

**Title** Resist Dyeing with Indigo **Dates** 9/23/2023 **Grade** 9th-12th

**SC College- and Career-Ready Standards for Visual and Performing Arts Proficiency (2017)**

Standard 2: I can use different materials, techniques, and processes to make art.

Standard 6: I can identify and examine the role of visual arts through history and world cultures.

**Objectives**

1. After the demonstrations, students will create indigo dyed fabric pieces with attention to pattern and a proficient level of craftsmanship.
2. After the video, students will define the role of indigo dye in world history and South Carolina history in a proficient manner.
3. After the demonstration, students will define the terms “resist” and “reduction” in relation to indigo dyeing in a proficient manner.

**Materials**

- Indigo Dye Kit (includes indigo powder, resist blocks, craft sticks, rubber bands, soda ash, sodium hydrosulfite)
- Rubber Gloves
- Other resist tools: marbles, clothespins
- 5 gallon bucket with lid and stir stick
- White cotton fabric piece for each student (t-shirts, tote bags, bandanas, etc would also work)
- Drop cloths for dyeing and drying tables
- Clothesline for drying

**Procedures**

4. Preparation: Prepare indigo dye in bucket at least an hour before students arrive:
  - Add indigo powder to 4 gallons of warm water and gently stir
  - Add soda ash and stir (creates alkaline environment needed to dissolve indigo)
  - Add sodium hydrosulfite and stir (removes oxygen, allows indigo to bond to fiber)
  - Cover and let sit. As the indigo enters a state of reduction, it will turn from blue to neon green and leave a film on top.
5. Hook:
  - Test out the dye before class and hang up your examples to inspire students as they walk in!
  - Play [this 5 minute video](#) for students and write the following questions on the whiteboard for them to consider as they watch:
    - What countries’ cultures have been influenced by indigo dye? (Ex: India, Japan, Taiwan)

- In what ways were indigo dyed fabrics historically used around the world? (Ex: protective talismans, status symbol, restorative properties)
  - In what ways are indigo dyed fabrics used today? (Ex: fashion, modern art)
6. Discussion: With the students' help, Create a list on the whiteboard of student answers to assess their knowledge, then discuss the history of indigo as a cash crop in South Carolina ("where was Indigo a big deal closer to home that wasn't mentioned in the video?").
  7. Explain Expectations:
    - Introduce the project (dyed fabric pieces) and show examples
    - Define student goals for the project: put effort into creating pattern, have even color throughout, and do at least 2 dips
  8. Demonstration: Students gather around a central table. Demonstrate 4 different methods of using tools to create resist (or areas of the fabric where dye cannot go) as explained in [this video](#).
  9. Transition: Students receive their fabric pieces and write their initials on the corner for easy identification.
  10. Studio Time: Students create resist/tie up their fabrics and put them in the sink with warm water (to soak while they watch the next demonstration).
  11. Demonstration: demonstrate the dyeing process.
    - Students will soak their fabrics in warm water for 15 minutes before dyeing, so I have some samples already soaked and ready to go.
    - I show students the vat and explain that the indigo must be in a state of reduction (no oxygen) for the dye to take hold
    - Put on rubber gloves, dip the indigo in gently for 15 seconds, pull it out and let it drip into your hand (not the vat), then lay it out for about 5 minutes for it to oxidize (turn from green to blue). Then students can go in for a second dip.
  12. Studio Time: students whose fabrics are tied up and soaked may dye their fabrics.
    - Multiple students can use the vat at once
    - Watch the vat to help students who may need help and keep track of the timer.
    - Dyed fabrics are laid out on a table covered with a drop cloth between dips
    - After the fabric has been dipped twice and allowed to soak for 5 minutes, students can open it up, place the resist tools in a designated area, and let the fabric oxidize for longer if necessary.
    - Students gently rinse the fabric in warm water and hang it up to dry on the clothesline.
    - Students who are finished dyeing may either help their peers who are still tying their fabrics, or work in their sketchbooks.
  13. Cleanup and Assessment:
    - Students work together to put resist tools back, hang up any stray projects, and wash dye off rubber gloves
    - Pass out exit slips to each student with the following questions for assessment:
      - Name at least 2 countries whose cultures have been influenced by Indigo dye.

- Name at least 2 ways indigo dyed fabrics were historically used around the world.
- Name at least 2 ways indigo dyed fabrics are used today.
- How did Indigo influence South Carolina's history?
- What is a resist?
- What does it mean when the indigo dye is in a state of reduction?

*Depending on the length of the class period, this lesson may be split up over multiple classes if needed: the first being tying the fabric, the second dyeing. Dried and finished projects can be taken home and laundered normally.*

### Assessment Rubric

	Exemplary	Proficient	Basic	Below Basic
Technique	Student puts exemplary effort into creating pattern and distributing color evenly, and has dipped at least twice.	Student puts proficient effort into creating pattern and distributing color evenly, and has dipped at least twice.	Student puts basic effort into creating pattern and distributing color evenly, and has dipped once.	Student puts below basic effort into creating pattern and distributing color evenly, and has dipped once or not at all.
Vocabulary	Student defines the terms "resist" and "reduction" with relation to indigo dyeing in an exemplary manner.	Student defines the terms "resist" and "reduction" with relation to indigo dyeing in an adequate manner.	Student defines the terms "resist" and "reduction" with relation to indigo dyeing in a basic manner.	Student defines the terms not in relation to indigo dyeing or leaves the exit slip blank.
History of Indigo	Student answers exit slip questions about the history of indigo in an exemplary manner.	Student answers exit slip questions about the history of indigo in a proficient manner.	Student answers exit slip questions about the history of indigo in a basic manner.	Student leaves the exit slip blank.

Score Comments