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**Theme:** Play as a Means of Releasing Stress and Anxiety

**Grade Level:** 6<sup>th</sup> Grade

**Time:** 2 Class Period (60 min. each)

**Lesson Overview:** Students will learn the difference between potential and kinetic energy and look at artwork by Michio Ihara. They will view op art and learn about how color relationships and gradation enhances those works of art. Then, we will discuss how play can be used to relieve stress or anxiety. The students will research how to draw optical illusion to sketch in their sketchbooks. Students will assemble a fidget spinner that includes an optical illusion, an understanding of color relationships, and gradation. Then, they will answer reflective questions about their own work.

**Challenge:** Students will be challenged to demonstrate their knowledge of color relationships and gradation on their functional fidget spinners. They will conduct research to understand how optical illusions are drawn and apply that knowledge to their own optical illusions that will be included on their final product. They must include multiple, visible layers that spin together on their assembled fidget spinner.

**Visual Culture:** The fidget spinner craze has been a wildly popular means of concentration amongst many in the world. Many students and adults have played with or owned fidget spinners at some point within the past few years. I will have a manufactured fidget spinner on hand when introducing the lesson for students who haven't interacted with one before so they can experience what it feels like to play with a fidget spinner. They can be compared to other items used to "fidget" with, like stress balls. Students can relate to this item because many students experience stress or anxiety, and this is a great way to keep the eyes busy and focused.

**Virginia Standards of Learning:**

Visual Arts:

- 6.1 The student will use, and record in a sketchbook/journal, steps of the art-making process, including brainstorming, preliminary sketching, planning, reflecting, refining, and elaborating, to create works of art.
- 6.5 The student will use elements of art and principles of design, including the following, to express meaning in works of art:
1. Color—relationships
  4. Value—gradation
- 6.8 The student will use assembling to create three-dimensional works of art.

**Science:**

- 6.2 The student will investigate and understand basic sources of energy, their origins, transformations, and uses. Key concepts include:
- a) potential and kinetic energy;

**Lesson Objectives:**

*Students will...*

- Describe potential and kinetic energy
- Use sketchbooks to plan their fidget spinner designs
- Compose layers that show an optical illusion, color relationships, and gradation
- Construct a functional fidget spinner
- Critique their own works in a written reflection in their sketchbooks

**Vocabulary:**

- Potential Energy: stored energy/energy from gravity
- Kinetic Energy: energy of motion
- Op Art/Optical Illusions: art that tricks the eyes into looking like it's moving
- Color Relationships: how colors relate to each other on the color wheel
- Gradation: gradually transitioning from one color hue, shade, or texture to another

**Historical/Cultural/Artist Information:** Michio Ihara is an artist that creates large, kinetic sculptures to display in the world, usually outdoors. The wind surrounding the sculptures cause them to move on their own, creating a peaceful, moving sculpture. He has a sculpture in Harrisonburg, VA at the Albright Millers Residence. This piece moves when the cubes react to

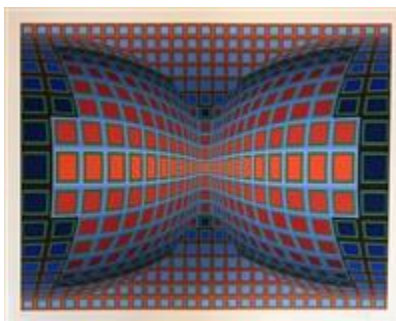
the wind. It is visually pleasing and the movement depends on the wind's force, making it a kinetic sculpture.

Victor Vasarely was a French-Hungarian artist who was considered the leader of the Op Art movement. He was interested in illusions that were able to trick the human eye.

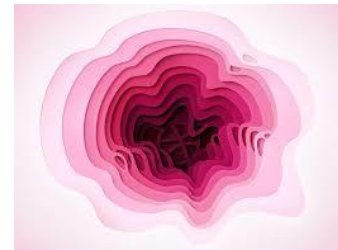
**Image Description:**



I will use this image to talk about Michio Ibara and define potential and kinetic energy. We will talk about how the wind and rain water moves each of the cubes and I will ask them how the slow-moving cubes might make them feel while looking at it. I will relate that to stress and anxiety and how looking at it might make us feel calm and at peace. I will ask the students, “How do you think you would feel standing in front of this piece when it’s moving?”



I will use these images to define op art and talk about how Victor Vasarely gives the illusion of movement and warping although they are not actually moving. I will ask them, “How do these images mess with your mind? Do they look like they’re moving? How is the artist making it look that way?”



I will use these images to explain color relationships and gradation. We will reflect on what we’ve just recently learned about the color wheel and the color relationships we know, such as primary, secondary, tertiary, complimentary, etc.

<https://www.youtube.com/watch?v=VLdwH6y1154>

I will show this video from 4:15 to 4:40 to show how colors react to one another when they are in a kinetic state. I will ask them, “What will happen if you use complimentary colors? What color will your spinner be when in motion?” and, “If you use many colors, how will that affect your piece? What will it look like?”

### **Lesson Procedure:**

Day One:

(Have sketchbooks, pencils, markers, compasses, scissors, assignment sheets, and bristol board squares in a caddy on the grouped desks)

- (1 min.) I will ask students to sit in their assigned seats.
- (15 min.) I will go over the PowerPoint with the students and talk to them about the difference between potential and kinetic energy. I will define the two, and ask the students to give me examples. Then, I show the students Michio Ihara’s piece in Harrisonburg, VA and ask them whether it’s potential or kinetic energy. Then, I’ll talk to

them about stress and anxiety and ask them how view this kinetic sculpture might make them feel. Then, I will show them Op art by Victor Vasarely and define what optical illusions are. I will I ask them to comment how their eyes react to the pieces and in what ways their eyes see movement. Next, we will review color relationships since we just finished learning the color wheel. I will also talk to them about gradation and how these could help create an optical illusion. I will pull up the YouTube video showing a pinwheel so the students can see what colors look like in motion and let them know that they will be creating fidget spinners that will include optical illusions using color relationships and gradation. I will ask who knows what a fidget spinner is and if anyone knows why they were created. I will pass around the manufactured one to anyone who has never interacted with one. Then, I'll show them my teacher example of the project to give them an idea of what we'll be constructing. We will talk about the importance of play and how it can help relieve stress and anxiety. I will ask them how they feel after recess time or playing sports. Taking the time to play and enjoy life is an important part of maintaining a healthy life and will help you feel calm, much like how viewing Michio Ihara's sculptures can make you feel calm.

- (25 min.) I will tell them to get an assignment sheet from the caddy and include their names on the name line. Students will get their sketchbooks and Chrome Books and research optical illusions. They will need to draw 5 different potential optical illusions that they can use on their fidget spinners. I will tell them that they can be black and white or colorful. Their sketches can be done in a 3x3 inch square. I will remind them that their spinner will most likely be circular, so an illusion that would work well in a circle would be best.
- (5 min.) I will ask the students to look at the board, where I will demonstrate how to use the compass on a piece of paper to draw circles of different sizes. Any questions about the compasses will be answered here.
- (12 min.) Students can begin using compasses to draw circles and cut them out with scissors. I will tell them that they need to make two circles on the Bristol board that should be as large as possible while still fitting on the sheet given to them. They don't have to be the same size. The largest circle that goes in the back will be where they draw their selected op art. They only need to choose one from their sketches. On the second

circle, they will need to cut some pieces out so we can still see the op art in the back. I will recommend making shapes like snowflakes, gears, fan blade, pinwheel, etc. The back layer should be the largest and take up the most space while the layers in front of it show more. I will tell them that one layer needs to show gradation, it doesn't matter which one. They will be reminded of the pinwheel video and how the color relationship they choose will react to the kinetic movement of the fidget spinner. It might be a good idea to use colors that makes them happy or calm since this can be played with to relieve stress and anxiety.

- (2 min.) Have students clean up all materials by putting unused ones in the caddy and their used materials in their assigned bins. They will need to clean the floors around them and line up table by table at the door as I tell them to do so.

Day two:

(Bristol board, compasses, dura-lar, screw posts, markers, beads, and scissors will be in the group caddies)

- (1 min.) I will ask students to get the materials from their bins and sit at their assigned seats.
- (10 min.) I will tell students to finish making each layer that will go on their fidget spinner and remind them that they need to show an optical illusion, a color relationship that we learned when we discussed the color wheel, and gradation of some sort. Their spinners need to have at least 3 layers, 2 from the bristol board. If time permits, they can go over 3 pieces. They need to include spaces where you can see the back layers.
- (10 min.) I will tell the students to come to the front table where I will show them how to assemble their fidget spinners. I will show them where I put the step-by-step instructions on their assignment sheet just in case they forget a step. I will add each layer, putting the beads between each layer, and finalize it by adding the end of the screw post. I will also show them how to put the hole in the center of each component. Then, students will go back to their seats and finish any coloring and cutting.
- (15 min.) Students will begin assembling their fidget spinners. I will remind them to put the largest piece in the back. Once their piece is assembled, they need to test it to make sure it works. If it doesn't they should ask a neighbor to help or raise their hands for me to come help them.

- (15 min.) Once their fidget spinner is together and working, I will tell them to write the questions on the board in their sketchbooks and answer them. They must react to their own work and how it uses the difference components we talked about in class.
- (5 min.) I will tell students to begin cleaning up. They must put their spinners, sketchbooks, and assignment sheet in their bins for me to grade. All scraps must be off the floor and all materials have to be placed in the caddy.
- (4 min.) I will have student line up at the door table by table. We will talk about what other ways they relieve stress and anxiety and how play is important in their lives. We will discuss the different types of play. I will ask them what kind of color relationships they used and how they were able to show gradation. We will talk until the bell rings.

**Evaluation:**

(see rubric)

**Materials:**

- 9" x 12" Bristol Board (1 sheet per student)
- Helix Bow Compasses (1 per 2 students)
- Clear Dura-Lar 5" square sheets (1 per student)
- Lineco Screw Post Packs 1-3/4" (1 per student)
- Permanent Markers (variety of colors, fine point and regular)
- Beads with 1/4" opening (3-4 per student)
- Scissors (1 per student)
- Pencils (1 per student)
- Pushpins (10)

Alternatives:

- 2" bolt and hex nut replaces screw posts
- Heavy posterboard or railroad board replaces Bristol board

**Preparation:**

- Trim Dura-Lar into 5" pieces

**Resources:**

Anonymous. (2018, October 3). Color Wheel. Retrieved from <https://www.bhg.com/decorating/color/basics/color-wheel-color-chart/>

Gradation Images. (n.d.). Retrieved from <https://www.shutterstock.com/search/gradation?page=2>

Ignited Innovated Indian. (2018, March 25) Newton's Wheel Made Easy. Retrieved from <https://www.youtube.com/watch?v=VLdwH6y1154>

Michio Ihara. (n.d.). Retrieved from <http://www.michioihara.com/sculpture/year.html>

Op Art Spinners. (n.d.). Retrieved from <https://www.dickblick.com/lesson-plans/Op-Art-Spinners/>

Pink Gradation. (n.d.). Retrieved from <https://dribbble.com/shots/2700405-Pink-gradation>

Victor Vasarely. (n.d.). Retrieved from <http://www.artnet.com/artists/victor-vasarely/>

**Special Population:** For gifted and talented students, I will challenge them with creating optical illusions that also demonstrate gradation through a color relationship. I will allow them to create more layers if they finish layers quickly, but also challenge them to do more difficult optical illusions. At the end of their projects, they will be asked to answer which type of energy their spinners show and how, what other ways they relieve stress or anxiety through play, how they used gradation, what color relationship they used, and how they created an optical illusion. I will challenge them to elaborate their answers the best they can and how they can really relate their answers to their own projects. For the perfectionists, I will tell them to stick to the steps on the assignment sheets and only so extra layers if they have time.

**Extra Materials:**

- PowerPoint
- Teacher Example
- Manufactured Fidget Spinner
- Chrome Books
- Sketchbooks



Name: \_\_\_\_\_

### Optical Illusion Fidget Spinners

1. Using a compass, create two circles on a sheet of 9" x 12" bristol board. The circles do not have to be the same size, but they should be as large as possible to fill the page.
2. Using markers, create an Op Art-inspired design on one side of the largest circle. This will be the back layer of the spinner.
3. The second circle should be designed with openings that reveal the layer beneath. For example, a gear shape, a fan blade shape, a pinwheel shape, or a snowflake. Stencils can be used to create and alter shapes to suit this project.

To cut openings in the bristol board, bend the sheet slightly at the middle of the desired cut area and snip a line just large enough to insert scissors. Cut from that line to finish the opening.

4. For the top transparent layer, draw a circle with the compass on the Dura-Lar before removing the plastic protective film. Cut out the circle, then remove the plastic from either side. Create a pattern on the clear sheet using permanent markers.
5. You will now have three disks to spin. In the center of each piece, create a hole at least 5 mm (3/8" Dia). This can be accomplished by starting the hole with a push pin, then widening it slowly and carefully with pointed scissors.
6. Each spinner will need a bead between each spinning disk.
7. Assemble the spinner onto a book post. Start with the long end of the post, then add a bead. Next, place the largest circle on the post, followed by another bead. Finish the circle with cut-outs, then the transparent circle, using a bead as a spacer between each layer. Screw the top of the screw post in place, then hold the end piece with one hand and spin the disks with the other.

*Step 1: Design Op Art-inspired circles with markers and create holes in each center.*



Step 2: Assemble onto a screw post, with a bead between each circle.

Step 3: Hold onto the back piece with one hand and use the other to give it a spin!

	<i>Excellent-4</i>	<i>Good-3</i>	<i>Fair-2</i>	<i>Poor-1</i>
<i>Energy</i>	Answers energy question thoroughly and explains why in more than 1 sentence	Answers energy question correctly and explains why in at least one sentence	Answers energy question correctly but doesn't explain	Answers energy question incorrectly but attempts an explanation
<i>Planning</i>	Has 5 optical illusion sketches	Has 4 optical illusion sketches	Has 3 optical illusion sketches	Has 2 or less optical illusion sketches
<i>Optical Illusion, Color Relationship, and Gradation</i>	Fidget spinner includes clear optical illusion, color relationship, and gradation	Fidget spinner includes 2/3 of these components	Fidget spinner includes 1/3 of these components	Fidget spinner does not include any of these components but attempt was made
<i>Assemblage</i>	Fidget spinner functions perfectly	Fidget spinner functions most of the time	Fidget spinner functions somewhat	Fidget spinner does not function but attempt was made
<i>Reflection</i>	All questions were answered correctly with 2 or more sentences	All questions were answered correctly and most had 2 or more sentences	Most questions were answered correctly/most had at least 2 sentences	Not all questions were answered completely or many were incorrect

Total\_\_\_\_\_/20

Comments:

Fidget Spinner Reflection Questions:

1. Does a fidget spinner use potential or kinetic energy? Why?
2. How does your fidget spinner make you feel when you use it? Do you feel calm or focused? Why?
3. What color relationship did you include on your spinner and what is their relationship like on the color wheel? (front, middle, back) You may use your practice wheel to help you answer this question.
4. Which layer did you use gradation? How?
5. What's your favorite part about your fidget spinner? If you could improve/change anything, what would it be?