A NOTE ABOUT THE SAMPLE ACTIVITIES

The following are sample activities designed to show you examples of possible activities for each API. You are not required to use these specific activities in your portfolios. The APIs used in this document come from the column for grades K-2 in the TCAP-Alt Performance Indicators document, which is available on the Tennessee State Department of Education website.

Activities should be written in the past tense (e.g., “[Student’s name] completed . . .”), since the evidence sheet should be filled out after the activity has been completed. Be sure to use the student’s name when describing what he or she did during the activity (e.g., not, “The student counted jellybeans into a plastic cup,” but “Anaxamander counted jellybeans into a plastic cup.”).

Be sure all three activity components are clear: what the student did (i.e., *how* the activity was performed), a clear relationship to the API, and what, if any, materials were used.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.1 *Count how many objects are in a set (1-10)*

Sample Activities:

- Given a box of 10 one-inch rubber balls, [student's name] picked up one ball and dropped it into a coffee can each time the teacher said, "Put one ball in the can."
- With hand-over-hand assistance, [student's name] touched each cotton ball in a row of five cotton balls as the teacher counted them aloud.
- Given 10 wooden blocks, [student's name] dropped the blocks, one at a time, into a pail. The teacher counted the blocks aloud as [student's name] dropped them.
- [Student's name] was given 10 marbles and a jar. As the teacher counted aloud from 1-10, [student's name] dropped one marble into a jar each time a number was spoken.
- When [student's name] was given a set of 1-5 buttons, he/she and counted the buttons aloud. He/she counted five sets of buttons.
- [Student's name] was given 10 sets of teddy bear counters. Each set contained 1-5 bears. Upon request, [student's name] counted each set aloud and told the teacher how many bears that set contained.
- In preparation for painting a mural, [student's name] orally counted the number of peers at his/her table, gave each peer a paint brush, and told the teacher how many total brushes were given.
- Given a peg board and a number of colored pegs, [student's name] orally counted the number of pegs of each color (e.g., three blue pegs, five red pegs, two yellow pegs) and put them in the peg board.
- Given 7 Nerf balls, [student's name] orally counted the balls and placed them in a basket.
- Given a plastic bag and 10 plastic cups, [student's name] orally counted the cups and placed them in the plastic bag.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.2 *Count to 10 by 1's*

Sample Activities:

- On request, [student's name] turned his/her head toward a group of peers singing the song "Five Little Monkeys." (Prerequisite)
- [Student's name] sang along as peers sang the song "Five Little Monkeys."
- Given a plastic disc that, when stepped on, made a ball go up into the air, [student's name] stepped on the disc 10 times and orally counted the number of balls sent into the air each time. When he/she made a counting error, a peer gave verbal prompts as needed. Afterward, [student's name] was asked how many balls had been sent up, and he/she answered correctly.
- After listening to *The Counting Book*, [student's name] orally counted to 10 by ones with verbal prompts from the teacher when he/she missed a number.
- [Student's name] played "Mother-May-I," counting the correct number of steps as directed each turn (e.g., "Take three giant steps forward"; "Take three scissor steps forward"; "Take two baby steps backward.")
- Given a box of 100 paper clips, [student's name] placed the clips into groups of 10.
- While a peer did jumping jacks, [student's name] orally counted how many jumping jacks were done.
- [Student's name] played a jump rope game with peers, orally counting how many jumps each child made before "missing."
- Given 50 pennies, [student's name] organized the pennies into sets of five, then orally counted the sets and the pennies in each set.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.3 *Identify equivalent sets of objects by one-to-one correspondence (1-10)*

Sample Activities:

- Given a bag of miniature marshmallows and a set of number cards, each printed with a number from 1-10 and an equivalent number of dots, [student's name] placed a marshmallow on each dot to create a set equivalent to the number on the card.
- For each of ten sets of 1-5 plastic animals, [student's name] was shown a card with a number (1-5) written on it. [Student's name] answered "yes" or "no" when asked if the number on the card matched the number of animals in the set.
- Given two sets of plastic animals, [student's name] indicated whether the two sets had the same number of animals (thumbs up) or a different number (thumbs down).
- Given a pegboard and 10 colored pegs and shown a second pegboard with 1-10 pegs already placed in the board, [student's name] placed the same number of pegs in his/her pegboard.
- Given modeling clay and shown sets of 1-10 clay balls, [student's name] made a number of clay balls equal to the number contained in each set.
- [Student's name] was given a bag of M&Ms and an egg carton with a number from 1-10 written in the bottom of each individual egg cup. On request, [student's name] placed the correct number of M&Ms into each cup, so that the number of M&Ms in each cup was equal to the number written in the bottom of the cup.
- [Student's name] was given a bag of M&Ms. When the teacher showed him/her a number card 1-10, [student's name] counted out a number of M&M's equal to the number on the card.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.4 *Identify numerals 0-10*

Sample Activities:

- [Student's name] watched the Sesame Street video *Learning About Numbers* and, with help from a paraprofessional, counted aloud along with the characters in the video.
- When given two number cards (1 and 2), [student's name] pointed to the one named by the teacher.
- [Student's name] was given number cards 1-5. As the song "Five Little Monkeys" was played, [student's name] held up the number card that corresponded to the number of monkeys in each verse.
- Given a walk-on number line, [student's name] hopped, jumped, or stepped from the beginning edge of the line to the number requested by the teacher. The teacher made 15 requests, using each number from 1-10 at least once.
- [Student's name] made numbers 1-5 from modeling clay, using number cards as models.
- [Student's name] traced sandpaper numbers 1-5 with a finger and repeated the name of the number after the teacher said it aloud.
- When number cards 1-5 were held in front of [student's name], he/she orally identified the number on the card. When he/she made an error, the teacher helped by asking guiding questions or giving verbal prompts as needed.
- Given twenty-five laminated cards, each printed with a number between 1 and 10, [student's name] used a dry-erase marker to draw a number of dots on the back of the card equal to the number written on the front of the card.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.5 *Identify and name coins (penny, nickel, and dime)*

Sample Activities:

- Given real coins (pennies, nickels, and dimes) and a card with five realistically-represented coins printed on it, [student's name] matched the real coins to those on the card by placing the real coins on top of their printed counterparts.
- Given a penny and a nickel, [student's name] pointed to the penny on request.
- Given realistic-looking plastic coins (penny, nickel, and dime) and asked to identify one (e.g., "Show me the dime"), [student's name] pointed to the correct coin.
- While a peer held a handful of various coins, [student's name] picked out five dimes from the mixed change to purchase a brownie from the school bake sale.
- [Student's name] played Money Bingo with three other peers.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.6 *Count pennies, nickels, and dimes with values up to 50 cents*

Sample Activities:

- Given 10 pennies, [student's name] counted them orally by ones.
- [Student's name] played a money-changing game in which the object was to accrue pennies by answering simple questions correctly at a rate of a penny per answer and "trade up" by exchanging five pennies for a nickel, 10 pennies or two nickels for a dime, etc.
- [Student's name] used nickels and dimes to buy two items from the snack machine with exact change. [Student's name] chose the correct change by matching the coins to cards with pictured coins to equal the cost of the items chosen.
- [Student's name] went to the school bookstore and purchased an item of choice that cost 50 cents or less. He/she chose a pencil. [Student's name] counted out the correct amount of money (with prompts from an adult when he/she made an error or seemed uncertain) and paid the cashier.
- Given real coins and a Money Bingo file folder, [student's name] matched the coins to the pictures on the Bingo game card.
- When provided with plastic pennies, nickels, and dimes, [student's name] orally identified each coin, stated the value of each coin, and counted out a value equal to 50 cents.
- Given real coins and a card picturing the nickels and dimes required to buy a soft drink from the vending machine, [student's name] placed the appropriate coins on their pictured counterparts to determine how much change was needed, then used the change to purchase a soft drink from the machine.
- With the help of a peer, [student's name] used real pennies, nickels, and dimes to count out the exact change to buy a pencil and a writing tablet from the school bookstore.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.7 *Order numbers less than 10*

Sample Activities:

- Given two number cards (1 and 2), [student's name] placed the number cards in numerical order.
- Given 5 two-inch metal train cars, each marked with a number from 1-5, [student's name] placed the cars in numerical order. When the train was correctly assembled, [student's name] "drove" it on a plastic track.
- Given a wooden inset puzzle with slots for the numbers 1-5 in order, [student's name] correctly assembled the puzzle by placing each number in its proper place.
- Given 10 plastic horses, each with a number from 1-10 painted on its back, [student's name] lined up the horses in numerical order.
- Given birthday candles in the shape of numbers, [student's name] placed the candles in order from 1 to 10. Each time [student's name] chose the correct number, the teacher lit the candle and allowed [student's name] to blow it out.
- When shown three 3 x 5 cards, each with a number between 1 and 5 written on it, [student's name] indicated (by pointing) which number came first, next, and last.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*
Alternate Learning Expectation (ALE): NO.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems*

Alternate Performance Indicator (API): NO.1.8 *Use concrete objects to develop strategies for addition of whole numbers to 10*

Sample Activities:

- [Student's name] used a walk-on number line to perform simple addition problems given orally by the teacher (e.g., for 3 + 2, [student's name] would start on the number three and take two steps forward).
- [Student's name] rolled two game cubes and counted the dots on each cube. Then [student's name] said an addition sentence reflecting the numbers on both cubes and solved the addition sentence orally. [Student's name] used computation to solve some problems and counted the total number of dots for others.
- Given Touchpoint cards for the numbers 1-3, [student's name] said each number aloud and counted the corresponding points orally.
- [Student's name] was given an abacus. As the teacher said an addition problem aloud, student's name used the abacus to solve the problem as the teacher stated it. For example, when the teacher said "Three," [student's name] moved three beads to the right; then when the teacher said, "Plus two," [student's name] moved two more beads to the right and told how many beads were there.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.2 *Understand meaning of operations and how they relate to one another*

Alternate Performance Indicator (API): NO.2.1 *Identify the position of a whole number less than 10 on a number line*

Sample Activities:

- [Student's name] and four peers were each given one of a set of 12"x12" cards numbered from 1-5. Each student held up his/her number card. Then, with help from the teacher, [student's name] and peers lined up so that their cards were in numerical order.
- Five of [student's name]'s peers were each given one of a set of 12"x12" cards numbered from 1-5. Each student held up his/her number card. Then, with help from the teacher, [student's name] led each peer to a place in line so that their cards were in numerical order.
- [Student's name] was given a ruler. The teacher asked [student's name] to show a specific number (1-6) on the ruler, and [student's name] pointed to that number on the ruler.
- Given a walk-on number line with numbers from 1-10, [student's name] moved (by hopping, skipping, stepping, etc.) to the number requested by the teacher.
- Given a laminated number line extending from 1-5 with every other number missing, [student's name] used a dry erase marker to fill in the missing numbers.
- Given a blank number line extending from 1-10, [student's name] used a marker to write each number in its proper position on the number line.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.2 *Understand meaning of operations and how they relate to one another*

Alternate Performance Indicator (API): NO.2.2 *Recognize a whole and its parts*

Sample Activities:

- After listening to a peer read *A Apple Pie* by Gennady Spirin, [student's name] touched and held an apple, then watched as the teacher cut it into slices for a snack. [Student's name], the peer, and the teacher discussed how the apple slices were once part of a whole apple.
- Given a wooden pizza puzzle and asked, "May I have the whole pizza?" [student's name] gave the questioner the whole pizza puzzle. When asked, "May I have a slice?" or "May I have two slices?" and so on, [student's name] gave the questioner the requested number of slices.
- After helping make and decorate a chocolate sheet cake, [student's name] orally identified the finished product as a cake, and then helped cut it into slices and distribute the slices among his/her classmates. As they cut the cake, the teacher and [student's name] discussed how the whole cake was being cut into smaller parts.
- With assistance from a peer, [student's name] assembled a Mr. Potato Head. The peer asked guiding questions, such as "What's missing now?"

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.2 *Understand meaning of operations and how they relate to one another*

Alternate Performance Indicator (API): NO.2.3 *Recognize plus sign*

Sample Activities:

- Given a magic marker and a “hidden picture” with 10 “plus signs” hidden in it, [student’s name] found and circled all 10 plus signs.
- Given magic markers and a large piece of butcher paper, [student’s name] drew plus signs in a variety of colors and sizes all over the butcher paper.
- [Student’s name] used his/her index finger to draw plus signs in shaving cream slathered across his/her desk.
- Given 10 single-digit addition problems written on a whiteboard, [student’s name] used a dry-erase marker to circle the plus sign in each problem.
- Given 10 single-digit addition problems and 10 single-digit subtraction problems, in random order on the whiteboard, [student’s name] used a dry-erase marker to circle the plus signs in the addition problems.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.3 *Solve problems, compute fluently and make reasonable estimates*

Alternate Performance Indicator (API): NO.3.1 *Solve simple word problems involving whole numbers 0-10*

Sample Activities:

- [Student's name] used one-inch blocks to solve 10 simple word problems orally presented by the teacher (e.g., "You have six blocks. I have two blocks. If I give you one of my blocks, how many will you have?")
- [Student's name] and a peer took turns creating simple word problems. One presented a word problem by writing it on a lap-sized chalkboard, and the other wrote the answer using colored chalk. Then the roles were reversed. [Student's name] solved the problems using Popsicle sticks as counters.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.3 *Solve problems, compute fluently and make reasonable estimates*

Alternate Performance Indicator (API): NO.3.2 *Add whole numbers up to 10*

Sample Activities:

- The teacher orally presented single-digit word problems, and [student's name] used Popsicle sticks to solve them.
- [Student's name] was given a dry-erase marker to use on the whiteboard. The teacher called out a number, and [student's name] drew a number of dots equal to the number called. Then the teacher called a second number, and [student's name] drew a number of dots equal to that number. Finally, [student's name] orally counted the total number of dots and explained how the two numbers were combined to make a third, larger number.
- [Student's name] was given a basket and five plastic apples. The teacher orally presented [student's name] with addition sentences that could be solved using the five apples as counters. With verbal and physical prompts as needed, [student's name] solved each problem by adding the correct number of apples to the basket.

Content Standard: NUMBERS AND OPERATIONS

Standard: *The student will develop number and operation sense needed to represent numbers and number relationships orally, symbolically, and graphically in order to compute fluently and make reasonable estimates in problem solving.*

Alternate Learning Expectation (ALE): NO.3 *Solve problems, compute fluently and make reasonable estimates*

Alternate Performance Indicator (API): NO.3.3 *Solve one-step, real-world problems using addition of whole numbers up to 10*

Sample Activities:

- [Student's name] used a calculator to add the cost (rounded to the nearest dollar) of two books he/she planned to buy during the school book drive.
- Given a pencil and paper, [Student's name] used addition and subtraction to plan items needed for an imaginary birthday party. The teacher told [student's name] how many guests would attend, and then asked the student to adjust his/her numbers based on emerging events (e.g., "Suzy is allergic to chocolate and can't eat a cupcake. Now how many do you need?").

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.1 *Sort and classify objects by size, number, and other properties*

Alternate Performance Indicator (API): A.1.1 *Indicate awareness of color, size, and shape*

Sample Activities:

- Two different colors, red and blue, were displayed in [student's name]'s light box. [Student's name] was presented with three objects: a large red apple, a fuzzy red scarf, and a red ball. [Student's name] was encouraged to touch and explore the red objects as the teacher discussed the color red. Then [student's name] was asked to gaze at the matching color in the light box as the teacher placed the object near the matching color.
- When the teacher projected two different colored beams of light onto the wall, [student's name] turned his/her head toward the color requested. For example, the teacher would say, "Look at the blue light," or "Look at the red light," and [student's name] did so. A paraprofessional provided verbal and touch prompts as needed to complete the task.
- [Student's name] used a writing utensil of choice (a blue crayon) to trace a wooden shape onto paper with assistance.
- Given art paper and a set of colored pencils, [student's name] used appropriate colors to complete a realistic drawing during art class. A peer guided him/her by asking questions, such as "What color is the sky?" and "What color is grass?"
- Given a variety of crayons and markers, [student's name] orally identified the color of each when requested to do so.
- [Student's name] sorted large stenciled shapes into separate compartments of a sorting tray.
- A number of precut shapes of laminated card stock—triangle, circle, rectangle, square, oval, diamond, semicircle, and hexagon in different sizes and colors—were placed on the floor in front of the [student's name] and his/her classmates. The teacher explained that the class was going to learn a new song, and when a certain shape, color, or size was called, each student needed to find the shape in his/her pile, hold it up, and do the actions in the song. The song was sung to the tune of "The Hokey Pokey," but was modified to use size, shape, and color words (e.g., "Put your small blue circle in; pull your small blue circle out…"). [Student's name] followed the directions given in the song, with peers as models.

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.1 *Sort and classify objects by size, number, and other properties*

Alternate Performance Indicator (API): A.1.2 *Sort objects by one attribute (e.g., color, size, or shape)*

Sample Activities:

- Given 50 plastic bears and a compartmentalized sorting tray, [student's name] sorted the plastic teddy bear pieces according to color.
- Given 64 crayons in eight different colors and a set of eight colored cups to match the crayons, [student's name] placed the crayons into the matching cups.
- Given a deck of UNO cards containing only the colored number cards, [student's name] sorted them into piles by color—red, blue, green, yellow.
- [Student's name] sorted wooden shape pieces according to size (e.g., large stars, hearts, and clovers in one tray; small stars, hearts, and clovers in another).
- [Student's name] assisted the P.E. teacher in sorting softballs and basketballs into separate baskets and putting them away.
- [Student's name] assisted the P.E. teacher in sorting a variety of gym balls (e.g., footballs, soccer balls, basketballs, kickballs) into separate baskets and putting them away.
- [Student's name] sorted soft-touch round balls and soft-touch footballs from an assortment of soft-touch balls in P.E. class.
- [Student's name] sorted paper clips by size into plastic containers.
- During a visit to the kitchen to make snacks, [student's name] used the "yes/no" buttons of his/her programmed communication device to identify sets of two given food items as the same or different (e.g., salt & pepper, sugar & sugar, Oreos & carrot sticks) upon request. (Prerequisite)

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.2 *Represent and analyze patterns and functions*

Alternate Performance Indicator (API): A.2.1 *Indicate awareness of and react to a pattern*

Sample Activities:

- [Student's name] was shown a solid-colored canvas and a canvas printed with a high-contrast geometric pattern. With verbal encouragement and touch prompts from the teacher, [student's name] focused on the canvas with the pattern.
- Given a set of colored wooden blocks, [student's name] and a peer took turns arranging the blocks in a variety of patterns.
- Given a bag of blue beads, a bag of green beads, and a string of colored beads strung in a repeating pattern (e.g., blue-green, blue-green; blue-blue-green, blue-blue-green), [student's name] added 5 beads, continuing the pattern. A paraprofessional provided verbal and touch prompts as needed to complete the task.
- Given five pattern cards and cardboard shapes to complete the patterns, [student's name] stated what would come next in a given pattern and placed the pattern piece that should come next on the card.
- [Student's name] used parquetry blocks to match patterns on parquetry cards.

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.2 *Represent and analyze patterns and functions*

Alternate Performance Indicator (API): A.2.2 *Recognize two-part repeating pattern*

Sample Activities:

- [Student's name] repeated a two-beat clapping pattern (e.g., two quick claps; two slow claps) modeled by the teacher. The teacher gave assistance and encouragement as needed.
- Given a bag of blue beads, a bag of green beads, and a string of colored beads strung in a repeating pattern (e.g., blue-green, blue-green or green-blue, green-blue), [student's name] added 5 beads, continuing the pattern.
- On the whiteboard, the teacher drew a series of two-part repeating patterns (e.g., EAEAEA; ○□○□). [Student's name] used a dry-erase marker to correctly continue each pattern.

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.2 *Represent and analyze patterns and functions*

Alternate Performance Indicator (API): A.2.3 *Identify objects as same or different*

Sample Activities:

- Given five sets of two concrete objects each—ball and book, pencil and toy car, comb and eraser, two matching ceramic frogs, and two identical coffee mugs—[student's name] signaled "thumbs up" to identify the objects as the same or signaled "thumbs down" to identify the objects as different.
- Given a set of 50 cards, each of which had two objects pictured on it, [student's name] put the cards with two matching objects in one pile and the cards with two different objects in another pile.
- [Student's name] played "Concentration," a matching and memory game, with a peer.
- [Student's name] and a peer played picture dominoes, which required [student's name] to match the picture on one end of the domino being placed to a picture on a domino on the board.
- During a visit to the kitchen to make snacks, [student's name] used the "yes/no" buttons of his/her programmed communication device to identify sets of two given food items as the same or different (e.g., salt & pepper, sugar & sugar, Oreos & carrot sticks) when requested to do so.

Content Standard: ALGEBRA

Standard: *The student will understand and generalize patterns as they represent and analyze quantitative relationships and change in a variety of contexts and problems using graphs, tables, and equations.*

Alternate Learning Expectation (ALE): A.3 *Use concrete, pictorial, and verbal representations to develop an understanding of the language and symbols of mathematics*

Alternate Performance Indicator (API): A.3.1 *Use concrete objects or pictures to demonstrate addition number sentences involving numbers 0-10*

Sample Activities:

- Given a bowl of uncooked pinto beans and a sheet of paper to place them on, [student's name] used the beans to represent single-digit addition problems orally presented by the teacher. For example, the teacher would say, "Two," and [student's name] would place two beans on the paper; then the teacher would say "Plus three," and [student's name] would add three beans, for a total of five.
- Given plastic counters and 10 addition number sentences, each written on a separate card, [student's name] placed the correct number of counters beneath each number written, then placed the correct number of counters to the right of the equal sign to complete the number sentence. For example, given 2 + 7 = ?, [student's name] placed two counters on the number 2, seven counters on the number 7, and nine counters to the right of the equal sign.

Content Standard: GEOMETRY

Standard: *The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one, two, and three dimensional figures.*

Alternate Learning Expectation (ALE): G.1 *Analyze characteristics and properties of geometric shapes*

Alternate Performance Indicator (API): G.1.1 *Identify and/or name given shapes (i.e., a circle and/or a square)*

Sample Activities:

- The teacher presented [student's name] with a tennis ball (a circular object) and told him/her it was shaped like a circle. With encouragement from the teacher, the student grasped the tennis ball.
- On request, [student's name] removed blocks from a pail and placed them into two groups: squares and circles.
- [Student's name] identified circles and squares by pointing to the correct shape on a shape board when the teacher named that shape.
- [Student's name] played catch with a peer using rubber toys in a variety of geometric shapes—circle, square, triangle, and rectangle. [Student's name] called out the name of each shape as he/she caught it.
- [Student's name] was given three construction paper shapes—circle, square, and rectangle. When the teacher named an object, [student's name] held up the shape that best represented the objects. For example, if the teacher said, "window," [student's name] would hold up the rectangle. If the teacher said "pancake," [student's name] would hold up the circle.
- Using magnetic shapes and a whiteboard, [student's name] correctly identified a circle, square, triangle, and rectangle by placing the shape on the board when the teacher named it.
- Using magnetic shapes and a whiteboard, [student's name] correctly identified a circle, square, triangle, and rectangle by naming each shape as the teacher placed it on the board.
- On request, [student's name] orally identified circles and squares in a winter picture he/she completed by pasting geometric shapes onto construction paper.
- Cardboard shapes in a variety of colors were placed around the room. The teacher called out a color and shape and [student's name] went to the cardboard shape that matched the description.
- After listening to a recording of the book *The Speedy Triangle,* [student's name] constructed triangles from pipe cleaners.

Content Standard: GEOMETRY

Standard: *The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one, two, and three dimensional figures.*

Alternate Learning Expectation (ALE): G.1 *Analyze characteristics and properties of geometric shapes*

Alternate Performance Indicator (API): G.1.2 *Recognize circles and squares in the environment*

Sample Activities:

- [Student's name] was given a cardboard circle and square and asked to find objects in the room with the same shape. [Student's name] pointed to each object and said its name, and a peer wrote the names of the objects on the corresponding cut-out shape.
- During a walk with a peer around the school, [student's name] accurately identified the shapes of various objects, such as the square of glass in a classroom window or the circular shape of a paper plate, by pointing to and naming the objects, along with their shapes.
- [Student's name], accompanied by a peer helper, located different shapes in the classroom to match a set of construction paper shapes—circle and square—in [student's name]'s math folder. When a match was found, the peer asked [student's name] to point to it in the folder, asked [student's name] to name the shape, and gave [student's name] a sticker to put on it.

Content Standard: GEOMETRY

Standard: *The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one, two, and three dimensional figures.*

Alternate Learning Expectation (ALE): G.1 *Analyze characteristics and properties of geometric shapes*

Alternate Performance Indicator (API): G.1.3 *Reproduce and create circles and squares*

Sample Activities:

- Given a highlighter and four shapes (two circles and two squares) drawn by an adult on unlined paper, [student's name] used the highlighter to trace each of the shapes.
- [Student's name] made wrapping paper by making potato prints on butcher paper. To make a potato print, the teacher cut a potato in half. On the flat part of half the potato, the area around a geometric shape (circle or square) was cut away, leaving a raised shape. [Student's name] grasped the half-potato, dipped it in paint, and used it as a stamp.
- [Student's name] combined Colorform circles and squares to make pictures on a plastic mat. (Prerequisite)
- [Student's name] used colored chalk to make sidewalk pictures using circles and squares.

Content Standard: GEOMETRY

Standard: *The student will develop an understanding of geometric concepts and relationships as the basis for geometric modeling and reasoning to solve problems involving one, two, and three dimensional figures.*

Alternate Learning Expectation (ALE): G.2 *Specify locations and describe spatial relationships*

Alternate Performance Indicator (API): G.2.1 *Recognize and show terms of relative position and direction in a variety of situations (e.g., over and under)*

Sample Activities:

- Given a basket of colored blocks, [student's name] played a game in which a peer named a block color and position (e.g., "blue block, under the desk" or "red block, between the pencil sharpener and the Kleenex box") and [student's name] placed the correct block in the position given.
- [Student's name] entered his/her assigned number into the cafeteria keypad by following verbal instructions from a peer, who used the directions "above," "below," "beside," "top," and "bottom" to direct [student's name] to the position of each number on the keypad.
- While playing the Jr. Monopoly board game with peers, [student's name] orally described the relative position of the other players (e.g., "Joey is between Mitch and Susan," or "Joey is in front of me") when requested to do so.
- Given a box containing several toy animals and a set of 20 direction cards, a peer read the cards aloud, and [student's name] used the toys to follow the directions (e.g., "Put the dog in the box and a rabbit under the table").
- Given a set of 10 cards, each with a position word written on it, [student's name] chose the card that matched a position or direction modeled by a peer. For example, if the peer held a kickball under his/her foot, [student's name] would hold up the word "under." If the peer held the kickball on top of his/her head, [student's name] would hold up the word "over" or the word "above."
- When given a teddy bear and verbal instructions to place the bear in a given location, [student's name] placed the bear in the appropriate location (e.g., "Put the bear on top of the pencil sharpener.").

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.1 *Demonstrate understanding of units of measure and measurable attributes of objects*

Alternate Performance Indicator (API): M.1.1 *Identify which is larger/smaller, longer/shorter when given two similar objects*

Sample Activities:

- When presented with two colored straws of different lengths, [student's name] pointed to the longer straw on request.
- During P.E., the teacher presented [student's name] with five sets of two balls visibly different in size. For each set of two, [student's name] orally stated which was bigger and which was smaller when requested to do so.

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.1 *Demonstrate understanding of units of measure and measurable attributes of objects*

Alternate Performance Indicator (API): M.1.2 *Indicate awareness of temperature*

Sample Activities:

- [Student's name] reacted with facial expressions and vocalizations as the teacher touched [student's name]'s hands and cheeks with, alternately, a cool washcloth and a warm buckwheat pillow.
- Given a bowl of ice and a bowl of warm cooked rice, [student's name] used his/her hands to explore the two materials with hand-over-hand assistance. [Student's name] indicated the change in temperature with changes in facial expression.
- Given a choice of two cartons of milk (one cold and one room temperature) and asked which was cold, [student's name] touched each carton and then handed the teacher the one that was cold.
- Given a toy boat and two bowls of water, one hot (but not scalding) and one cold, [student's name] tested each with a finger, then, on request, played with the toy boat in the cold water.

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.1 *Demonstrate understanding of units of measure and measurable attributes of objects*

Alternate Performance Indicator (API): M.1.3 *Recognize clocks and watches as instruments for measuring time*

Sample Activities:

- When given a watch, a book, and a camera and asked which one was used to tell time, [student's name] pointed to the watch.
- [Student's name] and a peer went for a walk around the school. The peer pointed to various concrete objects, including clocks and watches, and asked, "What do we do with that?" When asked about a clock or watch, [student's name] responded by saying that the clock or watch is used to tell time.
- When given 10 items (watch, digital clock, analog clock, hourglass, globe, book, candle, pencil, coffee cup, and camera) and asked which ones were used to tell time, [student's name] separated the watch, the two clocks, and the hourglass from the other items.
- Given markers, glue, poster board, scissors, and a catalog of gift items, including clocks and watches, [student's name] made a collage of clocks and watches and labeled it, "Things that Tell Time."
- Given a stack of sixteen picture cards—four clocks, four watches, and eight miscellaneous items that are not used for measuring time—[student's name] placed the pictures of "things we use to tell time" in one stack and the other items in a different stack.

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.2 *Apply appropriate techniques and tools to determine measurements*

Alternate Performance Indicator (API): M.2.1 *Use words to describe time (e.g., day, night*)

Sample Activities:

- [Student's name] was shown five pictures clearly representing day and five pictures clearly representing night. As each card was shown, the teacher asked whether the picture represented day or night, and [student's name] orally answered correctly and explained how he/she could tell which it was.
- [Student's name] used colored pencils on butcher paper to illustrate different times of day. Then he/she labeled each picture with the correct word for the time illustrated by the picture (e.g., morning, afternoon, evening, night).

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.2 *Apply appropriate techniques and tools to determine measurements*

Alternate Performance Indicator (API): M.2.2 *Use words to describe temperature (e.g., hot, cold)*

Sample Activities:

- When shown pictures of people dressed for various weather conditions, [student's name] stated whether the temperature was probably hot or cold, based on the clothing worn by the subjects of the pictures.
- When 10 picture cards depicting various temperatures (e.g., a steaming pie, a boy building a snowman, a girl swimming in the ocean on a hot day) were held up in front of [student's name], he/she orally described each picture, including an explanation of what temperature was being depicted and what evidence in the picture supported this conclusion.

Content Standard: MEASUREMENT

Standard: *The student will become familiar with the units and processes of measurement in order to use a variety of tools, techniques, and formulas to determine and to estimate measurements in mathematical and real-world problems.*

Alternate Learning Expectation (ALE): M.2 *Apply appropriate techniques and tools to determine measurements*

Alternate Performance Indicator (API): M.2.3 *Measure length of an object using a variety of nonstandard units (e.g., paperclips, pencils, straws)*

Sample Activities:

- The student used paperclips to measure various objects in the classroom (e.g., a pencil is two large paperclips plus one small paperclip).
- Using a pencil and a paperclip, the student worked with a peer to measure classroom objects (e.g., a stapler is as long as one pencil plus one paperclip).
- The student used a tennis shoe to measure to measure the length of five different vehicles parked in the parking lot. (Permission from the owners was obtained prior to the activity.)

Content Standard: DATA ANALYSIS AND PROBABILITY

Standard: *The student will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions and conjectures.*

Alternate Learning Expectation (ALE): DAP.1 *Develop, select, and use appropriate methods to collect, organize, display, and analyze data*

Alternate Performance Indicator (API): DAP.1.1 *Recognize representations of data using concrete objects, pictures, and simple graphs (e.g., pictographs)*

Sample Activities:

- [Student's name] used various magazines and newspaper supplements to locate ads about personal items, food, and clothing. [Student's name] then cut them out and pasted them into a journal for a later discussion. (Prerequisite)
- Given a simple pictograph representing one child with red hair and three children with brown hair, [student's name] pointed on request to the column that showed how many children had red hair and then to the column that showed how many children had brown hair.

Content Standard: DATA ANALYSIS AND PROBABILITY

Standard: *The student will understand and apply basic statistical and probability concepts in order to organize and analyze data and to make predictions and conjectures.*

Alternate Learning Expectation (ALE): DAP.2 *Apply basic concepts of probability*

Alternate Performance Indicator (API): DAP.2.1 *Determine whether an event is possible or impossible*

Sample Activities:

- After listening to the legend of Pecos Bill, [student's name] orally discussed which events in the story could actually happen and which could not.
- The teacher orally described 10 separate events, some of which were possible (e.g., "the horse ate some grass") and some of which were impossible (e.g., "the rabbit spread its wings and flew away"). After each event was described, [student's name] told whether or not the event could happen. Upon request, [student's name] explained why the event could or could not happen.