

Scientific Specimens

Free or low cost items:

Images from discarded library books, nature magazines or junk mail

Shells, rocks, mineral resources in your school

Natural specimens from your neighborhood: feathers, leaves, rocks, nuts, seeds

Other Items: If your budget will not cover these resources, consider writing a grant

[Easy-View Early Science Specimens](#)

[Real Bugs Discovery Kit](#)

[Hand Magnifiers](#)

[Explore & Discover Science Viewers](#)

Goal: Students will observe and investigate natural specimens.

Objective: SWBAT observe scientific specimens and design their own art works based on those observations.

National Core Arts Standards: Visual Arts

Creating: Conceiving and developing new artistic ideas and work.

Anchor Standard 1: Generate and conceptualize artistic ideas and work

VA:Cr1.2.1a - Use observation and investigation in preparation for making a work of art

Connecting: Relating artistic ideas and work with personal meaning and external context.

Anchor Standard 10: Synthesize and relate knowledge and personal experiences to make art.

VA:Cn10.1.Pka - Explore the world using descriptive and expressive words and art-making.

Next Generation Science Standards

Science and Engineering Practices

Analyzing and Interpreting Data

Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

- Analyze and interpret data to make sense of phenomena using logical reasoning.

3-LS3-1 Heredity: Inheritance and Variation of Traits

Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

Related Education Closet posts: [STEAM in Art Class](#) and [STEAMing Up the Art Room: Specimens](#)

Art Bots

An Art Bot is a little robot with a battery-powered motor that makes it wobble and spin across paper, leaving a drawing in its path. The process of constructing and experimenting with the bot's design will affect the outcome. The new National Core Arts Standards (NCAS) are process-based, and many new teaching standards are process based, too: ELA, math, and science. Throughout these new standards, teachers are encouraged to step-back and allow students to identify and solve their own problems. Thank you, [Leslie Gould](#) for sharing Art Bots at NAEA17.

Supplies needed:

Small electric motor (battery operated toothbrush, I buy Dr. Fresh Turbo @ Big Lots, \$1.50 each, or buy at a dollar store)

Pool noodles, cut into 6-12 inch pieces

Masking tape and rubber bands to attach items, hot glue and/or tacky glue (optional)

[Canoodle](#) cutter (optional, pool noodles can be cut with a serrated knife), scissors

Markers (3-5 for each Art Bot)

Extra AA batteries for toothbrush motors, and assorted craft items to embellish Art Bots

Goal: Students will construct a robot that creates art.

Objectives: SWBAT create an art bot that moves and creates art. SWBAT generate multiple correct answers to a problem.

Checklist for students:

1. **Attach toothbrush motor to the pool noodle, secure drawing instruments.**
2. **Test your bot, see if it draws a path. Make the path unique. Can you change it? How?**
3. **Be ready to explain how you were able to get your Art Bot to work. What did you do?**
4. **Sketch your Art Bot on drawing paper and name it. Does it have any unique features? Write 3 sentences about your experience creating your Art Bot.**

National Core Arts Standards: Visual Arts

Creating: Conceiving and developing new artistic ideas and work.

Anchor Standard 2: Organize and develop artistic ideas and work. Enduring Understanding: Artists and designers experiment with forms, structures, materials, concepts, media, and art-making approaches

VA:Cr2.1.4a Explore and invent art-making techniques and approaches.

Next Generation Science Standards**4-PS3-2 Energy**

Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-PS3-3 Energy

Ask questions and predict outcomes about the changes in energy that occur when objects collide.

Related Education Closet Post: [Art Bots: STEAM for Art Teachers](#)

Simple LEDs to Light Up Your Classroom

Supplies needed:

[LED lamp kit](#)

CR2032 3V Button Batteries (do not use with very young children)

Duct Tape

Goal: Students will experiment with open and closed circuits.

Objectives: SWBAT create art that includes a closed circuit with a battery and LEDs.

Checklist for Students:

1. **Make sure the long leg of the LED (positive) is on the positive side of the battery.**
2. **Use duct tape to secure the connection. If the LED is lit, you have completed the circuit correctly.**
3. **Attach your lit up LED to your artwork. The light will work for about 2 weeks.**
4. **For more information on creating simple circuits, see my [Pinterest page](#).**

[National Core Arts Standards: Visual Arts](#)

Creating: Generate and conceptualize artistic ideas and work

VA:Cr1.1.5a Combine ideas to generate an innovative idea for art-making.

[Next Generation Science Standards](#)

Science and Engineering Practices

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.

- Make observations to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.

[4-PS3-2 Energy](#)

Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Many thanks to teaching artist [Balam Soto](#) for this easy LED idea.