

Paper Circuits- Kandinsky Artwork

PREREQUISITES

Students should have already completed the simple and parallel circuit activities, have made a battery holder (press switch), and be comfortable designing circuits with a minimal template.

DESCRIPTION

In this lesson, students will design an artwork inspired by Wassily Kandinsky and then add paper circuits to light up the artwork.

Please note: this lesson will generally take 2 sessions to complete.

LEARNING OBJECTIVES

Students will:

1. Learn about the life and artwork of Wassily Kandinsky.
2. Learn about artists with disabilities.
3. Design and create an artwork inspired by Kandinsky.
4. Design and create a parallel circuit with a minimal template.

STANDARDS USED

This will be specific to the grade you are teaching. Please check the list at the end of this lesson.

MATERIALS AND SUPPLIES

- Large drawing paper- 11x17 copier paper works great to be able to see the template
- Drawing and coloring tools
- Sharpies
- Copper tape
- 3v coin batteries
- Card stock
- Foam tape
- LED lights
- 1 circuit template for each student
- Gluestick
- Tape

ACTIVITY

1. Introduce students to the life and artwork of Wassily Kandinsky.
<https://kids.kiddle.co/Kandinsky>
2. Introduce students to synesthesia- a neurological condition in which stimulation of one sensory or cognitive pathway (for example, hearing) leads to automatic,

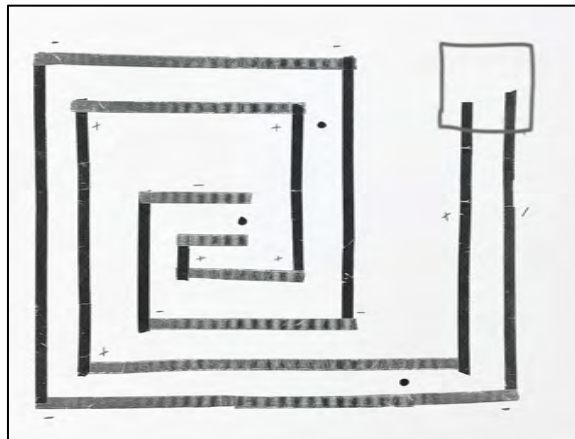
involuntary experiences in a second sensory or cognitive pathway (such as vision). For example, you see colors while hearing music. It is believed that Kandinsky had synesthesia.

<https://abstractedreality.com/in-harmony-wassily-kandinsky/>

<https://www.denverartmuseum.org/en/blog/wassily-kandinskys-symphony-colors>

<https://www.guggenheim.org/articles/checklist/synesthesia-a-visual-symphony-art-at-the-intersection-of-sight-and-sound>

3. Google has an online game where students can “play” a Kandinsky artwork while learning about him and synesthesia. Have students explore this game and research artwork by Kandinsky to inspire their project.
<https://artsandculture.google.com/experiment/sgF5ivv105ukhA>
4. Explain to students that we are going to make artwork inspired by Kandinsky and then light up the artwork using paper circuits. (Show examples).
5. Give each student the circuit template and have students use a sharpie to mark where 1-3 lights will go on the template. Remind students these are parallel circuits, so the light needs to be between a positive (+) and a negative (–) line.

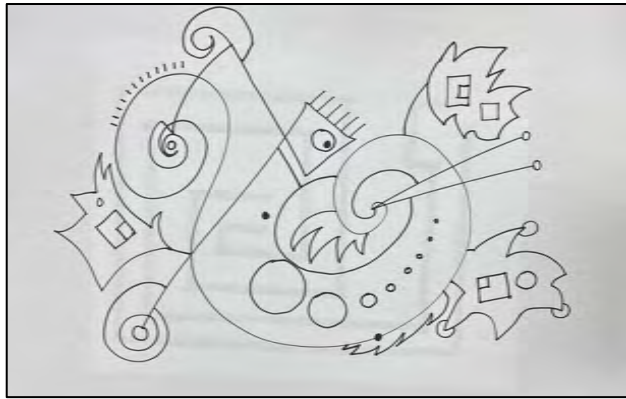


6. Have students lightly tape their template to their large white drawing paper with 1-2 small pieces of tape. They can tape it anywhere on the page and horizontal or vertical. The template should be facing into the drawing paper so that they can see it through their drawing paper. Mark where the lights are going to go on the drawing paper using the template as a guide.
7. Have students turn over their drawing paper to the blank side and draw the outline of their Kandinsky-inspired artwork with a pencil. We suggest playing music and having students draw what the music makes them feel. Kandinsky was greatly inspired by Wagner’s Lohengrin opera and the “Prelude to Act II” and “Prelude to Act III” are great songs to draw to.

<https://www.youtube.com/watch?v=Zwtu-7xhIn0>

https://www.youtube.com/watch?v=qy2k_xnE2XQ

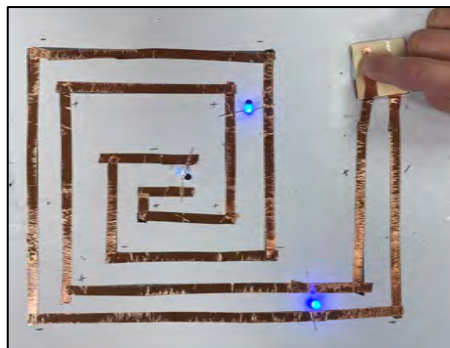
8. Have students use a sharpie to outline their drawing. At this time, make adjustments to the drawing as needed for light placement.



9. Remove the template from the back of the drawing paper.
10. Have students color in their drawing. Remind students to keep in mind what colors work best on a single circuit (blue + white OR red + yellow OR red + green) and the placement of their lights.



11. Once the students are done with their artwork, have them create the circuit on the template using the tape, battery (in a press button holder), and LEDs. Test the circuit to make sure it works.



12. Have students poke 3 small holes using a pencil or other instrument where their lights are marked on the drawing. Line up the lights on the template with the holes and press the lights through the holes.
13. Glue the drawing to the circuit page.



14. Have the students share their artwork with the whole class.

ACCOMMODATIONS FOR INCLUDING ALL CHILDREN

- BE CAUTIOUS ABOUT THE COIN BATTERIES IF YOU HAVE STUDENTS THAT EAT NON-FOOD ITEMS. If you have students that may have issues with the batteries, please provide them in a battery holder and have the teacher or para attach them to the artwork.
- For students who may have a difficult time deciding where to place the lights- the teacher can premark the template and drawing paper with the location of the lights.
- Use adapted coloring tools or tools with adaptive grips as needed.
- Consider having students work with a partner/buddy if they are unable to physically do the coloring or create the circuit.
- Use LED stickers instead of bulbs for students with fine motor issues.
- Consider fabric or copper tape based on student's needs (scissors vs ripping).
- Have paras assist with cutting tape as needed.

Possible Standards

Art Standards

Grade 4:

VA.4.C.2.2

Use various resources to generate ideas for growth in personal works.

VA.4.S.1.1

Manipulate tools and materials to achieve diverse effects in personal works of art.

VA.4.S.1.2

Explore and use media, technology, and other art resources to express ideas visually.

VA.4.S.1.3

Create artworks that integrate ideas from culture or history.

VA.4.S.3.1

Experiment with various materials, tools, techniques, and processes to achieve a variety of results in two- and/or three-dimensional artworks.

VA.4.H.1.1

Identify historical and cultural influences that have inspired artists to produce works of art.

VA.4.F.1.1

Combine art media with innovative ideas and techniques to create two- and/or three-dimensional works of art.

VA.4.F.1.2

Examine and apply creative solutions to solve an artistic problem.

Grade 5:

VA.5.C.2.1

Revise artwork as a necessary part of the creative process to achieve an artistic goal.

VA.5.S.1.2

Use media, technology, and other resources to inspire personal art-making decisions.

VA.5.S.2.3

Visualize the end product to justify artistic choices of tools, techniques, and processes.

VA.5.S.3.1

Use materials, tools, techniques, and processes to achieve expected results in two- and/or three-dimensional artworks.

VA.5.H.1.1

Examine historical and cultural influences that inspire artists and their work.

VA.5.F.1.1

Examine and experiment with traditional or non-traditional uses of media to apply imaginative techniques in two- and/or three-dimensional artworks.

Grades 6-8:

VA.68.S.1.3

Use ideas from cultural, historical, and artistic references to create personal responses in personal artwork.

VA.68.S.2.1

Organize the structural elements of art to achieve artistic goals when producing personal works of art.

VA.68.S.2.2

Create artwork requiring sequentially ordered procedures and specified media to achieve intended results.

VA.68.O.1.3

Combine creative and technical knowledge to produce visually strong works of art.

VA.68.F.1.1

Use non-traditional thinking and various techniques to create two-, three-, and/or four-dimensional artworks.

VA.68.F.1.3

Investigate and describe how technology inspires and affects new applications and adaptations in art.

Grades 9-12:

VA.912.S.1.2

Investigate the use of technology and other resources to inspire art-making decisions.

VA.912.S.3.1

Manipulate materials, techniques, and processes through practice and perseverance to create a desired result in two- and/or three-dimensional artworks.

VA.912.O.1.3

Research and use the techniques and processes of various artists to create personal works.

VA.912.F.1.4

Use technological tools to create art with varying effects and outcomes.

Science Standards

Grades 3-5 (Computer Science):

SC.35.CS-PC.3.2

Gather, organize, and analyze information from digital resources.

SC.35.CS-CS.1.4

Create a simple model of a system (e.g., flower or solar system) and explain what the model shows and does not show.

SC.35.CS-CS.2.4

Solve real-world problems in science and engineering using computational thinking skills.

Grade 5:

SC.5.P.10.4

Investigate and explain that electrical energy can be transformed into heat, light, and sound energy, as well as the energy of motion.

SC.5.P.11.1

Investigate and illustrate the fact that the flow of electricity requires a closed circuit (a complete loop).

Grades 6-8 (Computer Science):

SC.68.CS-PC.3.1

Answer research questions using digital information resources.

Grade 7:

SC.7.P.11.2

Investigate and describe the transformation of energy from one form to another.

(Circuit Template)

