazarus. This poem ends with these very famous lines:

*Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore,
Send these, the homeless, tempest-tossed to me,
I lift my lamp beside the golden door!*

The Statue of Liberty stands for freedom and welcomes all who come by way of ship. Many ships have brought millions of immigrants to America and Lady Liberty was there to welcome all!

MOUNT RUSHMORE

Doane Robinson, founder and superintendent of the South Dakota Historical Society, believed South Dakota needed something special to attract travelers to his beloved state. In 1923 he came up with the idea of carving images of romantic western frontier heroes into an area of the Black Mountains. This particular area was called the Needles, named for the towering spires, needle-like clusters of granite in the mountains. When Robinson revealed his dream to leaders of South Dakota state, they agreed it would be great for South Dakota.

To accomplish this enormous project they turned to sculptor, Gutzon Borglum who was in the middle of sculpting an image on a mountain in Georgia. His carving project in Georgia ran into funding and philosophical problems so he was more than happy to turn to this new project in South Dakota.

Borglum toured the Black Hills to survey the site where Robinson had hoped to have the frontier heroes carved, the Needles.

Upon inspection, Borglum determined that this area was not suitable for sculpting. The granite in the Needles area was too brittle to carve successfully. Instead, he chose a site with an expansive granite wall that faced southeast, giving the carvings the best exposure to sunlight. Borglum was not too keen about the subjects that Robinson wanted sculpted. He felt the characters on Mount Rushmore should be national heroes, not just regional western heroes. He felt strongly that they should symbolize the founding, growth, preservation and development of this great country. He chose George Washington who represents the founding of the nation. Thomas Jefferson was chosen to represent the growth of the nation that doubled in size during his presidency, and shaped the growth of the country's spirit and philosophy through his writings of the Declaration of Independence. Abraham Lincoln was chosen because he represents preservation, because of his ability to keep the nation together in spite of a Civil War. Borglum picked Theodore Roosevelt who he felt represented development, because he opened up national growth to world trade by opening up the Panama Canal.

Funding for this project was a problem. There was no money to start the project until President Calvin Coolidge visited South Dakota with his family on vacation. He became so enamored of that state he enthusiastically endorsed the project and encouraged the financing for the sculpting of Mount Rushmore.

Borglum created a model of the four presidents and used it to sculpt the faces in granite. One inch on the model translated to one foot on the face of the mountain. A protractor was used to translate inches from the model on the ground to multiples of 12 (one foot) on the mountain.

The work began on October 4th, 1927. Rough steps had been built up the mountainside and on that day, 16 men went up the mountain with a large diesel engine and two air compressors.

Funding was not the only obstacle to be overcome during the completion of this enormous project. Weather was a big factor in its completion. The harsh South Dakotan winters proved nearly impossible to sustain work through the years.

Over the six and a half years of construction, four hundred men worked on the mountain. Borglum taught the men how to use dynamite and other treacherous tools while they hung hundreds of feet in the air. Using dynamite,

the men carefully blasted away the granite to the shape of the four presidents. 90 percent (450,000 tons) of the rock was removed by dynamite. The other 10 percent was removed by drilling a series of closely spaced holes to exacting depths. The rock between the holes were then chiseled carefully away leaving a smooth surface.

Borglum died in 1941. His son continued working to finish the monument to its current form. The faces of the presidents are as high as a six story building, towering 5,500 feet above sea level. Each of their eyes are 11 feet across, their mouths 18 feet across and each nose 20 feet long!! Borglum designed a spike in the eyes of each president to make the eyes seem to be twinkling from a far.

Mount Rushmore has proven to be a great attraction for travelers from all over the world. It has put South Dakota on the must-see map for tourists, just as Robinson had envisioned many years ago.

SUGGESTED COLOR SCHEMES

Statue of Liberty

1. First paint the statue either black or dark green.
2. Mix green and white for a lighter color and lightly brush it on the cast. Cover most of the statue, but leave the crevices show some of the darker paint. This will give the statue more depth.
3. Paint the torch either yellow or gold.
4. With a fine black pen, write July IV, MDCCLXXVI on the tablet.

Mount Rushmore

1. First paint the cast black.
2. Mix black and white to make gray and lightly brush it on the cast. Cover most of the statue, but leave the crevices show some of the darker paint. This will give the statue more depth.

SUGGESTED READING

Curlee, Lynn. *Mount Rushmore*. New York: Scholastic Press, 1999.

Dupre, Judith. *Monuments: America's History in Art and Memory*. Random House, New York. 2007.

Gabriel, Luke S. *Mount Rushmore: From Mountain to Monument*. The Child's World, Inc. 2000.

Hochain, Serge. *Building Liberty: a statue is born*. National Geographic Society. Washington D.C. 2004

St. George, Judith. *The Mount Rushmore Story*. New York: G.P. Putman, 1985.

Wilson, Jon. *The Statue of Liberty; a beacon for freedom*. The Child's World. 1999.

COLOR MIXING GUIDE

Kits come with different sets of colors depending on the title of the kit. Mixing instructions may include colors not included in your kit.

Acrylic paints can be thinned with water if they get too thick. Be sure to clean brushes with soap and water before the paint hardens or the paint will become permanent.

Primary colors can be mixed to obtain many other colors. Mix a small amount of two or more colors on a non-absorbent surface.

Always begin with more of the lighter color and a small amount of the darker color. To darken or lighten colors, add small amounts of black, brown or white and mix. Take your time and allow the paint to mix thoroughly before adding more paint.

- White skin - add small amounts of red and yellow to white
- Black/brown skin - add small amounts of white, yellow, red & black
- Army green - mix blue and yellow and a small amount of black
- Ammonite green - mix blue and yellow and a small amount of white
- Carmel - mix small amounts of brown and yellow to white
- Tan or beige - add small amounts of red, brown and yellow to white
- Brown - mix black, yellow, red and green
- Orange - add small amounts of red with yellow
- Gray - mix small amounts of black with white
- Pink - mix small amounts of red with white
- Purple - mix red and blue
- Gold - mix small amounts of yellow with silver
- The pot labeled GL is glue
- Some kits come with a pot labeled ST. This is stain that can be used to antique your creation after painting. Paint on and wipe off.

Download other Kit brochures at: <http://skulldugger.com>

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