

# Classroom Activities

## Table of Contents

- **How Abram Belskie Made Medals –**  
Illustrated outline to accompany the text in the brochure  
by D. Wayne Johnson by the same title
- **Classroom Activity: Make a Medal**
- **Cold Resin Casting Process**  
Outline to be used with accompanying DVD
- **Physical Science Mini Lesson**  
Observation learned from Cold Resin Casting process
- **Symbols & Ideas in Medals**  
Example: *50<sup>th</sup> Anniversary of Brookgreen Garden, 1981*  
by Abram Belskie
- **History in Medals**  
Example: *Frederick Douglass Medal, 1969* by Abram Belskie

## **Classroom Activities**

- **How Abram Belskie Made Medals**
- **The Brookgreen Gardens Medal**
- **Cold Resin Casting**
- **Classroom Activity: Make a Medallion**
- **Classroom Activity: Physical Science**

## How Abram Belskie Made Medals

by D. Wayne Johnson



Based on the medal

Abram Belskie

Frederick Douglass Medal, 1969

*from the American Negro Commemorative Society Series*

Silver, 1 1/2 " in diameter

Belskie Museum of Art, N.J. 1993.114

(front)

## How Abram Belskie Made Medals (continued)



Based on the medal

Abram Belskie  
Frederick Douglass Medal, 1969  
*from the American Negro Commemorative Society Series*  
Silver, 1 1/2 " in diameter  
Belskie Museum of Art, N.J. 1993.114

(back)

## SKETCH

**Ideas for medals** are first sketched using images and lettering based on the life of Frederick Douglass (1817-1895). The artist has to make two designs for the two sides of the medal and the designs need to relate to each other.



Preliminary sketch for the obverse (front)



Preliminary sketch for the reverse (back)

## BACKGROUND PLATE

Next, the artist worked on a background plate.

The plaster background plate (about 12-14 inches), is larger than the finished coin so that the artist can work on all the details. He often traced his designs from his preliminary sketch by using carbon paper or drawing the design in pencil.



**A**

**A**

Modeling the design on a background plate made of plaster.

The artist would add clay to the background, model the figures and letters, and carve details in the clay and background plate.

**B**

Example of a plaster cast made from a clay model which is called a negative cast.

The artist would coat the clay with liquid Shellac, a resin that seals the plaster), then apply a release agent so the cast can be removed after it hardens. He would make a mold box using a metal strip so that the Plaster of Paris would not seep out. Plaster of Paris would be mixed with water creating a thick liquid that he would pour slowly over the clay model in the mold box. The plaster cast is separated from the original model and baked in an oven to make sure it is dry and hard. The picture illustrates the negative cast that he would carve the plaster to make the letters and numbers sharper and work on the details of the figure's head.

**C**

Example of a positive cast created by pouring Plaster of Paris into the negative relief mold to create a positive. This is a picture of the back of the medal.

# CASTING

Blank Planchet  
– bronze

1<sup>st</sup> Strike by the  
metal die \*\*

2<sup>nd</sup> Strike by  
the metal die

3<sup>rd</sup> Strike by the  
metal die



4<sup>th</sup> Strike by the  
metal die

Trimmed medal  
(planchet)

Oxidized medal

Polished medal  
which produces  
contrast to the  
modeling relief

Frank Eliscu

Nelson A. Rockefeller, Vice President Inaugural Medal, 1974

*Process Set*, bronze, 2 ¾ inches

Collection of James K. Brandt

\*\* **Note:** the bronze spreads out on each successive strike.

The completed plaster models are then sent to a foundry or mint that specializes in coin and medal casting. Using a pantograph (or now a computer program), they reduce the design to standard size: 1 1/2 to 3 inches in diameter for a medallion. They create metal dies that are used to strike the medallion in bronze or silver.

The image above shows the steps in creating a bronze medallion. The metal die strikes the bronze four times to achieve high relief and fine details, then the bronze is glazed and polished to bring out the details.

## RESOURCES

Making Coins (or medallions)

<http://www.usmint.gov/kids/coinNews/mintingProcess>

<http://www.moneyfactory.gov>

<http://www.money.org>

## The Brookgreen Gardens Medal (front)

### SYMBOL: ARTIST

Anna Hyatt Huntington (1876-1973)  
American sculptor. She holds a mallet and chisel which represent the tools of a sculptor.

### COMMEMORATION: DATES

Commemorate the anniversary with the dates.

YELLOW JESSAMINE  
State flower of South Carolina



CAROLINA WREN  
The state bird of South Carolina

NAME OF THE INSTITUTION  
Brookgreen Gardens, Murrells Inlet,  
South Carolina. First sculpture  
garden in the United States

MOTTO  
Brookgreen Gardens is a  
quiet joining of hands  
between science & art

Brookgreen Gardens Medal, 1981  
<http://www.brookgreen.org>

MINTING MARK

## The Brookgreen Gardens Medal (back)

### SYMBOL: TREES

"Live oaks with Spanish moss."  
Planted in 1700 when the land was a rice plantation

ARBORETUM  
Purpose of the institution



LANDSCAPE  
The terrain is the sandy soil of the South Carolina coast

PALMETTO TREE  
State tree of South Carolina

AMERICAN BALD EAGLE  
Indigenous to the area

Brookgreen Gardens Medal, 1981  
<http://www.brookgreen.org>

# Cold Resin Casting

MOLD BOX

POSITIVE CAST RESIN MODEL WITH FLASH REMOVED



SILICON MOLDS

FLASH AROUND THE EDGES

PAINTED AND GLAZED METALS

## Classroom Activity: MAKE A MEDALLION

### OBJECTIVE

To create a medal or medallion using the **Cold Resin Casting** method.

### RESIN CASTING

*Resin casting is a medal-making process where a silicon rubber mold is filled with a liquid synthetic resin that quickly hardens. Synthetic resin—usually polyurethane—mixed with a curing agent is poured into the mold cavity. Mixing the two liquid parts causes an **exothermic reaction** which generates heat, and within minutes, causes the material to harden, yielding castings or copies in the shape of the mold in which it has been poured. This method is used in dentistry and the fabrication of toys and models as well as small-scale jewelry production. Students can make individual medals or it can be a group activity in which one mold is created and cast 25 to 100 medals can be cast, individually painted, and embellished.*

### SUPPLIES

Paper, pencils, pieces of cardboard, wood, or Styrofoam, clay, masking tape, molding rubber (see resources), toothpicks or coffee stirrers, casting resin (see resources), file or sandpaper, acrylic paint, glazes or sealant (see resources), brushes

### RESOURCES

See the attached diagrams, video, and essay, “How Abram Belskie Made Medals” in the Teachers’ Kit.

Modeling Clays or Plastilina Clay

<http://www.dickblick.com/categories/modelingclays/>

[http://www.utrechtart.com/Sculpture-Supplies/Clay/Modeling\\_Clay.cfm](http://www.utrechtart.com/Sculpture-Supplies/Clay/Modeling_Clay.cfm)

[http://www.teacherstorehouse.com/product\\_search.asp?order\\_key=&track=&submit=TRACK&term=modeling+clay](http://www.teacherstorehouse.com/product_search.asp?order_key=&track=&submit=TRACK&term=modeling+clay)

Liquid Silicone Rubber and Resin for Casting

<http://www.micromark.com/> (#82083, #81544) \*\* meets MSDS Standards

<http://www.hobbycast.net/>

<http://www.smooth-on.com/>

Mold-making

<http://mold-making.com/>

## **Classroom activity: MAKE A MEDALLION (continued)**

### **1. INTRODUCTION**

Use the brochure, attached diagrams, and video in the Teachers' Kit to introduce your students to the art of medal-making.

### **2. BRAINSTORM**

Ask your students to choose a subject for their medallion. Subjects might include an emblem such as the state tree, flower, or animal; a person they admire in their family, school, or community; a portrait of a friend or a self-portrait. Have students include some information about their subject, such as names or dates.

### **3. SKETCH**

Ask students to create a sketch of their subject on paper and include the text and/or numbers. The sketch can be traced onto a sturdy flat surface such as cardboard, wood, or styrofoam. Students could also make their sketch directly on this surface. **The medallion term for this process is Background Plate**, which was traditionally made of plaster.

### **4. MODEL**

Use clay to create a three-dimensional model from the sketch.

**TIP:** Ask students to make a one-sided medal. We suggest using a traditional medallion size, three to four inches in diameter.

### **5. MOLD BOX**

A mold box is the container that holds the molding rubber. The box requires a bottom to set the model, sides to contain the liquid rubber as it is poured, and enough openings in the top to allow the rubber to be poured in and to let the air out so there are no voids or bubbles on the surface of the mold. Make mold boxes (approximately 4" x 4") of Styrofoam and tape.

### **6. MOLDING RUBBER**

Molding rubber is very fine-grained liquid silicone rubber. The rubber consists of two liquid parts. When it is time to make the mold, the two parts are mixed together and poured over the model. The mixing should be done slowly and carefully so that bubbles do not form in the mixture. A wooden toothpick or coffee stirrer can be used to remove bubbles that do form. The rubber cures to a flexible mass in about four hours. The rubber will actually adhere to itself at any time. That is why mold release compounds such as liquid silicone are used, to prevent the rubber from bonding to itself in places where it is not supposed to bond.

### **7. FLASH**

This is the term used to describe the thin unwanted sections that inevitably leak out of the rubber mold or around the finished cast piece. Flash should be trimmed away with scissors, a hobby knife, file, or sandpaper.

### **8. CASTING**

Casting resin is two-part epoxy, usually described as a resin and hardener. It can often be obtained as two liquids that are mixed together when a cast is desired, although it is also available as two pastes that are kneaded together in order to harden. The finished resin can be clear or colored with pigments when it is mixed. It can have hardening (curing) times from a few minutes to several days, depending upon the strength and chemical resistance required.

### **9. FINISH**

Paint and add glazes or a sealant

## Classroom Activity: PHYSICAL SCIENCE

### OBJECTIVE

To explore **exothermic** and **endothermic** chemical reactions.

All chemical reactions start with the reactants having some form of energy potential that results in the joining of two material's molecules and forms a new product. The most common form of energy is heat. The chemical reaction will cause the blended mixture to give off heat or absorb it.

*ENDO* means to draw into

*EXO* means to give off

**ENDOTHERMIC** - energy is drawn from external environment causing the surroundings to lose heat or to "cool down." For example, melting ice. In order for ice to melt it needs to draw in heat from its surroundings.

**EXOTHERMIC** - chemical reactions cause their surroundings to warm up by giving off heat. An example is lighting a match. When the head of the match is struck, it results in the release of stored energy from the reactants into the surroundings.

### RESOURCES

<http://www.lessonplanet.com/search?keywords=endothermic+vs.+exothermic&rating=3>

Lesson Planet's teacher-reviewed lessons about endothermic and exothermic chemical reactions.

## Classroom Activities

### History in medals

#### Objective

Traditionally medals and coins convey history of a country, an event or person. Using the Frederick Douglass medal we can see that the artist interpreted On the reverse side many historical events that relate to Frederick Douglass life and American History – pre and post civil war are illustrated. (see pages 2-3 and sketches with notes on pages 4-5)

### Biography

#### Frederick Douglass (1817-1895)

A prominent American who had many careers during his lifetime: Abolitionist leader, orator, journalist, writer and diplomat that changed the course of American history. As a political leader he advocated full civil rights for all men and women, be they black or white.

Born into slavery in 1817 under the name Frederick Augustus W. Bailey in Easton, Maryland. From 1824-1836 is employed by 4 masters as a slave. He is taught to read in 1828 by Sophia Auld, the wife of Captain Thomas Auld . It was considered unlawful for a slave to read or write at the time.

Reading and writing would be his path to freedom sharing his knowledge with fellow slaves in clandestine Bible schools. In 1838 he successfully escapes to New York and changes his name to Douglass. While living in New Bedford, Massachusetts, he begins speaking out against slavery as an agent for Massachusetts Anti-Slavery Society. He writes and publishes his first book Narrative of the Life of Frederick Douglass, 1845 and flees to London to avoid being imprisoned as a slave since he reveals his identify. His friends raise \$701 dollars to purchase his freedom from his slave owner which enables him to return to the U.S., a free man. He publishes the newspaper titled The North Star, one of the few African-American antislavery newspapers in the U.S. from 1847-1860. At Seneca Falls, N.Y. Women's Convention in 1848 he publicly seconded Elizabeth Cady Stanton's highly controversial motion for the right of women to vote. He continues to speak out for equal rights for both men and women through this movement for over 21 years. With the passage of the Fugitive Slave Act in 1850, he becomes involved in the Underground Railroad. Recruited troops for the Massachusetts 54<sup>th</sup> Regiment, first Northern African American unit of soldiers. Accepts the post of American Consulate to Haiti from 1889-1891. Dies in Washington, DC in 1895.