

TITLE: Math and Matisse- Using the Preschool Art Sequence to Teach Math

Special Area: Preschool Level II

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I. ABSTRACT

- A. This unit, integrating math and art from the Core Knowledge Preschool Sequence, allows children to practice beginning math skills such as sorting and classifying objects or pictures of objects, patterns, and measurement while becoming familiar with select pieces of art.

II. OVERVIEW

- A. Content from the Core Knowledge Preschool Sequence

1. Art Works- (Level II, page 97): "*Rhythms*," "*Head of A Man*," "*Red Interior/ Blue Table*," "*The Snail*," "*Broadway Boogie – Woogie*"
2. Visual Arts- (Level II, page 96): Explore and create various art forms, media, and techniques
 - a) Use various tools and techniques in completing art projects. (page 96)
 - b) Create nonrepresentational and representational works. (page 97)
 - c) Examine a work of art by a known artist and create a work "in the style of" the work examined. (page 97)
 - d) Work with other children to create a collective work of art. (page 97)
 - e) Describe his or her artwork, explaining the materials and technique(s) used. (page 98)
3. Mathematical Reasoning and Number Sense- (Level II, page 62)
 - a) Classify objects/pictures using a single criterion. (page 63)
 - b) Identify and label verbally the single, common attribute or characteristic of a group of objects/pictures. (page 63)
 - c) Identify and label verbally the differences or criteria used for classification of several groups of objects/pictures. (page 63)
 - d) Select an object/picture, according to a description that includes two properties. (page 63)
 - e) Using concrete objects, continue a more complex two-color pattern depicted by a pattern card. (page 64)
 - f) Using stickers and/or colored markers, continue on paper either an alternating pattern of one property (color, size, shape) or a two-color pattern. (page 64)
 - g) Create and verbally describe a pattern using concrete objects. (page 64)
 - h) Given a collection of assorted shapes, classify and name circles, rectangles, and triangles. (page 64)

III. BACKGROUND KNOWLEDGE

- A. *Core Knowledge Preschool Sequence*. Charlottesville, VA: Core Knowledge Foundation, 2000. ISBN: 1-89057-21-6

IV. PREREQUISITE PRIOR KNOWLEDGE FOR STUDENTS

- A. Colors: red, yellow, green, blue, orange, purple, brown, black, white.
- B. Match rectangular, square, circular, and triangular shapes to outlines of the same configuration and size.
- C. Use various tools and techniques in completing art projects: paste, use stickers, and cut straight lines with scissors.

V. RESOURCES

- A. *Core Knowledge Preschool Sequence*. Charlottesville, VA: Core Knowledge Foundation, 2000. ISBN: 1-8905/7-21-6 (lessons one – five)
- B. *Shapes*. Lincolnwood, IL: HTS Books, 1992. ISBN: 1-56173-481-0 (lessons one – two)
- C. Baker, Alan. *Brown Rabbit's Shape Book*. New York: Larousse Kingfisher Chambers Inc., 1994. ISBN: 1-85697-950-4 (lessons one – two, culminating activity)
- D. Blackstone, Stella. *Bear in a Square*. Barefoot Books. ISBN: 1-901223-58-2 (lessons one – two, culminating activity)
- E. Dodds, Dayle. *The Shape of Things*. Cambridge, MA: Candlewick Press, 1994. ISBN: 1-56402-224-2 (lessons one – two, culminating activity)
- F. Dotlich, Rebecca. *What Is Round?* HarperCollins, 1999. ISBN: 0-694-01208-4 (lessons one – two, culminating activity)
- G. Dotlich, Rebecca. *What Is Square?* HarperCollins, 1999. ISBN: 0-694-01207-6 (lessons one, two, and four, culminating activity)
- H. Hoban, Tana. *So Many Circles, So Many Squares*. New York: Greenwillow Books, 1998. ISBN: 0-688-15166-3 (lessons one – two, culminating activity)
- I. Lionni, Leo. *The Biggest House in the World*. New York: Pantheon, 1968. ISBN: 394-90944-5 (lesson 1, culminating activity)
- J. Rikys, Bodel. *Red Bear's Fun With Shapes*. New York: Dial Books, 1992. ISBN: 0-8037-1317-7 (lessons one – two, culminating activity)
- K. Salzmann, Mary. *Rectangles*. Edina, MN: ABDO Publishing, 2000. ISBN: 1-57765-167-7 (lessons one – two, culminating activity)
- L. Stadler, John. *Hooray for Snail!* New York: HarperCollins, 1984. ISBN: 0-690-04412-7 (lesson 1, culminating activity)
- M. Turner, Gwenda. *Shapes*. New York: Penguin Books, 1991. ISBN: 067083744 (lessons one – two, culminating activity)
- N. Watkins, Nicholas. *Matisse*. London: Phaidon Press Limited, 1992. ISBN: 0714827096
- O. www.artexpression.com
- P. www.allposters.com

LESSONS OUTLINE

Lesson One: “*The Snail*”

- A. Daily Objective(s)
 - 1. Students will examine “*The Snail*” by Henri Matisse.
 - 2. Students will create a “stained glass window” by ripping colored tissue paper.
 - 3. Students will classify and name rectangles and squares.
- B. Grouping: Whole group instruction, small group activity
- C. Materials & Preparation
 - 1. “*The Snail*” by Matisse
 - 2. Colored copy of “*The Snail*”
 - 3. *Rectangles* by Mary Salzmann
 - 4. Black, blue, yellow, green, red, purple, orange tissue paper
 - 5. Two pieces of wax paper for each child, cut into 4x4 pieces

6. Iron and towel
 7. One 6" piece of string or yarn per child
 8. White chart paper
 9. Colored markers- black, blue, yellow, green, red, purple, orange
 10. Hole punch
- D. Language of Instruction
1. Teacher: **art, artist, paintings, pictures, collage, create, shape, straight line, tear, technique, colors, square, rectangle, tear, line, technique**
 2. Students: **black, blue, yellow, green, red, white, purple, orange, rectangle, square**
- E. Procedures/Activities
1. Show the print of "*The Snail*."
 2. Say "This is a work of **art** called '*The Snail*' the **artist** is a man named Henri Matisse"
 3. Ask the students to repeat "Henri Matisse".
 4. Say "Henri Matisse was an **artist** who created many different **paintings** and **pictures**." "This **picture** is called a **collage**."
 5. Ask the students to repeat the word "**collage**."
 6. Ask "What **colors** do you see in this **collage**?" (make sure the whole group repeats each of the following words **black, blue, yellow, green, red, white, purple, orange**)
 7. Write down each color with the corresponding marker.
 8. Review colors by pointing to the word and asking students to "read" the word.
 9. Say "A **square** is an object that has four sides that are all the same length."
 10. Draw a square on the chart paper and say "This is a **square**."
 11. Ask students to repeat the word "**square**."
 12. Ask "Do you recognize any **squares** in this **collage**?" (the outline of the collage)
 13. Say "That's right, the whole **collage** is a **square**." Using a black marker, outline the perimeter of the collage (using the colored copy).
 14. Say "Another shape in this **collage** is a **rectangle**."
 15. Ask students to repeat the word **rectangle**.
 16. "Like a **square**, a **rectangle** has four sides, but it has two short **lines** and two long **lines** instead of four sides all the same length."
 17. "Let's read '*Rectangles*' by Mary Salzmann to find out more about **rectangles**."
 18. Read *Rectangles*.
 19. "Now that we know more about **rectangles**, let's see if we can find some in this **collage**."
 20. Say "I see two **rectangles** in this **collage**, can anyone tell me the **color** of one of the **rectangles**?" (**orange or blue**)
 21. Repeat to find the other **rectangle**.
 22. Point to each **rectangle** and say "Great job! You're right, one **rectangle** is **blue** and the other is **orange**." "The **rectangles** have two short **lines** and two long **lines**."
 23. Point to the other shapes in the **collage** and show the students how they are almost like a **square** or **rectangle** but since all the sides are different sizes, they are not.
 24. Say "We are going to create our own **collages** just like the one we have been looking at using **squares** and **rectangles**." "We are going to use a **technique** artists sometimes use. We are going to use the same **colors** as the **collage** to **tear** into **squares** and **rectangles**, but you may put your paper pieces wherever you would like."
 25. Demonstrate how to tear the tissue paper to make squares and rectangles.
 26. Divide students into 4-6 groups (4 students per group maximum) depending on the size of the class.
 27. Each group will receive one piece of wax paper per student and the different colors of tissue paper.

28. Instruct students to rip the paper and place it on the wax paper. Glue is not necessary, as the teacher will be ironing the collage together.
 29. Emphasize that the students should do their best to tear squares and rectangles.
 30. Each student in the group will work individually to create their collage.
 31. As students finish, they will bring their collage to the teacher. The teacher will place the other piece of wax paper on top, and, using low heat and pressure, the teacher will iron the two pieces of wax paper together.
 32. Trim the edges if necessary, punch a hole in the top, and tie a string.
 33. As students finish, have them look through various shape books until all students are finished.
- F. Go A Little Further
1. For students who have difficulty, the teacher can modify this activity by pre-tearing the paper and simply have the students place their pieces on the wax paper.
 2. For students who excel, the teacher can modify this activity by allowing students to work with a group of other students who excel, to create one large collage.
- G. Assessment/Evaluation
1. Students' artwork will be assessed and recorded on a checklist to see if they were able to tear squares and rectangles. (Appendix A)

Lesson Two: “*Head of a Man*”

- A. Daily Objective(s)
 1. Students will examine the painting “*Head of a Man*” by Paul Klee.
 2. Students will follow step-by-step instruction in drawing a head of a man using shapes.
 3. Students will identify circles, rectangles and triangles within the painting by Paul Klee.
- B. Grouping: Small Group Instruction (groups of 8 – 10)
- C. Materials & Preparation
 1. A copy of “*Head of a Man*” by Paul Klee
 2. Three large pieces of chart paper
 3. A large tub of regular crayons
 4. Three package of skin colored (beige, brown, black etc.) crayons for the students to share
 5. One piece of 8”x11” white computer paper for each student
 6. Various shape books (list found in Resources)
 7. Copies of Appendix B to assess and attach to each students drawing
- D. Language of Instruction
 1. Teacher: **artist, copy, shapes, curved line, round, sphere, square, straight line, corners, outline, pyramid**
 2. Students: **art, red, yellow, circle, rectangle, triangle**
- E. Procedures/Activities
 1. Display the artwork by Paul Klee.
 2. Tell the students that the artist made this painting using shapes.
 3. Point out the shapes in the painting. Ask “Do you recognize any **shapes** in this painting?” (**triangle, rectangle, circle**) Outline each shape as students find them and say them.
 4. When a student identifies the circle have the group repeat the word **circle**. Say, “The **circle** has a **curved** line. It is **round**. It looks like a **sphere** or a ball.”
 5. When a student identifies the rectangle have the group repeat the word **rectangle** and say, “The **rectangle** has four **straight lines**. You can see the **corners**. It is like a **square**, but there are two long sides and two short sides.”

6. When a student identifies the triangle have the group repeat the word **triangle** say, “the **triangle** has three **straight lines**. You can see the **corners**. It looks like a **pyramid**.”
7. Say “We are going to draw a head of a man that looks like this one.” First, the teacher will model how to do it.
8. Start by drawing the circle for the head. Say, “This is the **outline** for his head.”
9. Draw the circles for the eyes.
10. Next draw the rectangles for hair.
11. Draw skin by making a square inside the large circle and filling it in with a skin colored crayon. Choose a darker or lighter color for the next square and fill it in. It should take about 5 squares to fill in his face.
12. Divide the students into two groups. One group will look at books while the other group works with the teacher.
13. Hand out a piece of computer paper to each student.
14. The teacher will walk them through the steps as they draw on their own paper.
15. Make sure that all of the students stay with the group, not getting ahead or behind.
16. When everybody is finished collect the drawings and switch groups.
17. Repeat drawing process with group #2.
18. Gather both groups on the floor.
19. Say “There are **shapes** all over our classroom so we are going to play the game ‘I Spy’ to find shapes around the classroom.”
20. Give two properties as clues for a student to figure out the item. (A couple examples to follow.)
 - a) “I spy a **rectangle** that is clear and you see through it.” Answer: window
 - b) “I spy a **circle** that large and you bounce it.” Answer: ball

F. Go A Little Further

1. For students who have difficulty the activity can be modified by giving them pre-cut shapes to place on a circle to create the head. The students would simply color them in.
2. For students who excel the activity can be modified by having the students look at the painting and, without teacher modeling, allow the students to draw their “man”.

G. Assessment/Evaluation

1. Use Appendix B to assess and record students’ ability to draw rectangles, triangles, and circles.

Lesson Three: “*Rhythms*” and Patterns

- A. Daily Objective(s)
 1. Students will continue a two-color pattern.
 2. Students will use a pattern card to create a two-color pattern using teddy bear counters.
 3. Students will create and verbally describe a pattern using teddy bear counters.
- B. Grouping: whole group instruction, small group practice, individual assessment
- C. Materials & Preparation
 1. A copy of “*Rhythms*” by Sonia Delaunay
 2. Two white circles and two black circles cut out of construction paper for each student (They should be $1 \frac{1}{2}$ ” in diameter)
 3. A copy of Appendix C for each student
 4. A large tub of green and blue teddy bear counters
 5. Glue

6. A copy of Appendix D for each student (This is a pattern card for the students to follow in creating a pattern with the teddy bear counters. The teddy bears on Appendix D need to be colored green and blue in an AB pattern.)
7. A copy of Appendix E for each student (There are four assessment records on the page. Cut into fourths.)

D. Language of Instruction

1. Teacher: **pattern, pattern card, continue the pattern, extend the pattern**
2. Students: **blue, green, circle, white, black**

E. Procedures/Activities

1. Display the artwork by Sonia Delaunay.
2. Tell the students that an artist made this painting using patterns. Say “A **pattern** is something that repeats itself.”
3. Point out the patterns in the painting. Show the students that one of the patterns goes from the top to the bottom, black circle, white circle, black circle, white circle.
4. Show the students Appendix C. Tell them that they will each receive one of these papers. Say “You are going to **continue the pattern**.” They will receive two white circles and two black circles, cut out of construction paper. They will glue the black and white circles in the way that continues the pattern.
5. Pass out Appendix C, two white circles, two black circles, and glue to each student.
6. Monitor how well the students understand their task. If they do not understand, stop them and chant how the pattern should go.
7. When everyone has continued their pattern collect their papers. “Read” the correct pattern with the whole group. Have the students say with you, “**White, black, white, black, white, black.**”
8. Say “Now that you have **extended a pattern** I am going to have you make a **pattern** that looks just like this one on this **pattern card**.”
9. Have the students “read” the pattern card with you by saying, “**Green, blue, green blue, green, blue.**”
10. Hand out a pattern card, three green teddy bears, and three blue teddy bears to each student and have them create a pattern just like the pattern on the pattern card.
11. After examining and recording how each student is able to create a pattern using a pattern card, collect the teddy bear counters.
12. Have the students line up boy, girl, boy girl. Point out the pattern.

F. Go A Little Further

1. For students who have difficulty allow them to work with a partner. In this case you don’t want to assess the child because it wouldn’t be a pure assessment.
2. For students who excel ask them to use different colors of teddy bear counters to make the same type of pattern. For even more difficulty ask them to use two different shapes.

G. Assessment/Evaluation

1. Use the assessment on Appendix E to record your observations of the students understanding and ability to extend a pattern and to create a pattern using a pattern card. The last question isn’t applicable at this time.

Lesson Four: “Broadway Boogie-Woogie”

A. Daily Objective(s)

1. Students will examine “Broadway Boogie-Woogie” by Piet Mondrian.
2. Students will create a two-color pattern using linking cubes.
3. Students will identify and label the single common attribute of a group of objects. (squares)
4. Students will identify and label verbally that the work of art has straight edges.
5. Students will identify and label verbally the differences used for classification of objects.

B. Grouping: Whole group instruction

C. Materials & Preparation

1. “Broadway Boogie-Woogie” by Mondrian
2. Copy of “The Snail” by Henri Matisse
3. Copy of “Rhythm” by Sonia Delalunay
4. Five blue and five yellow linking cubes per student
5. A copy of Appendix F to assess each student

D. Language of Instruction

1. Teacher: **artist, shape, straight line, color, square, rectangle, pattern, painting, same, different, cubes, straight edges, circles, black, white, blue, green, yellow**
2. Students: **blue, yellow, red, white, square, same/different, pattern, painting, ripped edges, straight edges**

E. Procedures/Activities

1. Show the print of “The Snail” and “Broadway Boogie-Woogie.”
2. Ask “Does anyone remember the name of this **painting**?” (“The Snail”)
3. Say “Right! Now let’s look at this other **painting**. It is called ‘Broadway Boogie-Woogie.’”
4. Wait a few seconds for students to stop giggling!
5. Ask “What do you see that is the **same** about these two **paintings**?” Have students say “I see that ____ is/are the **same** in both paintings.” (**squares, red, blue, yellow, and white**)
6. Say “You’re right- now let’s look more closely at these two **paintings**, what is **different** about the squares?” Have students answer using the sentence guideline as above except use **different** instead of **same**. (“The Snail” has ripped edges and “Broadway Boogie Woogie” has straight edges, orange only in “Broadway”)
7. Give hints if necessary as some differences may not be immediately obvious.
8. Say “Remember when we talked about **patterns** with the **painting** “Rhythm”?”
9. Show painting “Rhythm.”
10. Say “Who can tell me what a **pattern** is?” (something that repeats itself)
11. “What were the **patterns** we talked about?” (circles, black / white, blue/green)
12. Show both “The Snail” and “Broadway...”
13. “Which painting looks more like a **pattern**?” (“Broadway...) Have students use a complete sentence again (“Broadway Boogie-Woogie” looks more like a **pattern**.)
14. Ask students to tell you what shape they see in the **painting**. (squares) “You’re right. ‘Broadway’ looks more like a **pattern** because it has **squares** that are repeating themselves.”
15. Point to examples of the various two color patterns. (red/yellow, blue/yellow)
16. “Can you find any other **patterns** like those I just showed you?”
17. Have students take turns pointing out various patterns while saying the colors out loud.
18. Say “Since linking **cubes** are **square** shaped, let’s use them to create our own **patterns** using two colors.”

19. "What color are your linking cubes?" (Make sure the whole group says the colors **blue and yellow**)
20. "Let's use these **cubes** to make a **pattern**"
21. "Take a blue **cube** and place it in front of you" "Now take a **yellow** and put it right next to the **blue** one."
22. "Let's read our **pattern** so far." (Make sure the whole group says the colors **blue and yellow**)
23. "Great! Now, which color do you think we will put next to the yellow cube?" (**blue**)
24. "Everyone put a **blue** cube right next to your **yellow** one." "Now, let's read our **pattern again.**" (**blue, yellow, blue**)
25. Continue activity as above until all cubes are used.
26. "Let's read our whole **pattern.**" (**blue, yellow, blue, yellow, blue, yellow**, etc...)
27. Pair each student with a partner.
28. "You did a great job! Now, working with your partner, I would like you to make a **different pattern** with your **cubes.**"
29. Give students time to work on various patterns.
30. Have each group read their pattern to the class. Make adjustments on their pattern if necessary and explain why.
31. When students are lining up to go outside, have them line up in a pattern of your choosing. (boy/girl, tall/short etc...) See the Preschool Sequence page 114 for suggestions.
32. Ask students what the pattern is.

D. Go A Little Further

1. For students who have difficulty, the teacher can modify this activity by spending more time showing examples of patterns and having the students continue to experiment with patterns. The teacher can also continue the original activity of the blue/yellow pattern but only use two cubes of each color to make the pattern smaller.
2. For students who excel, the teacher can modify this activity by discussing and showing examples of more complicated patterns such as AABAAB or ABBABB and allow students time to create these patterns with the cubes.

E. Assessment/Evaluation

1. Students will meet with the teacher one-on-one. The students will be asked to make a pattern with two colors. Answers will be recorded on a checklist. (Appendix F)

Lesson Five: Red Interior Labeling

A. Daily Objective(s)

1. Students will classify objects/pictures using a single criterion.
2. Students will identify and label verbally the single, common attribute or characteristic of a group of objects/pictures.
3. Students will identify and label verbally the differences or criteria used for classification of several groups of objects/pictures.

B. Grouping: Whole Group Instruction

C. Materials & Preparation

1. A copy of "*Red Interior/Blue Table*" by Henri Matisse
2. One piece of 8"x11" computer paper for each student
3. One copy of Appendix G, laminated (it will be used as an assessment tool)
4. One copy of Appendix H for the assessment
5. A copy of Appendix I for each student (to record each child's assessment)
6. A few items from the kitchen: pan, fork, cup, spatula, salt, etc.
7. A few items from the bedroom: pillow, shoes, hanger, alarm clock, blanket, etc.
8. Teddy bear counters

9. Pattern blocks
 10. Tangrams
 11. Small animals for sorting
- D. Language of Instruction
1. Teacher: **artist, classify, the same as, sort**
 2. Students: **same, different, art, shapes, red, yellow, circles, rectangles, triangle**
- E. Procedures/Activities
1. Gather the students together on the floor. Tell the students that we are going to **sort and classify** some things from home. Say, “We are going to **sort** some items that I brought from my house. **Sort** means to separate things that are the same and put them into a group.” “When we want to put them into a group, we say we want to **classify** them.”
 2. Ask the students to tell you some things that a person would find in a bedroom and a kitchen.
 3. Show the items you brought in and show them two at a time. Ask the students, “Does this item go in the **same** room as the other one or a **different** room as the other one?” Have the students say “**same**” or “**different**.” Then ask, “Which room does it belong in?”
 4. When everything is in two piles (kitchen and bedroom) ask the students to tell you what is the same (common attributes) about the items in each individual group and what are the differences between the two groups.
 5. Display the artwork by Paul Klee.
 6. Ask the children where they think this painting is taking place. (If the children have a difficult time coming up with an answer ask them if it is taking place at school or at home.)
 7. Split the class into two groups. Have one group work with another adult to sort teddy bear counters or small animals. Make sure the adult asks the children to verbalize the common attributes and differences.
 8. The other group needs to work with an adult to sort pattern blocks or tangrams. Make sure the adult asks the children to verbalize the common attributes and differences.
 9. While they are sorting with an adult pull one child aside at a time to do the classifying assessment.
- F. Go A Little Further
1. For students who have difficulty, help them to do some extra sorting of toys, colors, shapes etc. They need some extra practice with a teacher one-on-one. If the teacher doesn't have the time to do it, send a note home with specific activities for the parents to do some extra practice sorting with the child.
 2. For students who excel, have them sort items in the kitchen in more specific categories such as: “things used for cooking,” “things used to eat with,” “food,” etc.
- G. Assessment/Evaluation
1. Use Appendices G, H and I to assess each child's understanding and ability to classifying items found in two rooms. The pictures need to be put in piles on Appendix H. Appendix I is for recording and filing into the child's file.

VI. CULMINATING ACTIVITY

A. Art and Math Festival

1. Have all the art pieces discussed during the week hanging in different places in the room.
2. At each “center”, place the “What we learned” posters next to the painting. (Appendices F-I)
3. Each center is another opportunity to assess the student’s comprehension of the concepts taught during this unit. Use the same assessments from the individual lessons and attach them to the original assessment for comparison. This will give the teacher an opportunity to see if the child retained the concepts from earlier in the week.
4. Each center should have a parent or other adult helper.
5. Each center should have books appropriate to the concept available for students who finish early. See suggestions in the bibliography.
6. Center #1- “*The Snail*” Provide a variety of colors of construction paper and have students cut out rectangles and squares to make a “snail”. Use Appendix A to assess and put in student’s file.
7. Center #2- “*Head of a Man*” Provide sponges cut into circles, squares, triangles and rectangles, and tempera paint, and have students make a picture of their choosing. They will share with the class what their picture is about and the shapes they used. Use Appendix B to assess and put in student’s file.
8. Center #3- “*Rhythms*” and “*Red Interior/Blue Table*” Provide students with various items that are round, (ex. Coins, lollipop, checkers, rocks, buttons etc...), items that are other shapes, and a magnifying glass. Students will use Appendix J to sort and classify the shapes as “Circles” or “Not Circles” and then examine the circle items under the magnifying glass. Use Appendices C and K for assessment.
9. Center #4 - “*Broadway Boogie-Woogie*” Provide students with Play-Dough and small square cookie cutters. Have students choose two colors and have them cut out squares. They will make a pattern with the pattern cards provided or on their own.
10. Center #5-School Bus Snacks! Put the following items at the center for each student to make their snack: one graham cracker, yellow frosting, two pieces of Chex cereal, two pieces of Life cereal, two Mini Oreo cookies, 1/12th of a Hershey bar, paper plate, plastic knife, copy of Appendix P (just for the center as a visual help to students)

VII. HANDOUTS/WORKSHEETS

- A. Appendix A -- Assessment for “*The Snail*” (recognizing squares and rectangles)
- B. Appendix B-- Assessment for “*Head of a Man*” (drawing rectangles, triangles and circles)
- C. Appendix C-- Extending patterns
- D. Appendix D -- Pattern Card
- E. Appendix E -- Assessment for extending and creating patterns
- F. Appendix F-- Assessment for “*Broadway Boogie-Woogie*” (two-color patterns)
- G. Appendix G -- Pictures for classifying
- H. Appendix H-- Classifying groups
- I. Appendix I-- Assessment checklist for classifying
- J. Appendix J-- “Art and Math Festival- What We Have Learned” poster
- K. Appendix K-- “Art and Math Festival- What We Have Learned” poster
- L. Appendix L-- “Art and Math Festival- What We Have Learned” poster
- M. Appendix M-- “Art and Math Festival- What We Have Learned” poster
- N. Appendix N-- Graph for Center #3
- O. Appendix O-- Assessment for Center #3 – sorting and classifying
- P. Appendix P-- School Bus Snack directions for center #5

IX. BIBLIOGRAPHY

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Appendix A

APPENDIX A

***THE SNAIL
Assessment***

Student pointed to the rectangles in
the painting when asked:

Yes / No

Student traced around the square in
the painting when asked:

Yes / No

Other comments:

Student's Name:

Date Assessed:

Teacher:

Appendix B

Name _____

1. Draw a rectangle here:

2. Draw a circle here:

3. Draw a triangle here:

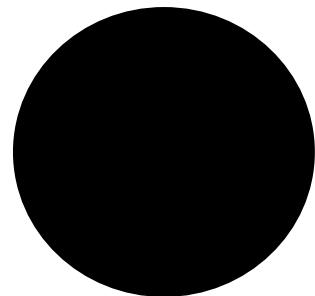
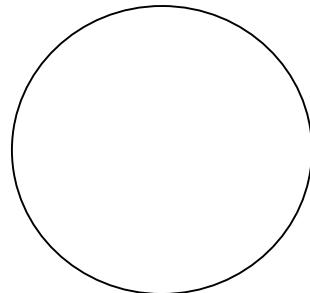
Circle Yes, No, or Partially

Did the child draw a rectangle? Yes No Partially

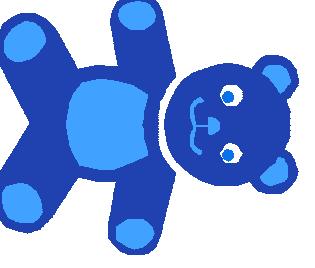
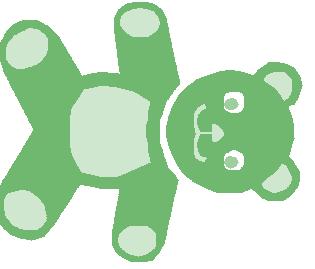
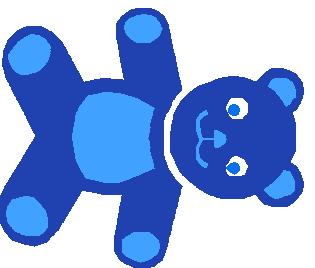
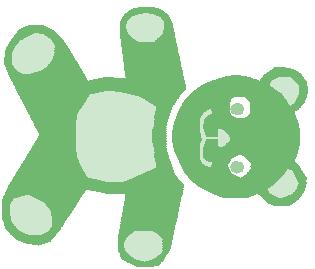
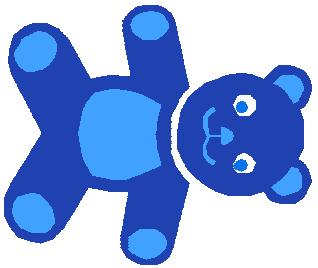
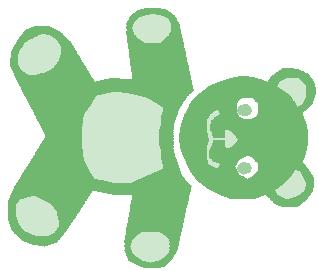
Did the child draw a circle? Yes No Partially

Did the child draw a triangle? Yes No Partially

Appendix C



Appendix D



Appendix E

Name _____

Circle Yes, No, or Partially for each question.

Did the child extend the pattern correctly? Yes No Partially

Did the child create the pattern just like the pattern on the pattern card? Yes No Partially

Ask the child to describe the pattern to you. Record the child's answer here:

Could the child create a pattern without a pattern card? Yes No Partially

Name _____

Circle Yes, No, or Partially for each question.

Did the child extend the pattern correctly? Yes No Partially

Did the child create the pattern just like the pattern on the pattern card? Yes No Partially

Ask the child to describe the pattern to you. Record the child's answer here:

Could the child create a pattern without a pattern card? Yes No Partially

APPENDIX F

Broadway Boogie-Woogie Assessment

Student was able to
create a 2-color pattern
using linking cubes:

Yes / No

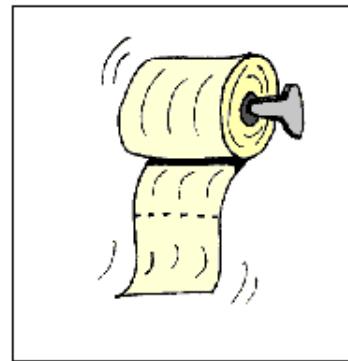
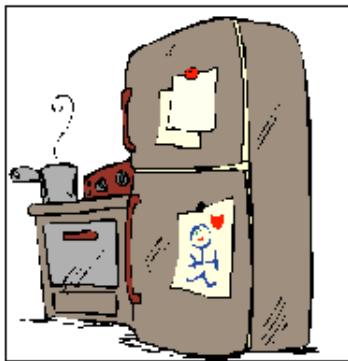
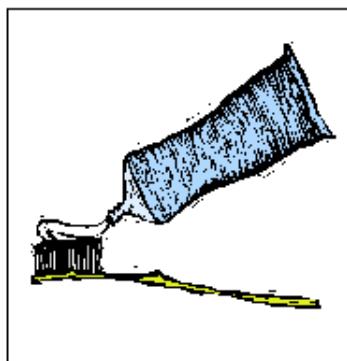
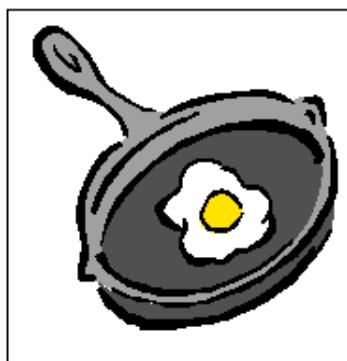
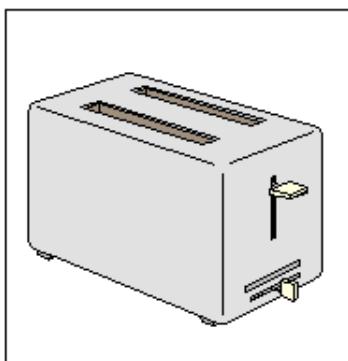
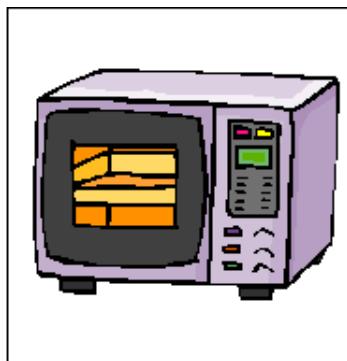
Comments:

Student's Name:

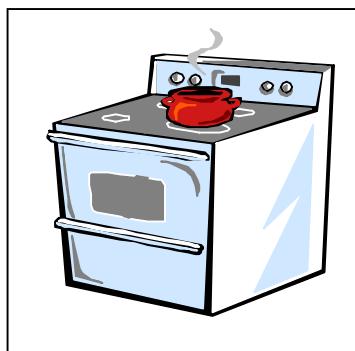
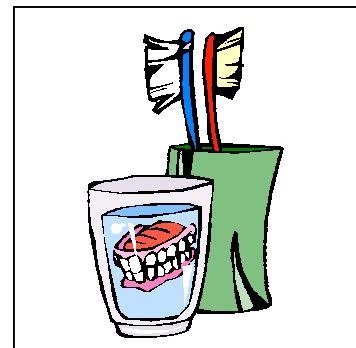
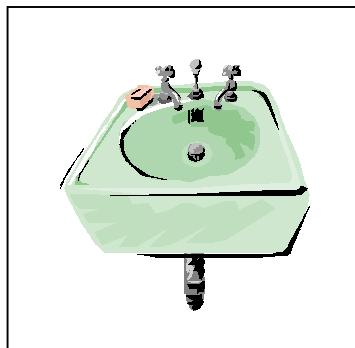
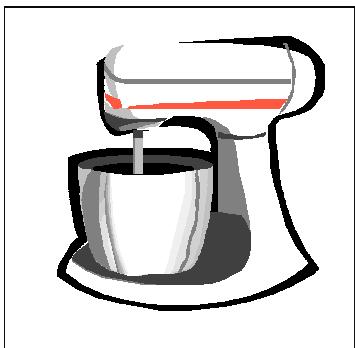
Date Assessed:

Teacher:

Appendix G



Appendix G Continued



Appendix H

Kitchen

Bathroom

Appendix I

Name _____

1. Ask the child to classify the pictures on the page under kitchen or bathroom. Could the child classify the objects? Yes No Partially
2. Ask the child what is the same in each group. Record the child's answer here:

Could the child verbalize the common attribute of each group? Yes No Partially

3. Ask the child what is different about the two groups. Record the child's answer here:

Could the child verbalize the differences in each group? Yes No Partially

APPENDIX K

"What We Have Learned" Center #2 Head of A Man- Paul Klee

We learned about

- circles
- rectangles
- triangles
- straight lines
- Paul Klee



"What We Have Learned" Center #3

Rhythm- Sonia Delaunay

Red Interior/Blue Table- Henri Matisse

We learned about

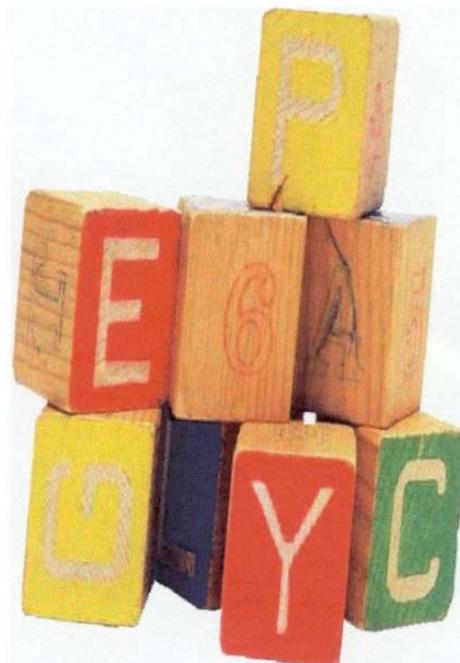
- circles
- patterns
- sorting
- classifying
- Henri Matissee
- Sonia Delaunay



"What We Have Learned"
Center #4
Broadway Boogie-Woogie-- Piet Mondrian

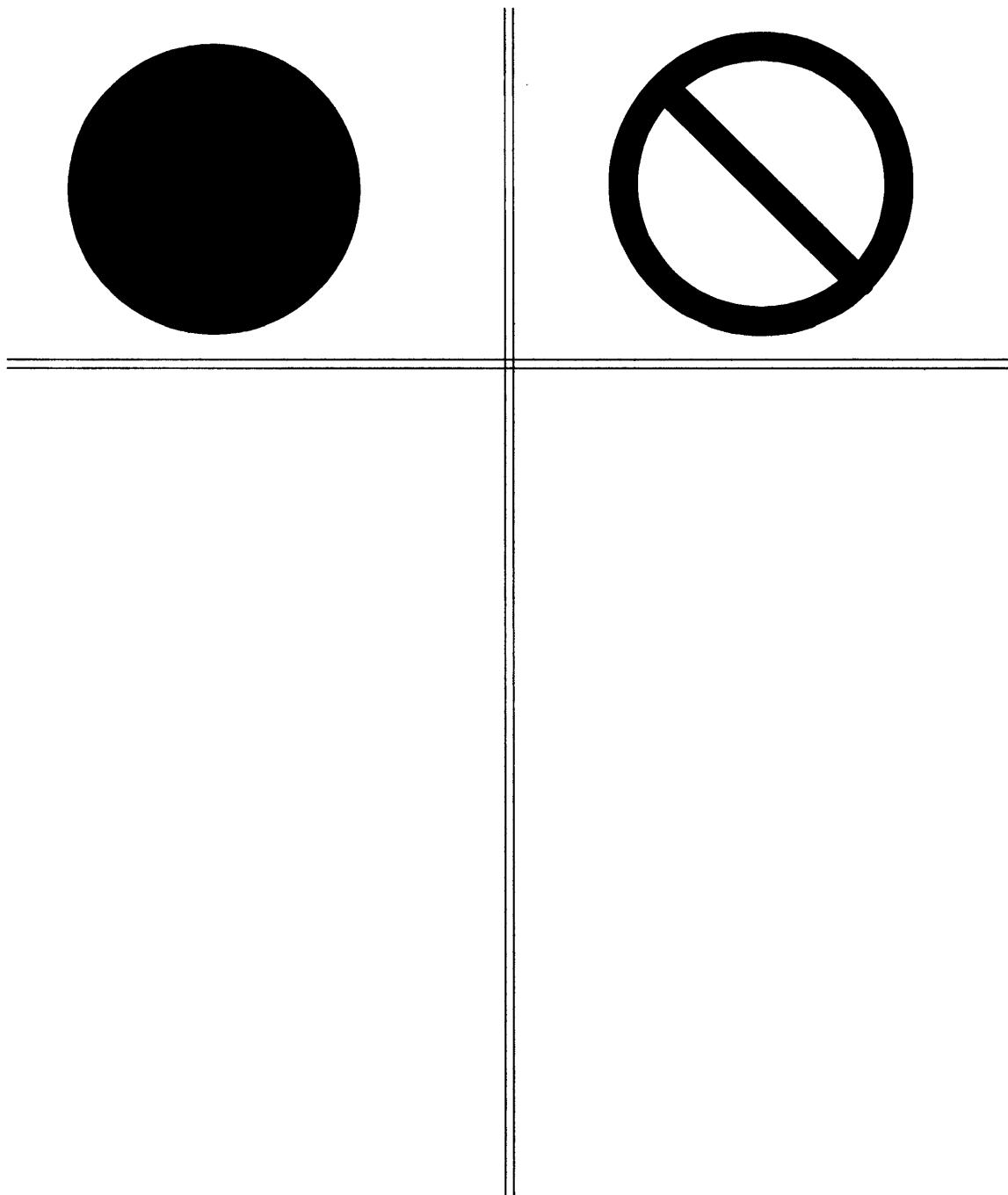
We learned about

- squares
- 2-color patterns
- finding patterns
- creating patterns
- Piet Mondrian



Appendix N

Graph for Center #3



APPENDIX O

Assessment for Center #3 Sorting and Classifying

Student showed ability to find circle objects:

Yes/No

Student showed ability to place circle objects in
the correct column:

Yes/No

Student demonstrated ability to verbally explain
why objects were placed in the columns:

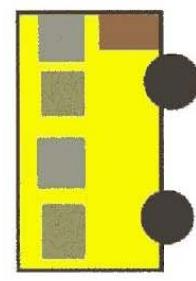
Yes/No

Comments:

Student's Name:

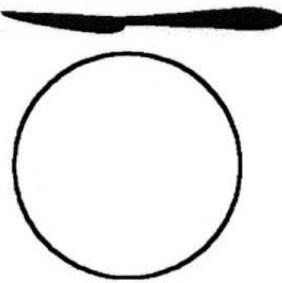
Date Assessed:

Teacher:



School Bus Snack

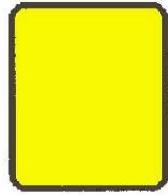
1. Take 1 paper plate
and 1 plastic knife.



2. Take 1 graham cracker



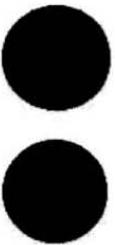
3. Spread yellow frosting on your graham cracker.



4. Make a pattern with the square cereal.



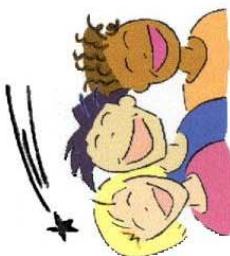
5. Add 2 Oreo cookies.



6. Put 1 piece of chocolate on
your bus.



7. Time to eat! Yummy!



Appendix P