Unity in Variety: The Works of Morton C. Bradley, Jr.

A Teacher's Guide

What is University Collections?

University Collections supports the stewardship of IU's diverse collections in the arts, sciences, and humanities that are housed on all IU campuses. In the McCalla Building, University Collections provides space for exhibitions, events, collaboration between collections, and teaching opportunities.

The exhibitions at McCalla have objects from Indiana University's collections located across the state, not just collections in Bloomington!

University Collections ensures that IU's collections are taken care of for current and future generations.

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Introduction

The *Unity in Variety* Teacher's Guide is a set of activities that teachers in elementary, middle, and high schools can use with their students as they explore the exhibit. Activities in this guide align with Indiana Academic Standards for Math and Visual Arts.

Each activity allows students to explore geometric shapes and the art behind geometric sculptures like the ones Morton C. Bradley Jr. made. He created these sculptures to show how geometry and color can work together to create art.

Objectives

1. Students will **identify properties** of 2-D and 3-D geometric shapes.
2. Students will **recognize** 3-D shapes within the exhibit and the gallery space.
3. Students will **understand** the difference between 2-D and 3-D geometric shapes.
4. Students will **reflect** on the **artistic process** of Morton C. Bradley's structures, through drawing and creating their own geometric structures.

Geometry Vocabulary

- **Polygon**: A closed, planar figure (two dimensional) with at least 3 straight sides and angles.

Root words:	
poly	many
gon	angle
poly + gon	many angles

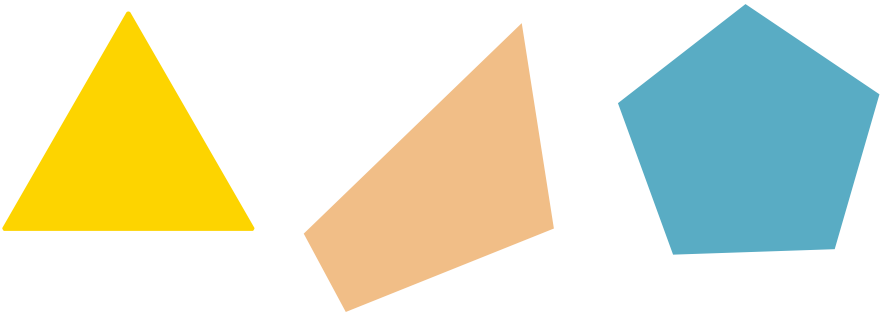
Triangle: A polygon with 3 sides.

Quadrilateral: A polygon with 4 sides.

Pentagon: A polygon with 5 sides.

- **Polyhedron**: A three-dimensional object composed of polygonal surfaces.

Root words:	
poly	many
hedron	face
poly + hedron	many faces



Geometry Vocabulary

- **Platonic Solids**: Any of the five geometric solids whose faces are all identical, regular polygons meeting at the same three-dimensional angles.
  -  Tetrahedron: A polyhedron with 4 triangular faces
  -  Cube: A polyhedron with 6 square faces
  -  Octahedron: A polyhedron with 8 triangular faces
  -  Dodecahedron: A polyhedron with 12 pentagonal faces
  -  Icosahedron: A polyhedron with 20 triangular faces

Art Vocabulary

- **Artistic Processes**: The cognitive and physical actions through which arts learning takes place.
- **Artwork**: Artifact or action that has been put forward by an artist or other person as something to be experienced, interpreted, and appreciated.
- **Creating**: Conceiving, making, and developing new artistic ideas and work.
- **Technologies**: Tools, techniques, crafts, systems, and methods to shape, adapt, and preserve artworks, artifacts, objects, and natural and human-made environments.

Dodecahedron Activity

What is a dodecahedron? As shown in *Unity in Variety*, a dodecahedron is a polyhedron, or multi-sided three-dimensional shape, with 12 pentagonal faces. This activity allows your students to make their own dodecahedron!

Materials Needed

- "Build-Your-Own-Dodecahedron" activity sheet
- Scissors
- Glue
- Tape
- Coloring pencils, pens, and/or crayons

Dodecahedron Activity

Instructions

1. Give each student one activity sheet.
2. Have students color the shapes.
3. Instruct them to cut along the dotted lines; assist the students as needed.
4. Next, students will carefully fold the solid lines.
5. Glue or tape the folds as instructed on the sheet; the 2-D shape becomes a 3-D one!
6. Have students show their 3-D creations and have a discussion on geometric shapes and the colors they used.
7. Optional: for step three, a student can count the sides and number of shapes if they do not wish to cut out their shape.

Geometry Scavenger Hunt

For this activity, students will participate in a fun scavenger hunt within the Unity in Variety exhibit and the adjacent gallery space.

Take this opportunity to discuss what 3-D structures are visible in Bradley's work!

Discuss what geometric shapes students see in their everyday lives. Rectangles, triangles, cones, etc. are around us all the time if we look closely!

Geometry Scavenger Hunt

How many **polyhedrons** with star shapes can you find?

How many orbit rings does the piece *Orbits* have?

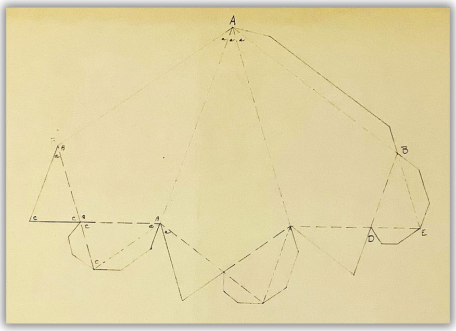
Can you find a sculpture with 11 overlapping **tetrahedra**?

Can you point out the all-white geometric sculptures? How about the one shaped like a **cube**?

Can you find and list the 8 colors in Bradley's *Picasso*?

Can you find a sculpture made of **dodecahedra** and **icosahedra** structures?

Draw Your Own Sculpture Prototype



What inspires you to make art?

What **technologies** do you use when you **create** something?

Have your students look at the "Tools and Process" displays, located against the wall opposite the doorways, in the *Unity in Variety* exhibit before starting this activity.

Ask students what they think of the specific tools and **artistic processes**. This discussion will lead into them drawing their own sculpture prototype.

Draw Your Own Sculpture Prototype

Materials Needed

- Blank pieces of paper
- Coloring supplies such as pens, pencils, and crayons

Instructions

1. Hand a piece of paper to each student, along with coloring supplies they choose.
2. Tell them to draw a shape that is like one of the many in the exhibit and gallery space. Instruct students to choose shapes they like or shapes that inspire them.
3. Instruct students to color their shapes, thinking about how Bradley colored his shapes.
4. Once everyone is done, do a show and tell. Ask students why they chose the colors they did, what their shape is, and why.

Academic Standards

Mathematics

- K.G.1, K.NS.1
- 1.G.1
- 2.G.1
- 3.G.1
- 4.G.1, 4.G.2, 4.G.3
- 6.GM.3
- 7.GM.1
- G.TS.3

Visual Arts

- Anchor Standard 1
- Anchor Standard 2
- Anchor Standard 3
- Anchor Standard 6
- Anchor Standard 7
- Anchor Standard 8
- Anchor Standard 9

About the Artist

Morton C. "Bob" Bradley Jr. was born in Massachusetts in 1912 and spent most of his life in the rich cultural atmosphere of Harvard University in Cambridge. His family's roots, however, were in another university town - Bloomington, Indiana.

Bradley's great-grandfather, Theophilus Wylie, was cousin to Andrew Wylie, the first president of Indiana University. The two were among only four professors on the faculty of Indiana University before 1850. Theophilus Wylie pursued both science and art: He taught applied mathematics, natural philosophy, and chemistry, and he was an amateur painter. Theophilus also served IU as acting president and as the school's librarian.

After Andrew Wylie's death, his widow sold their home to Theophilus and his wife, Rebecca Wylie, who raised their daughter there. This daughter, Elizabeth Louisa Wylie (Morton Bradley's grandmother) grew up in Wylie House, which is today a historic house owned by Indiana University.

About the Artist

When Morton Bradley Jr. was eight years old, his mother taught him to draw animated cartoons, and when he was twelve, she taught him to paint, His grandmother, Elizabeth Louisa Wylie Boisen, taught drawing in the Bloomington schools, and she encouraged her grandson's interest in art during their frequent visits. With his family nurturing his creativity, Bradley continued to draw and paint his whole life. The young Bradley also studied piano.

When Morton was ten, his family moved into a home in the Boston suburb of Arlington, where he led a quiet, contemplative life for the next eighty-two years. He lived at home during his college days, but he traveled to Europe as part of his education and employment as an art restorer, gaining an international perspective. He never married, filling his life with art, books, music, and his many friends. In addition to his lifelong pursuit of painting, in midlife Bradley took up making sculptures of geometric forms, painting them with harmonious planes of color.

Additional Collections

Morton C. Bradley Jr.'s work is represented across Indiana University! Consider adding these stops to your field trip or evaluating these additional resources to supplement your lesson plans.

Wylie House Museum

- Home of Bradley's family. Some Bradley sculptures on display in the Education Barn.
- For more information: https://libraries.indiana.edu/wylie-house-museum

Eskenazi Museum of Art

- *Tree* on display in the Works on Paper wing.
- The collection contains several paintings Bradley has conserved, as well as his original paint samples.
- For more information: https://artmuseum.indiana.edu/

Luddy School of Informatics, Computing, and Engineering

- Three Bradley sculptures on display in lobby.
- For more information: https://luddy.indiana.edu/about/facilities/index.html

Resources

Information about McCalla

go.iu.edu/4PZF

Indiana Academic Standards

bit.ly/INAcSt

Exploring More

Check out University Collections' digital tour of the exhibit here!

bit.ly/IUBradleyexhibit