**Conceptual Mathematics**

How many sessions to complete? 4

How long per session: 60 minutes

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| --- | --- |
| **Big Idea** |  |
| * There is math in art and art in math.
* Our proficiency in all core subjects (including art) requires precise writing, close reading, and peer editing skills.
* Our use of language affects our art-making experiences.
 |
|  |
| **Essential Questions** |  |
| * How does our use of language affect our art-making experiences?
 |
| * What is conceptual art?
 |
| * How can geometry be used in art?
* What role does technical writing play in art making?
* How does interpretation of language vary from person to person?
* How can we expand our envisioning and reflecting skills?
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|  |
| **Studio Habits of Mind** | **Operation in Lesson** |
| * Observe
 | * Close reading skills.
 |
| * Envision
 | * Envision a work of art and envision the work of art embedded in your peer’s written directions.
 |
| * Reflect
 | * Reflect on your directions and your art product. What was challenging? Would you do anything differently if you did it again?
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|  |
| **CCSS** |  |
| **ELA:** **Writing**: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.**Math:** Draw, construct and describe geometrical figures and describe the relationships between them.Reason abstractly and quantitatively. |
|  |
| **National Arts Standards** |  |
| * **VA:Cr1.2.7a**Develop criteria to guide making a work of art or design to meet an identified goal.
 |
| * **VA:Cr.1.5a**Combine concepts collaboratively to generate an innovative idea for art making.
 |

**Session 1: Conceptual Art**

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| --- | --- |
| **Learning Goal** | **Assessment** |
| * We can use what we learned about conceptual art and begin writing directions for a piece of artwork.
 | * Students share ideas about conceptual art.
* Students begin writing.
 |
| **Materials** | **Preparation** |
| * Conceptual art PowerPoint
 | * Write example directions and make an example piece of art from those directions.
 |
| * Example piece of art
 | * Set up PowerPoint.
 |
| * Example directions
 | * Make copies of worksheet.
 |
| * Direction worksheets
 |  |
| * Pencils
 |  |
| **Vocabulary** |  |
| * Conceptual art: a movement in art in which the concept, or the idea, is more important than the aesthetic
* Sol Lewitt: a conceptual artist
 |
| **Procedures** |  |
| * Teacher introduces Sol Lewitt and conceptual art through PowerPoint presentation.
* Teacher shares pieces of conceptual art, asking for student feedback on potential concepts.
* Teacher discusses components of conceptual art (use of geometric shapes, lines, precision, primary colors, and no realistic subjects/symbols).
 |
| * Teacher introduces project: Each student will write directions (just like Sol Lewitt did) for someone else to make a piece of art. They will then switch with a peer and make a piece of art themselves. Each person will write one set of directions and make one piece of art. This means that precise writing, peer editing, close reading, and envisioning skills will be of utmost importance to their success. Use of accurate measurements and mathematical techniques are also critical.
 |
| * Teacher shares example directions and a piece of art, reading through directions very carefully. Students should try to find places where the teacher directions could have been more specific or places where they were confused, in order to brainstorm helpful language to use (specify units, placement, color, size, etc.).
 |
| * Pass out worksheets (see below).
 |
| * Students begin drafting directions.
 |

**Session 2: Drafting Directions**

|  |  |
| --- | --- |
| **Learning Goal** | **Assessment** |
| * We can use precise language and mathematical skills in our artwork drafts.
 | * Students complete direction drafts.
* Students give each other feedback on their directions.
* Given feedback, students finalize, clarify, and clean up directions.
 |
| **Materials** | **Preparation** |
| * Worksheets from yesterday
 | * Preselect pairs of students (or let them choose).
 |
| * Pencils
 | * Keep examples of conceptual art up on PowerPoint or around the room for inspiration.
 |
| * Poster board cut in half to approximately 14" x 22" (for hands-on measuring during writing process)
* Rulers (for hands-on measuring during writing process)
 |  |
| **Procedures** |  |
| * Review process: You will write directions, then switch with someone else to have them make the actual artwork. It helps to draw a sketch of your art as you are writing the directions. Make sure everything the artist needs to know is included in your precise writing: units, sizes, colors, placement on a page, etc.
* *It is expected that instructions will include the use of a half sheet of black or white poster board and cutting out and gluing down colored construction paper on the poster board. (The use of pencil alone on construction paper is not a good example of dynamic conceptual art.)*
* Ask for volunteers to share out what is going well and what they are getting stuck on. Troubleshoot challenges as a class.
 |
| * Students finish their direction drafts.
* Students pair up and, using pens, give each other constructive feedback without erasing. Peer editors should make sure everything is clear and they can easily envision the artwork in their minds.
 |
| * Peer editors give directions back to their authors. *Building Big Tower Activity.*
 |
| * Students consider the feedback they were given and spend the rest of the period refining, clarifying, and cleaning up their drafts to make them final and ready to switch tomorrow with the person who will make their work. This is homework if it is not completed in class. It is helpful to have a family member try to make it at home for practice, but not required.
 |

**Session 3: Time to Create!**

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| **Learning Goal** | **Assessment** |
| * Students use close reading, envisioning, and mathematical and artistic skills to create a work of art from only a set of directions written by a classmate.
 | * Students engage and persist enthusiastically with the art making. Students ask for help if needed.
 |
| **Materials** | **Preparation** |
| * Half sheets of black and white poster board (other colors work, too), approximately 14" x 22."
 | * Pre-pair students, if desired.
 |
| * Various colors of construction paper
 |  |
| * Scissors
 |  |
| * Glue stick
 |  |
| * Markers, if desired
 |  |
| **Vocabulary** |  |
| * Envision
 |
| **Procedures** |  |
| * Students should walk in the door with complete direction drafts.
 |
| * Teacher reviews process: Just like Sol Lewitt, you will switch your written directions with a peer. You will then take the directions you are given and read them closely, gathering what materials the author says you need. You will then spend the rest of the period precisely, accurately, and intentionally making the work of art.
 |
| * Pair students up or let them choose.
 |
| * Students get to work individually. They may sit next to their partner, but should not ask them for clarification—the idea is that all the clarification necessary has already been included in the directions.
 |
| * In last five minutes, ask students to share what is working well and what is challenging. Try to troubleshoot some challenges as a class.
* Do a short gallery walk if many students are finishing up.
 |
| * Take a poll to find out where students are at. Some may be finished, while others may still be working on particularly complicated directions.
 |
| * Students consider the feedback they were given and spend the rest of the period refining, clarifying, and cleaning up their drafts to make them final and ready to switch tomorrow with the person who will make their work. This is homework if it is not completed in class. It is helpful to have a family member try to make it at home for practice, but not required.
 |

**Session 4: Reflections**

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| --- | --- |
| **Learning Goal** | **Assessment** |
| * Students complete a work of art and reflect in pairs and alone about their process and ending art piece.
 | * Students reflect in pairs verbally and in writing individually.
* Students give each other feedback during a gallery walk.
 |
| **Materials** | **Preparation** |
| * Half sheets of black and white poster board (other colors work, too), approximately 14" x 22."
 | * Make copies of reflection worksheets.
 |
| * Various colors of construction paper
 |  |
| * Scissors
 |  |
| * Glue stick
 |  |
| * Reflection worksheets
 |  |
| **Vocabulary** |  |
| * Envision
 |
| **Procedures** |  |
| * Students should spend the first 10–15 minutes of class finishing up their artwork.
 |
| * Pair students back together with the person whose art they made or wrote for.
 |
| * After modeling how the reflection might sound or read, have students fill out the reflection worksheet (see below). Each student will need to take turns sharing their experiences.
 |
| * After all students have had a chance to fill out their worksheets, ask for a few students to share what they wrote or discussed with their partners.
 |
| * In the last ten minutes, have students set up their works around the classroom to create a gallery walk. They may or may not title their works to represent a concept, or label their works with their names—it is up to you.
* Students should quietly and respectfully look at all the artwork, choosing one to fill out the back page of their reflection worksheet.
* Students should turn in worksheet, artwork, and final draft of directions together to teacher before leaving.
* See attached rubric for grading.
 |

**Directions Example**

I drafted out an idea on scratch paper before I did anything else. I looked at examples and envisioned possibilities and what I could realistically finish in the time allotted.

Materials needed:

* Half sheet of white poster board
* Sheet of black construction paper
* Compass or ruler and string
* Pencil
* Scissors
* Glue stick
1. Begin with a half sheet of white poster board.
2. Using a compass, or a string attached to a pencil, draw a perfect circle 3 inches in diameter on the black construction paper.
3. Cut out circle. We’ll call this Circle A.
4. Again, using a compass or string, draw a perfect circle 1.5 inches in diameter on the black construction paper.
5. Cut out circle. We’ll call this Circle B.
6. Again, using a compass or string, draw a perfect circle 5 inches in diameter on the black construction paper.
7. Cut out circle. We’ll call this Circle C.
8. Place half sheet of white poster board in front of you horizontally.
9. With a ruler, lightly mark where the center of the poster board is (lengthwise).
10. Glue one side of Circle C. Press it down approximately in the middle of the left half of the poster board.
11. Glue one side of Circle A. Press it down in the top half of the right half of the poster board.
12. Glue one side of Circle B. Press it down in the right half of the poster board, just barely touching Circle A.
13. Measure and cut out a 1" x 12" black rectangle from the construction paper.
14. Add glue to one side of the rectangle and press it down slanted to the right, touching two adjoining sides, and in the left half of the poster board.
15. Use scissors to cut any excess off the rectangle so that all sides are even.

You are finished! Add extra color and pizzazz as you wish.

**Sol Lewitt Project Worksheet**

**May 1–5, 2017**

1. Write **15–20** *clear* directions to make a piece of art.
	1. The materials your artist will have to work with are the following:

*half sheet (white or back) poster board, ruler, pencil, eraser, (black, white, and primary colors) of construction paper, glue stick, scissors*

1. When everyone has finished their directions drafts, ask them to pull a name out of the bucket and then kindly ask that person to give you feedback on your directions. While they are working on yours, you should give them feedback on theirs. Consider your peer’s feedback and make necessary changes to your directions by rewriting them **on a clean sheet of paper**. You will turn in both this worksheet and the final draft.
2. When everyone has final drafts of their directions, the next step will be choosing a second name from the bucket (must be different than the first name you chose). You should switch directions with the person you pick and make their art!

**Examples:**

|  |  |
| --- | --- |
| ***Unclear direction: ☹***  | 1. *Draw a circle and put it on the poster board.*
 |
| ***Clear direction: ☺***  | 1. *On the black construction paper, draw a circle that is 3 inches in diameter. Carefully cut out the circle and glue it onto a half sheet of white poster board in the upper right corner.*
 |

**Directions Draft**:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Due: \_\_\_\_\_\_\_\_**

*(attach this worksheet to final draft)*

**Conceptual Art Rubric**

**Student Name:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Period:** \_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Content** | **Process** | **Product** |
| **4 Exemplary** | Student’s work clearly demonstrates the understanding of conceptual art, technical writing, use of mathematics in geometric art, close reading skills, and self-reflection. | Student engaged energetically with both the writing of the directions and the making of artwork. Student worked independently, persisted through difficulty, and asked for help when needed. | Both the written directions and the artistic product are complete, error free, refined, and particularly thoughtful. |
| **3 Accomplished** | Student’s work demonstrates an understanding of precise writing and conceptual art making. | Student engaged with both the writing of the directions and making of the artwork without reminders. | Both the written directions and artistic product are complete and error-free. |
| **2 Developing** | Student’s work somewhat demonstrates an understanding of conceptual art and/or technical writing. | Student mostly engaged with the writing of directions and making of artwork but may have needed reminders to stay on task. | The written directions and artistic product are mostly complete, but missing some elements. |
| **1 Beginning** | Student’s work does not demonstrate an understanding of conceptual art or technical writing. | Student was minimally or not engaged in the writing of directions or making of artwork. | The written directions and/or artistic product are incomplete. |

**Total: \_\_\_\_\_\_\_\_\_ / 12**

**Notes:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_