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Preschool

MATH
Teacher's Guide

CALVERT PRESCHOOL

MATH

Teacher's Guide

Lessons 1-180

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CALVERT™
PUBLICATIONS

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INTRODUCTION

Welcome to the *Calvert Preschool Math Teacher's Guide*. This book was written to align the learning activities in the Calvert Preschool program to recognized standards.

Purpose

This book has two purposes. One, on a lesson by lesson basis, it lists the student performance objective(s) for each topic strand in the Calvert Preschool program. Two, those objectives have then been correlated to the NAEYC Early Childhood Program Standards for this age group. Each Lesson in this guide lists both the **Objectives** for the different activities and the **Standards** that the activities can address.

Objectives

A clearly stated objective is the stepping stone for student achievement and success. The objectives in this guide list criteria for the student's performance. They state what the student should be able to do at the completion of the lesson. You will find objectives helpful in determining the student's progress, the need for remedial work, and readiness for more advanced information. Objectives are stated in terms of student performance.

Standards

National Association for the Education of Young Children, Early Childhood Program Standards (NAEYC)

The objectives for the Calvert Preschool lesson activities have been aligned to the following NAEYC standards:

2. Curriculum

Program Standard: The program implements a curriculum that is consistent with its goals for children and promotes learning and development in each of the following areas: social, emotional, physical, language, and cognitive.

Rationale: A curriculum that draws on research assists teachers in identifying important concepts and skills, as well as effective methods for fostering children's learning and development.

When informed by teachers' knowledge of individual children, a well-articulated curriculum guides teachers so they can provide children with experiences that foster growth across a broad range of developmental and content areas. A curriculum also helps ensure that the teacher is intentional in planning a daily schedule that (a) maximizes children's learning through effective use of time, materials used for play, self-initiated learning, and creative expression, as well as (b) offers opportunities for children to learn individually and in groups according to their developmental needs and interests.

How to use this document

The structure of the Calvert Preschool program is very flexible. It is up to the administrator and teacher to select and determine which of the suggested activities for each lesson are to be included in the learning experience. Because of this flexibility, objectives have been written for each topic strand. As the lesson plan is written the objectives and standards can be included for the topics that are chosen for the classroom activities and experiences. Many of the activities in Calvert Preschool were written to support and enhance an integrated learning experience so often other standards can be included. The standards that have been listed in this document address the core skills of each activity but that list could be expanded based on how the activity is approached by the instructor.

LESSON 1

Learning Objectives and Standards:

Math

- Recognize the number 1
- Trace/Write the number 1
- Be introduced to the calendar

naeyc-2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

naeyc-2.F.07

- Children are provided varied opportunities to build an understanding of time in the context of their lives, schedules, and routines.

Color

- Be introduced to the colors red, green, and blue
- Identify the colors red, green, and blue

naeyc-2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes, such as shape, size, and color.

naeyc-2.J.05

- Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression.

Materials Needed:

- Flashcard with the number 1
- Calendar for bulletin board
- Lesson 1 Math worksheet
- Color flashcards (red, green, and blue)

Optional: Sidewalk chalk

Lesson Plan:

Math: Teach number recognition of 1. For this week, we will be studying the concept of the number 1 with your students. As a teacher, you need to be

aware of the "number 1" concept in all that you do. We will be doing some patterning with the number 1, learning about the number 1 around us, etc. Look for the "number 1" in everything you do with the students to facilitate their acquisition of the concept of the number 1.

Show the students the number 1 flashcard. Ask them the students what the object is and how many objects or animals are on the card. Talk about the shape of the number 1 and ask them what it reminds them of. Have them draw the number 1 in the sand or with chalk on the sidewalk.

Purchase or make a perpetual monthly calendar for one of the bulletin boards of the classroom. Make 12 monthly banners and 31 calendar pieces. You will need a row for the days of the week and six rows of seven squares on which to hang or pin the calendar cards.

Point to your beginning school date on the calendar, and then say, this is day 1 of the school year. Point to the week that begins the school year, and this is week 1 of school. If you have hung cards for the week of the school year, point out the Week 1 card. You can point out the number 1 on the calendar. Explain that the days of the month are numbered. The number 1 is used to count the first day of the month. Find other ways to illustrate the concept of the number 1. The line leader will be person number 1 in our line. Have the

line leader carry a number 1 flashcard as you move from place to place in lines.

Do the Lesson 1 Math worksheet. Identify the pictures and count the number of items in each group. Example: 1 tree, 1 house, 1 car, etc. Draw lines to match the pictures with one item. Remember that all pages should be removed from the student workbook to promote good penmanship.

Color: Introduce the colors red, green, and blue. Point out the red and blue colors in the American flag. Talk about grass being the color green. Ask the students to find things in the classroom that are red. What things do they see that are green? What things can they find that are blue? Show them the red, green, and blue flashcards. Associate the items on the cards with the colors. If this is too many colors to cover at one time focus on one color for 2-3 days and then add another for 2-3 days until all three colors can be recognized by the students. These three colors will be reviewed for about two weeks and then one new color will be introduced at a time.

Throughout the curriculum, you will find notes referring to a color to teach your students. We suggest you teach the colors by utilizing a natural, relaxed teaching style. We also suggest you concentrate on one color at a time. For example, when teaching the color red,

you may choose to serve students a red apple, commenting on the fact that the apple is red. Children may be wearing red or blue shirts. Every time you see red, for example, comment on the color. When describing an object, name its color. You may also have a color day where everything eaten is the color you are learning and, you and the students wear that color.

LESSON 2

Learning Objectives and Standards:

Math

- Recognize the number 1
- Identify pictures that show the value of 1
- Cut and paste objects that show the value of 1

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

naeyc - 2.J.05

- Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression (e.g., cutting, gluing, and caring for tools).

Shapes

- Identify the properties of a triangle
- Create triangles of varied sizes

naeyc - 2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes, such as shape, size, and color.

naeyc - 2.F.06

- Children are provided varied opportunities and materials to understand basic concepts of geometry by, for example, naming and recognizing two- and three-dimensional shapes and recognizing how figures are composed of different shapes.

naeyc - 2.J.05

- Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression (e.g. cutting, gluing, and caring for tools).

Color

- Review the colors red, blue, and green
- Identify the colors red, blue, and green

naeyc - 2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes such as shape, size, and color.

naeyc - 2.J.05

- Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression.

Materials Needed:

- Lesson 2 Math worksheet
- Kid scissors
- Construction paper
- Glue

Lesson Plan:

Math: Review number recognition of the number 1. Ask the students questions about items in quantities of 1 regarding their bodies. Ask the students, "How many noses do you have?" "How many heads do you have?" "How many mouths do you have?" "How many chins do you have?" "How many necks do you have?" "How many hearts do you have?" "How many stomachs do you have?" "How many backs do you have?" Have them draw the number 1 in the air or on the board. If your students form a line to go outside or to the restroom, point out the students that are standing tall and straight by saying, "I see a 1 here." "I see another 1 here." Then use your pointer finger to trace a number 1 in the air over the students who are standing tall.

Do the Lesson 2 Math worksheet. Cut out the numbers from the strip. Help the students as needed with cutting out the numbers. Count each group of objects and paste the correct number in the box.

Shapes: Students will learn how to use scissors. Provide children's scissors for each student. Give each student a piece of construction paper, using

all different colors. Show them some examples of triangles. Pass out several samples that can be traced and cut out or draw the shapes on light colored construction paper for the students. Ask them to cut out triangles of all sizes and colors. See how many they can cut out of one piece of paper. If there is more than one student, let them trade triangles with other students, collecting lots of colors. Share with the children how thankful we are that there are so many beautiful colors in our world. Make sure that there is time for cleaning up, placing all of the trash in the trash can.

Color: Review the colors red, green, and blue.

LESSON 3

Learning Objectives and Standards:

Math

- Recognize the number 1
- Identify pictures that show the value of 1
- Count from 1-10
- Learn a counting rhyme

naeyc - 2.E.06

Children are regularly provided multiple and varied opportunities to develop phonological awareness:

- Children are encouraged to play with the sounds of language, including syllables, word families, and phonemes, using rhymes, poems, songs, and finger plays.

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

Shapes

- Identify the properties of a triangle
- Make a triangle puppet
- Learn a rhyme about a triangle
- Trace and color a triangle

naeyc - 2.E.06

Children are regularly provided multiple and varied opportunities to develop phonological awareness:

- Children are encouraged to play with the sounds of language, including syllables, word families, and phonemes, using rhymes, poems, songs, and finger plays.

naeyc - 2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes, such as shape, size, and color.

naeyc - 2.F.06

- Children are provided varied opportunities and materials to understand basic concepts of geometry by, for example, naming and recognizing two- and three-dimensional shapes and recognizing how figures are composed of different shapes.

naeyc - 2.J.04

Children are provided varied opportunities to learn new concepts and vocabulary related to:

- drama.

naeyc - 2.J.05

- Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression (e.g., cutting, gluing, and caring for tools).

naeyc - 2.J.06

Children are provided many and varied open-ended opportunities and materials to express themselves creatively through:

- d. two- and three-dimensional art.

Color

- Review the colors red, blue, and green
- Identify the colors red, blue, and green

naeyc - 2.F.03

- a. Children are provided varied opportunities and materials to categorize by one or two attributes such as shape, size, and color.

Materials Needed:

- Lesson 3 Math worksheet
- Red, green, or blue crayon, marker, or colored pencil for each student.
- Counting Train (pattern in Calvert Preschool Math Resource Packet)
- Construction paper (red, green, and blue)
- Kid scissors
- Craft sticks
- Lesson 3 Shapes worksheet

Lesson Plan:

Math: Review number recognition of 1. Ask the students questions about items of 1 regarding the classroom. Ask the students: "How many ceilings are in the room?" "How many clocks are on the walls of the room?" "How many floors are in the room?" "How many red cabinets are in the room?" "How many blue balls are in the room?" "How many green plants are in the room?" "How

many trucks are on top of the book shelf?" Use any question that has the number 1 for an answer. Mix in a review of colors and position words, if possible.

Do the Lesson 3 Math worksheet. Count each group of items and circle the correct number for the group.

Teach oral counting of the numbers 1-10. Make a Counting Train with an engine, ten cars, and a caboose. Patterns can be found in the Calvert Preschool Resource Packet. Plan to extend the train to include the numbers 11-20. This should be large enough to hang above the white board or over a bulletin board. You can make the train from construction paper or simply draw and color a train on banner paper. Color the boxcars with the colors that will be learned this year. 1 should be red, 2 green, 3 blue, 4 black, 5 white, 6 yellow, 7 brown, 8 pink, 9 purple, and 10 orange. Plan to extend the train to include the numbers 11-20 once the numbers 1-10 have been mastered.

Introduce the students to the Counting Train. Point out that there are 10 boxcars in the train to help learn counting 1-10, and that each boxcar is a different color that will be learned during the year. With a pointer or yardstick, point to the numbered boxcars and have the students count after you. The students are not expected to recognize the numbers or to count objects to 10; they are simply memorizing how to say the number words in the order 1-10.

Learn the "One, Two, Buckle My Shoe" rhyme/song to help learn counting 1-10. Use the 1-10 lines of either of the two versions below.

"One, Two Buckle My Shoe"

One, Two—buckle my shoe;
 Three, Four—open the door;
 Five, Six—pick up sticks;
 Seven, Eight—lay them straight;
 Nine, Ten—a good fat hen.

Eleven, Twelve—I hope you're well;
 Thirteen, Fourteen—draw the curtain;
 Fifteen, Sixteen—the maid's in the kitchen;
 Seventeen, Eighteen—she's in waiting.
 Nineteen, Twenty—my stomach's empty.

"One, Two Buckle My Shoe"

One two buckle my shoe;
 Three, four, knock at the door;
 Five, six, pick up sticks;
 Seven, eight, lay them straight;
 Nine, ten, a big fat hen.

Eleven, twelve, dig and delve;
 Thirteen, fourteen, maids a-courting;
 Fifteen, sixteen, maids in the kitchen;

Seventeen, eighteen, maids in waiting;
 Nineteen, twenty, my plate's empty.

Shapes: Introduce the shape of the triangle. Show your student what a triangle is and count the sides of the triangle. Look around the room, pointing out any triangle shapes. Use a triangle you have made with wooden craft sticks as a visual aid. Also make a stick puppet for triangles. You will make one of these for each shape that is taught. To make the puppet, cut a triangle out of construction paper and glue it to a craft stick. Allow students to make their own triangles with craft sticks. Repeat the poem below while holding up the triangles.

"Timmy Triangle"

I'm a triangle;
 Timmy's my name.
 I have three sides;
 I play a little game.

I pretend to stand upon my head. (Turn triangle to a side.)
 I lay on my side. (Turn triangle to another side.)
 I lay on my bed. (Continue to turn to 3rd side of triangle.)

Some people don't see the difference in me.

They just see three sides; one, two, and three.

(Count sides as you say the number, tapping each side.)

Note: The objective is for your student to recognize the shape of the triangle. He will, by practice, learn to count to three, but this is not the primary objective. Let your student manipulate the stick triangles. Allow adequate time for the child to internalize what he has just learned. He will do this by playing with the puppet.

Do the Lesson 3 Shapes worksheet. Have the students trace the triangle with a red, green, or blue crayon.

Color: Review the colors red, green, and blue. Hold up colored sheets of construction paper. See if the students can correctly identify the color.

LESSON 4

Learning Objectives and Standards:

Math

- Complete a scavenger hunt to find one item
- Trace lines to show relationship between one item and the number 1
- Count from 1-10
- Learn a counting song

naeyc - 2.B.05

- Children have varied opportunities to develop skills for entering into social groups, developing friendships, learning to help, and other pro-social behavior.

naeyc - 2.B.06

Children have varied opportunities to:

- interact positively, respectfully, and cooperatively with others.

naeyc - 2.C.04

Children have varied opportunities and are provided equipment to engage in large motor experiences that:

- help them learn physical games with rules and structure.

naeyc - 2.E.06

Children are regularly provided multiple and varied opportunities to develop phonological awareness:

- Children are encouraged to play with the sounds of language, including syllables, word families, and phonemes, using rhymes, poems, songs, and finger plays.

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

Shapes

- Color and cut out a triangle

naeyc - 2.C.03

- Children are provided varied opportunities and materials that support fine-motor development.

naeyc - 2.E.06

Children are regularly provided multiple and varied opportunities to develop phonological awareness:

- Children are encouraged to play with the sounds of language, including syllables, word families, and phonemes, using rhymes, poems, songs, and finger plays.

naeyc - 2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes such as shape, size, and color.

naeyc - 2.F.06

- a. Children are provided varied opportunities and materials to understand basic concepts of geometry by, for example, naming and recognizing two- and three-dimensional shapes and recognizing how figures are composed of different shapes.

naeyc - 2.J.05

- a. Children are provided varied opportunities to develop and widen their repertoire of skills that support artistic expression (e.g., cutting, gluing, and caring for tools).

Color

- Review the colors red, green, and blue
- Identify the colors red, green, and blue

naeyc - 2.F.03

- a. Children are provided varied opportunities and materials to categorize by one or two attributes, such as shape, size, and color.

Materials Needed:

- Items for scavenger hunt
- Lesson 4 Math worksheet
- Lesson 4 Shapes worksheet
- Red crayon, marker, or color pencil.
- Counting Train
- Construction paper (red, green, and blue)

Lesson Plan:

Math: Review number recognition of the number 1. Send your students on a scavenger hunt. Have them find one of the following items: one sock, one shoe, one teddy bear, one piece of candy (make sure there is enough candy for all students), one ruler, or one pencil. Make sure these are around the room. Students may work together. Reward each student with one hug.

Do the Lesson 4 Math worksheet. Count each group of items and draw a line to the correct number.

Learn the “This Old Man, He Played One” song to help learn counting. Just work on verse one.

“This Old Man, He Played One”

Verse 1

This old man, he played one, He played nick-nack on my thumb;

with a nick-nack paddy whack, give a dog a bone. This old man came rolling home.

Teach oral counting 1-10 with the Counting Train. Review the “One, Two, Buckle My Shoe” rhyme/song to help learn counting 1-10.

Shapes: Do the Lesson 4 Shapes worksheet. Have the students color the triangles red and then cut them out. They will be making a set of red, blue, and green triangles over the next couple of days. The different sizes and colors can be used for sorting exercises.

Color: Review the colors red, green, and blue. Display two colors of construction paper at a time to the students. Hang them on a line, pin them to a bulletin board, or stand them up on the tray of the board. Put one color of construction paper on the left and another on the right. Ask the students to identify the

LESSON 178

Learning Objectives and Standards:

Math

- Review the concept of addition and subtraction
- Review the correlation between a specific number and an amount of objects
- Solve subtraction and addition problems
- Complete a picture that illustrates understanding of above and below

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

Materials Needed:

- Lesson 178a and 178b Math worksheets
- Crayons, markers, or color pencils
- Kid scissors and glue

Lesson Plan:

Math: Review $6 - 1 = 5$. Practice this problem and review the problems: $1 + 1 = 2$, $2 + 1 = 3$, $3 + 1 = 4$, $4 + 1 = 5$, $5 + 1 = 6$, $2 - 1 = 1$, $3 - 1 = 2$, $4 - 1 = 3$, $5 - 1 = 4$, with a strip of squares drawn on the board.

Do the Lesson 178a Math worksheet. Color and cut out the pictures. Paste the items that should go above the water and paste what should go below the water.

Do the Lesson 178b Math worksheet. Count the dots in the tiles and trace the numbers.

LESSON 179

Learning Objectives and Standards:

Math

- Review the concept of addition and subtraction
- Review the correlation between a specific number and an amount of objects
- Solve subtraction problems

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

Materials Needed:

- Lesson 179 Math worksheet

Lesson Plan:

Math: Review $6 - 1 = 5$. Have the students count off steps to practice addition and subtraction. Review: $1 + 1 = 2$, $2 + 1 = 3$, $3 + 1 = 4$, $4 + 1 = 5$, $5 + 1 = 6$, $2 - 1 = 1$, $3 - 1 = 2$, $4 - 1 = 3$, $5 - 1 = 4$, $6 - 1 = 5$.

Do the Lesson 179 Math worksheet. For subtraction count all of the blocks in the strip, then say, "minus one block equals," and count the blocks that are not covered by an X. Trace the correct number.

LESSON 180

Learning Objectives and Standards:

Math

- Review the concept of addition and subtraction
- Review the correlation between a specific number and an amount of objects
- Solve subtraction problems

naeyc - 2.F.02

- Children are provided varied opportunities and materials to build an understanding of numbers, number names, and their relationship to object quantities and to symbols.

Shapes

- Review the names of each shape learned
- Match shapes that are the same

naeyc - 2.F.03

- Children are provided varied opportunities and materials to categorize by one or two attributes, such as shape, size, and color.

naeyc - 2.F.06

- Children are provided varied opportunities and materials to understand basic concepts of geometry by, for example, naming and recognizing two- and three-dimensional shapes and recognizing how figures are composed of different shapes.

Materials Needed

- Cut out shapes, paper cups and glue
- All previously made student items

Lesson Plan:

Have students show what they have learned by using their counting beads, dog bones, or other things made in class to show counting from 1 to 10, addition, and subtraction.

Cut up many colors of construction paper into various sizes and shapes. Divide the pieces of paper into little

cups for each student. Give the students a piece of white construction-paper and glue sticks. Let them glue the little pieces of colored paper on the white piece to make some designs out of shapes.



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