EARLY CHILDHOOD ASSESSMENT IN MATHEMATICS

STUDENT RECORD BOOKLET

Children First Initiative

Student Name	Grade Level & Year	Grade Level & Year	Grade Level & Year	Grade Level & Year

Mathematics Strand	Date of Assessment							
Counting								
Numeration								
Addition & Subtraction								
Multiplication & Division								
Geometry								
Length Measurement								
Time Measurement								

Materials List

Materials printed in **bold** are in the Early Childhood Inventory in Mathematics Resource Cards. Other materials need to be collected from the classroom.

COUNTING
- 22 counters

NUMERATION
- **Numeral cards 0-10**
- **Two-digit numeral cards (17, 24, 42, 71)**
- Calculator
- Place value materials for tens and ones (8 tens and 15 ones of classroom material used to model place value: e.g., Base-10 blocks, or snap cubes in tens, or bundled pop sticks)
- Base-10 blocks for hundreds, tens and ones (3 hundreds, 8 tens and 15 ones)
- **Three-digit numeral cards (230, 509, 510, 570)**
- **Four- and five-digit numeral cards (5,046; 4,609; 30,718; 12,064)**

ADDITION AND SUBTRACTION
- 13 counters
- Index card for screening counters
- **Number sentence cards set A (initial facts: 5 + 2, 5 − 2, 12 − 1, 6 + 0, 6 − 0, 4 + 4, 6 + 6, 6 + 4, 7 + 3, 2 + 17, 37 + 10)**
- **Number sentence cards set B (later facts: 8 − 4, 10 − 7, 34 + 4, 40 + 40, 3 + 4, 6 + 7, 7 + 5, 13 − 4, 37 − 10, 37 + 9)**

MULTIPLICATION AND DIVISION
- **Picture of 5 cookie plates**
- 10 counters (all the same color)
- 12 snap cubes or unifix cubes joined together (all the same color)
- Index card for screening counters
- **Number sentence cards (multiplication set C: 4 x 5, 2 x 6, 3 x 10, 5 x 7; division set D: 30 ÷ 10, 12 ÷ 6, 20 ÷ 5)**

GEOMETRY
- **Shape cards A-E**
- Collection of mixed Pattern Blocks and counters: 7 green triangles, 2 orange squares, 3 red trapezoids, 4 blue rhombi, 1 yellow hexagon, 2 circular counters
- **Tangram puzzle pieces**

MEASUREMENT
Length
- 4 sticks (wooden meat skewers cut to these lengths: 5 cm, 10 cm, 18 cm, and 20 cm)
- 6 x 5 cm paper clips
- A 12-inch ruler with cm and inch graduated scales
- 1 sheet of legal-size paper (8.5 x 14 inches)
Time
- **Analog clock face with movable hands**
- **Digital clock time cards**
- Current classroom calendar

Counting Assessment

Student name: _____ **Date:** _____

MATERIALS: *22 counters*

Grade K-1: Start here. Ask Q1-3.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1. **Start at 1. Count aloud by ones.** Stop the child at 30.	If necessary, prompt "1, 2, 3, like that." Record the child's successful sequence, e.g., 1-19.	1. _____		**a. Beginning** Small parts of Q1-3 correct: Oral counts less than 11. Counts less than 10 objects. Unable to make small sets. **b. Early counting** Parts of Q1-3 correct: Oral counts more than 10. Counts at least 10 objects. Makes small sets. **c. Counts objects** All of Q1-3 correct: Oral counts by ones to 30. Counts more than 20 objects.
2. Put out the pile of 22 counters. **Get 5 counters**. After this is done, push the 22 counters together again. Then: **Get 8 counters.**		2. Makes sets: 5 8		
3. Use the pile of 22 counters. **Count all of these. Say the numbers as you count.**	Record the child's successful sequence, e.g., 1-12.	3. _____		

Progress to Q4 if the child successfully answers all of Q1-3. Stop if the child has difficulty with any of Q4.

Counting Assessment (continued)

Student name: _____   **Date:** _____

Grade 2: Start here. If the child has difficulty with any of Q4, revert to Q1-3.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
4a. Start at 57 and keep counting. Stop the child at 72. **4b. Count backward by ones. Start at 10.**	Record the child's successful sequences, e.g., 57-59, 10-7.	4a._____ b. _____		**d. Counts on by 1s** All of Q4 correct: Counts forward by ones from any two-digit number. Counts backward by ones from 10. **e. Skip counts** All of Q5 correct: Counts forward by 10s, 5s, 2s. Counts backward by ones from 20.
5a. Count backward by ones from 20. Stop the child at 9. **5b. Skip count by 10s.** Stop the child at 110. **5c. Skip count by 5s.** Stop the child at 50. **5d. Skip count by 2s.** Stop the child at 30.	If necessary, prompt, "10, 20, 30, like that." Stop if the child counts up by ones to say a skip counting sequence. Record the child's successful sequence, e.g., 20-16, 10-40, 2-12.	5a._____ b. _____ c. _____ d. _____		

Progress to Q6 if the child successfully answers all of Q4 and 5. Stop if the child has difficulty with any of Q6.

Counting Assessment (continued)

Student name: _____   **Date:** _____

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
6a. **Skip count by 3s.** Stop the child at 33. **6b.** **Skip count by 4s.** Stop the child at 48. **6c.** **Count backward by ones from 63.** Stop the child at 58.	Stop if the child counts up by ones to say a skip counting sequence. Record the child's successful sequences, e.g., 3-15, 63-60.	6a. _____ 6b. _____ 6c. _____		**f.** **Facility with counting** All of Q6 and 7 correct: Counts forward by 3s, 4s. Counts backward by 1s from any two-digit number. Counts forward by 5s, 10s from any two-digit number.
7a. **Start at 53. Skip count forward by 5s.** Stop child at 88. **7b**. **Start at 78. Skip count forward by 10s.** Stop child at 118.	Record the child's successful sequences, e.g., 53-68, 78-98.	7a. _____ 7b. _____		

End of Counting Assessment section.

Numeration Assessment

Student name: _____   **Date:**   _____

MATERIALS:

- *Single-digit numeral cards 0-10*
- *Two-digit numeral cards (17, 24, 42, 71)*

- *Calculator*
- *8 tens and 15 ones of classroom material used to model place value (e.g., Base-10 blocks, snap cubes in tens, or bundled pop sticks)*

Grade K, 1: Start here. Ask Q1-2.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1. Show the numeral cards 0-10. **Tell me the numbers you know.**	Show the cards out of counting order.	1. Known numerals: 0 1 2 3 4 5 6 7 8 9 10		**a. Beginning** Some of Q1 and 2 correct: No numerals known, or may know some numerals 0-10.
2. Take out the zero card. Give the child the numeral cards 1-10. **Put these numbers in counting order.** After this is done: **Which is the largest number? Which is the smallest number?**	Give the cards out of counting order. Cards can be sequenced from left to right, or right to left.	2. Orders _____ Largest _____ Smallest _____		**b. Understanding to 10** All of Q1, 2 correct: Knows all numerals 0-10 Orders numerals 1-10.

Progress to Q3 if the child successfully answers all of Q1-2. Stop if the child has difficulty with Q3 and 4.

Numeration Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Single-digit numeral cards 0-10*

- *Two-digit numeral cards (17, 24, 42, 71)*

- *Calculator*

- *8 tens and 15 ones of classroom material used to model place value (e.g., Base-10 blocks, snap cubes in tens, or bundled pop sticks)*

Grade 2: Start here. If the child has difficulty with Q3 and 4, revert to Q1-2.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
3. Use the two-digit numeral cards. **Tell me the numbers you know.** After this is done: **Spread the cards out. Which is the largest number? Which is the smallest number?**	When spreading the cards, ensure they are out of order.	3. Known numerals: 17 24 42 71 Largest _____ Smallest _____		**c. Exploring to 100:** Identifies at least 5 of the numerals from Q3 and 4. Q5 incorrect. Knows some two-digit numerals, and the number after.
4. Give the child a calculator. **Type this number on the calculator: 25.** After this is done: **What number comes after this? What number comes before this?** Repeat for numbers 30, and 13.	Assist the child with starting and clearing the calculator as necessary.	4. Types numerals: 25 30 13 Number after / before: 26/24 31/29 14/12		**d. Understanding to 100** All of Q3, 4, 5 correct: Identifies and orders two-digit numerals.
5. Use the classroom materials for tens and ones (6 tens and 15 ones). Put out 3 tens and 5 ones. **This is how I make 35: 3 tens and 5 ones.** Show the child the 42 card. **Use the materials to make 42.** After this is done: **Tell me how you figured that out.**	Counting by ones is incorrect. The child should use and count 4 tens and 2 ones. "10, 20, 30, 40, then 41, 42," is sufficient explanation.	5. Models 42 _____ Explains tens and ones _____ (Some reference to tens or counting by tens is necessary.)		Able to model and explain the place value of a two-digit number. Tells the number before.

Progress to Q6 if the child successfully answers Q3-5.

Numeration Assessment (continued)

Student name: _____   **Date:** _____

MATERIALS:

- *Base-10 blocks (3 hundreds, 8 tens and 15 ones)*
- *Three-digit numeral cards (230, 509, 510, 570)*

Stop if the child has difficulty with any of Q6 or 7.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
6. Use the three-digit numeral cards. **Tell me the numbers you know.**	If a child names the digits, e.g., "two, three, zero": **What is this number called?**	6. Known numerals: 230 509 510 570		**e. Understanding to 999** All of Q6, 7 and 8 correct: Knows and orders three-digit numerals. Able to model and explain the place value of a three-digit number. Models and explains ten and one hundred more, and ten and one hundred less (where regrouping is not required).
7. Give the child the three-digit numeral cards. **Put these numbers in order from smallest to largest.** After this is done: **How did you figure that out?**		7. Orders _____ Explains _____		
8a. Show the child the 230 card and the Base-10 blocks. **Use the blocks to show this number.** After this is done: **Explain what you did.**	Stop here if the child cannot build the model, or is counting by ones.	8a. Models 230 Explains hundreds, tens and ones _____		
8b. Continue to use the 230 card and the Base-10 block model of 230. **Show the number that is ten more than this with the blocks. What number is it?** If successful, continue to use the 230 model: **Show the number that is one hundred more than this. What number is it?** **Show the number that is ten less than this. What number is it?** **Show the number that is one hundred less than this. What number is it?**	Use 230 as the "starting" number each time. The child should add or remove blocks of appropriate value each time. The child need not predict each number at this level, but they must be able to "work out" the value of each new number after they adjust the model.	8b. Models 240. Says 240. Models 330. Says 330. Models 220. Says 220. Models 130. Says 130.		

Progress to Q9 if the child successfully answers all of Q6-8.

Numeration Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Calculator*
- *Four- and five-digit numeral cards (5,046; 4,609; 30,718; 12,064)*

Stop if the child has difficulty with any of Q9.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
9. Use the four- and five-digit numeral cards. **Tell me the numbers you know.**	If a child uses an alternative name such as "thirty-seven hundred and eighteen": **What else is this number called?**	9. Known numerals: 5,046 4,609 30,718 12,064		**f. Understanding 1000 and beyond** All of Q9, 10, 11 correct: Knows and orders numerals up to five digits. Understands the place value of a four-digit number.
10. Give the child the four- and five-digit numeral cards. **Put these numbers in order from smallest to largest.** After this is done: **How did you figure that out?**		10. Orders _____ Explains _____		
11. Give the child a calculator. **Type this number on the calculator: 7,415.** After this is done: **What number is ten more than this? How do you know?** **What number is one hundred more than this? How do you know?** **What number is ten less than this? How do you know?** **What number is one hundred less than this? How do you know?**	Use 7,415 as the "starting" number each time. The child should predict each new number, and explain which digit changes. Assist the child with starting and clearing the calculator as necessary.	11. Types 7,415 _____ 7, 425: Ten more _____ 7, 515: One hundred more _____ 7, 405: Ten less _____ 7, 315: One hundred less _____		

End of Numeration section.

Addition and Subtraction Assessment

Student name: _____   **Date:** _____

MATERIALS:

- *13 counters*
- *Index card for screening the counters*

Grade K, 1: Start here.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning

1. Use 10 counters. Show the child 6 in one set and 4 in another set. **There are 6 counters here and 4 here.** Cover the 6 counters with a card. **How many counters in all?** After the child answers: **How did you figure that?**	If child cannot do this, remove the card and repeat the question. Let them use the counters.	1. _____
		
		Solves with partial model or
		Needed full model
		Strategy: Known fact
		Count on Count all
				a. Beginning:
				
				   Unable to solve Q1, 2, 3 by any method.
				
				b. Count all strategies:
				
				   Needs the full model to solve any of Q1, 2, and 3. Strategy used: counts all (by ones from one).
				
				c. Count on/count back strategies:
				
				   Needs only part of the model to solve all of Q1, 2 and 3. Strategy used: counts on for Q1 and 2, count back/down/up for Q3, or known facts.

2. Put the 10 counters together. **Here are 10 counters. Imagine we put 3 more counters there. How many counters would that make in all?**	If the child cannot figure this mentally, give them three more counters to use.	2. _____ Solves with partial model or Needs full model Strategy: Known fact Count on Count all		
3. Put out 9 counters. **There are 9 counters here.** Now cover the counters with a card. **If we take 3 counters away, how many counters would be left?** After the child answers: **How did you figure that?**	If child cannot do this, remove the card and repeat the question. Let them use the counters.	3. _____ Solves with partial model or Needs full model Strategy: Known fact Count back, down or up Counts by ones from one		

Grade K, 1: Progress to Q4 if the child solves Q1-3 with only part of the model shown, and using count on, count back/down/up strategies, or known facts.

Addition and Subtraction Assessment

Student name: _____   **Date:** _____

MATERIALS: *Number sentence cards set A, B*

Grade 2: Start here. Stop whenever the child has difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
4. Use number sentence cards set A. Show each number sentence and read each one aloud to the child. **I'm going to read some math questions to you. Try to figure these in your head.** **a)** **5 + 2** **5 – 2** **12 – 1** (Add/subtract 1,2) **b)** **6 + 0** **6 – 0** (Add/subtract 0) **c)** **4 + 4** **6 + 6** (Doubles) **d)** **2 + 17** (Turn around strategy) **e)** **6 + 4** **7 + 3** (Sums to 10) **f)** **37 + 10** (Adding 10)	Immediate correct responses suggest the child has used initial addition or subtraction strategies. Use of fingers, or counting by ones indicates the child is using counting strategies. If at any time the child gives a delayed answer: **How did you figure that?**	a) _____ b) _____ c) _____ d) _____ e) _____ f) _____		**d. Initial addition/subtraction strategies:** Solves 10 of the 11 number sentences from Q4 using initial addition/subtraction strategies.

Progress to Q5 if the child successfully answers 10 examples from Q4 using initial addition/subtraction strategies. Stop whenever the child has difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
5. Use number sentence cards set B. Show each number sentence and read each one aloud to the child. **I'm going to read some math questions to you. Try to figure these in your head.** **a)** **8 – 4** **10 – 7** (Subtraction: fact families) **b)** **34 + 4** **40 + 40** (Using larger numbers) **c)** **3 + 4** **6 + 7** (Doubles plus/minus one) **d)** **7 + 5** **13 – 4** (Make to ten or compensation) **e)** **37 – 10** (Subtracting 10) **f)** **37 + 9** (Adding 9)	Immediate correct responses suggest the child has used later addition or subtraction strategies. Use of fingers, or counting by ones indicates the child is using counting strategies. If at any time the child gives a delayed answer: **How did you figure that?**	a) _____ b) _____ c) _____ d) _____ e) _____ f) _____		**e. Later addition/subtraction strategies:** Solves all 10 number sentences from Q5 using later addition/subtraction strategies.

End of Addition and Subtraction section.

Multiplication and Division Assessment

Student name: _____   Date: _____

MATERIALS:

- *Picture of 5 cookie plates*
- *10 counters (all the same color)*
- *12 snap cubes (all the same color)*
- *Index card for screening the counters*

Grade K: The Multiplication/Division section is optional. If you wish to assess K children, start here. Grade 1, 2: Start here.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1. Show the picture of 5 cookie plates. **Imagine there are 2 cookies on each plate. How many cookies would this be in all? Tell me how you figured that.** If child cannot do this mentally, give them counters and let them build a model on the plates. After this is done: **How many cookies is this in all?**	Look for skip counting, repeated addition or using known facts. If the child counts by ones from one: **Can you do that a quicker way?**	1. Answer _____ Solves with partial model or Needs full model Strategy: Known fact Skip count Counts by ones		**a. Beginning:** Unable to solve any, or solves just one of Q1, 2, and 3 using any method. **b. Full model/counts all:** Two of Q1-3 correct. Needs the full model for every question. Strategy used: counting all from one (can't yet see a modelled group as "one unit").
2. Use 8 counters. **Here are 8 counters.** Now cover them with a card. **Imagine we share the counters fairly between you and me, so we each get the same amount. How many counters would we each get? How did you figure that?** If child cannot do this mentally, give them 8 counters and let them share the counters out.	Look for skip counting, repeated subtraction or using known facts.	2. Answer _____ Solves with partial model or Needs full model Strategy: Known fact Skip count Counts by ones		**c. Full model/counts sets:** All of Q1-3 correct. Needs the full model to solve any of the questions. Strategy used: skip counting or known facts (sees a modelled group as "one unit").
3. Show a stick of 12 snap cubes. **Here are 12 cubes. Imagine the 12 cubes are put into groups of 3. How many groups of 3 would there be? Tell me how you figured that.** If the child cannot do this mentally, let them break the stick into groups of 3. Then: **How many groups of 3 are there?**	The child might use fingers for partial modelling, e.g., put up one finger each time they skip count by threes. Answering "12" indicates the child is still fully modeling and counting all.	3. Answer _____ Solves with partial model or Needs full model Strategy: Known fact Skip count Counts by ones		**d. Part model/counts sets:** All of Q1-3 correct. Needs only part of the model for every question. Strategy used: skip counting or known facts.

Progress to Q4 if the child successfully solves Q1-3 with only part of the model shown, and using skip counting, repeated addition, or known facts.

Multiplication and Division Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Multiplication number sentence cards set C*

- *Division number sentence cards set D*

Stop whenever the child has difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
4. Use the multiplication number sentence cards set C. Show and read each number sentence aloud to the child. **I'm going to read some math questions. Try to figure these in your head.**	Quick correct responses suggest the child has used multiplication strategies. If at any time the child gives a delayed answer: **How did you figure that?**			**e. Multiplication strategies:** Solves all of Q4 by multiplication strategies.
a) **3 x 10** (Tens strategy)	Think, e.g., 3, add zero	a) _____		
b) **2 x 6** (Doubling strategy)	Think, e.g., six plus six	b) _____		
c) **4 x 5** (Repeated addition strategy)	Think, e.g., 5, 10, 15 20; or 5 + 5 + 5 + 5	c) _____		
d) **5 x 7** (Turn around strategy)	Think, e.g., 7 times 5	d) _____		

Progress to Q5 if the child successfully solves all of Q4 using known facts. Stop whenever the child has difficulty.

Multiplication and Division Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Multiplication number sentence cards set C*

- *Division number sentence cards set D*

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
5. Use the division number sentence cards set D. Show and read each number sentence aloud to the child. **I'm going to read some math questions. Try to figure these in your head.**	Quick correct responses suggest the child has used division strategies. If at any time the child gives a delayed answer: **How did you figure that?**			**f. Division strategies:** Solves all of Q5 by division strategies.
a) 30 ÷ 10 (Tens)	Think, e.g., 30, remove zero	a) _____		
b) 12 ÷ 6 (Halving)	Think, e.g., 6 + 6 = 12, so 12 − 6 = 6	b) _____		
c) 20 ÷ 5 (Repeated addition or subtraction)	Think, e.g., 5 + 5 + 5 + 5 = 20, so there are 4 fives.	c) _____		

End of Multiplication and Division section.

Geometry Assessment

Student name: _____ **Date:** _____

MATERIALS:

• *Shape cards A-C*

• *Small collection of shapes (Pattern Blocks and circular counters: 7 green triangles, 2 orange squares, 3 red trapezoids, 4 blue rhombi, 1 yellow hexagon, 2 circular counters)*

Grade K, 1: Start here.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1. Use shape card A and the collection of shapes. Point to each shape on the card and say: **Find the block that has this shape.** After this is done, point to the circle, square and triangle, and ask: **What is this shape called?**	The child does not need to name the rhombus, hexagon or trapezoid.	1. Matches: All shapes matched _____ Circle named _____ Square named _____ Triangle named _____		**a. Beginning:** *Any of Q1,2 incorrect.* Not yet able to recognize and name shapes shown in "conventional" orientations. **b. Whole shapes:**
2. Use shape card B. Point to each shape and say: **Look around the room. Tell me some things that have that shape.**	The child does not need to name the rectangles used in Q2.	2. Circular objects____ Rectangular objects ____		All of Q1, 2 correct. Recognizes and names shapes shown in "conventional" orientations.

Grade K, 1: Progress to Q3 if the child successfully answers all of Q1-2. Stop if the child does not give any shape parts for Q3.

Geometry Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Shape cards A-C*

- *Small collection of shapes (Pattern Blocks and circular counters: 7 green triangles, 2 orange squares, 3 red trapezoids, 4 blue rhombi, 1 yellow hexagon, 2 circular counters)*

Grade 2: Start here. If the child cannot answer Q3 with information about parts of shapes, revert to Q 1-2.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
3. Use shape card C. Point to the triangle and the square. **How are these shapes different? What do they have that is different?** After the child has explained, repeat for the square and the pentagon, and then the triangle and the pentagon.	The child should notice and describe at least the shapes' sides and corners. Vertices may be called "corners" or "points." Sides may be called "lines" or "edges." The child does not need to name the pentagon. Have the child build the shape beside the hexagon block (not on top of it).	3. Triangle description: 3 sides ___ 3 corners ____ Square description: 4 sides ___ 4 corners ____ Pentagon description 5 sides ___ 5 corners ____		**c. Exploring shape parts:** Number of sides and corners noticed and described for shapes in Q3. Gives at least two solutions for Q4. Identifies some parts of shapes, and visualizes simple orientation of shapes.
4. Show the child the Pattern Blocks. Point to the yellow hexagon. **What shapes could you put together to build this shape?** Let the child use selected blocks to build a hexagon. If successful, ask: **Can you do that using different shapes?**		4. Builds shape _____ Shapes used _____ A different solution ____ Shapes used _____		

Progress to Q5 if the child successfully answers all of Q3-4. For Q3, the child must refer to the numbers of sides and corners of the shapes.

Geometry Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Shape cards D, E*
- *Tangram puzzle pieces*

Stop if the child has any difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
5. Use shape card D. **Which shapes are triangles?** After the child has done this, ask: **How can you tell?** After the child has explained this, point to a "non-triangle" and ask: **Why is this not a triangle?** Repeat for the other "non-triangles" if necessary.	The child should explain in his or her own words. Listen for statements such as, "It has to join up," or "It can't have any curvy sides." The squares will be different sizes.	5. Some triangles found. Some "non-triangles" called triangles. All triangles found. A triangle has: 3 sides ____ 3 corners ____ Straight sides _____ A closed shape _____		**d. Understands shape parts:** Refers to closed shape, straight sides, 3 sides, 3 corners for triangles. Correctly identifies all triangles for Q5. Makes three-piece square for Q6. Identifies many parts of shapes, and visualizes rotations and reflections of some simple shapes.
6. Use the tangram puzzle pieces. Spread out the seven pieces. **Can you put three of these pieces together to make a square?** If successful, then separate the pieces and say: **Can you put four of these pieces together to make a square?**	The child should explain in his or her own words. Listen for statements such as, "It has to have square shaped corners," or "It can't have any slanting lines."	6. "Three-piece" square: Builds square _____ "Four-piece" square: Builds square _____		**e. Shape families:** Refers to closed shape, straight sides, 4 sides, 4 corners, opposite sides of equal length, right angle corners for rectangles. Correctly identifies all rectangles (including square) for Q7. Makes both squares for Q6. Understands how shapes relate in "families," and able to visualize rotations and reflections of many shapes.

Geometry Assessment (continued)

Student name: _____   **Date:** _____

MATERIALS:

• *Shape cards D, E*

• *Tangram puzzle pieces*

Stop if the child has any difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
7. Use shape card E. **Which shapes are rectangles?** After the child has done this, ask: **How can you tell?** After the child has explained this, point to a "non-rectangle" and ask: **Why is this not a rectangle?** Repeat for the other "non-rectangles" if necessary.		7. Some rectangles found: Some "non-rectangles" called rectangles. All rectangles found (including square). A rectangle has: 4 sides ____ 4 corners ____ Straight sides ____ A closed shape ____ Right angle corners ____ Opposite sides equal length ____		

End of Geometry section.

Length Measurement Assessment

Student name: _____   Date: _____

MATERIALS:

- *4 sticks (wooden meat skewers cut to these lengths: 5 cm, 10 cm, 18 cm, and 20 cm)*
- *6 x 5 cm paper clips*

- *12-inch ruler with cm and inch graduated scales*
- *1 sheet of legal-size paper (8.5 x 14 inches)*

Grade K, 1: Start here.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1. Show the 4 sticks in a random arrangement. **Which is the longest? Which is the shortest?** If the child does not align the sticks to compare, say: **Show me how you can check.**	If the child does not understand "shortest," ask for the "smallest."	1. Longest _____ Shortest _____ Aligns to compare _____		**a. Beginning** Any of Q1 incorrect: Not yet able to compare the length of two or more objects.
2. Use the longest stick (20 cm) and the 6 paper clips. **Measure this stick using the paper clips.** After this is done: **How long is the stick?** If the child just says "4," ask: **4 what?** If they say "4 inches," point to a clip and ask: **Is that an inch? What is this?**	The child should align 4 clips lengthwise without any gaps or overlaps. If the child does not understand, align one clip beside the stick and say, "Like this."	2. Use of non standard units _____ Measurement given ____ Suitable units given ____ The child must say suitable units (e.g., "4 clips," or "4 pins").		**b. Compares objects** Q1 correct, any of Q2 incorrect: Compares the length of two or more objects. **c. Uses informal units** All of Q1, 2 correct: Measures and describes the length of an object using informal units.

Grade K, 1: Progress to Q3 if the child successfully answers Q2. Stop if the child has difficulty.

Length Measurement Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- **4 sticks (wooden meat skewers cut to these lengths: 5 cm, 10 cm, 18 cm, and 20 cm)**
- **6 x 5 cm paper clips**

- **a 12-inch ruler with cm and inch graduated scales**
- **1 sheet of legal-size paper (8.5 x 14 inches)**

Grade 2: Start here. If a child has difficulty with Q3a, go back to Q 1 and 2.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
3a. Use the longest stick (20 cm). **About how long is this stick in inches?** After the child gives an estimate, hand them a ruler. **Now measure the stick in inches.** Then ask: **How long is the stick?**	Estimates for Q3 should be reasonable (between 6 and 10 in, between 15 and 25 cm) The child should say the appropriate unit (inch or centimeter).	3a. Inch estimate _____ Correct use of ruler _____ Measurement _____		**d. Uses formal units:** Either Q3a and 3b correct, but not both. Measures the length of an object using one system of formal units (Metric or Standard).
3b. Continue to use the longest stick. **About how long is the stick in centimeters?** After the child gives an estimate: **Now measure the stick in centimeters.** Then ask: **How long is the stick?**		3b. Estimate in cm _____ Measurement _____		**e. Facility with formal units:** Q3a, 3b and Q4 correct. Measures accurately using Metric and Standard units of measure.
4. Use the sheet of Legal size paper and the ruler. **Measure the shorter side in inches.** Then: **Measure the longer side in inches.**	The width given should be 8½ inches. The length given should be 14 inches, or 1 foot and 2 inches.	4. Width ____ Length _____		

End of Length Measurement section.

Time Measurement Assessment

Student name: _____   **Date:** _____

MATERIALS:

- *Analog clock face with movable hands*

- *Digital clock time cards*

- *Current classroom calendar*

Grade 1: Start here. Grade K: The Time Measurement section is optional. If you wish to assess K children, start here.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
1a. Say the days of the week. **1b. Say the months of the year.**	These can be said in any order.	1a. All days _____ 1b. All months _____		**a. Beginning:** Any of Q1-4 incorrect. Not yet able to tell time to the hour, know days of the week, and months of the year.
2. Tell me something you do in the morning. Repeat this question for afternoon, and for night.	The child should say appropriate activities.	2. M _____ A _____ N _____		
3a. Use the analog clock face. **Tell me these times.** Show the child 3 o'clock, then 10 o'clock. **3b**. Use the digital clock cards (5:00, 9:00). **Tell me these times.** Then point to the 9:00 card and give the child the analog clock face. **Make this time on the clock.**	The clock hands should be correctly placed (not reversed).	3. ____ _____ 3b. _____ _____ Shows 9:00 ____		**b. Hours/days/months** All of Q1-4 correct: Tells time to the hour, knows days of the week and months of the year.

Progress to Q4 if the child successfully answers Q1-3. Stop if the child has difficulty.

Time Measurement Assessment (continued)

Student name: _____   Date: _____

MATERIALS:

- *Analog clock face with movable hands*
- *Digital clock time cards*
- *Current classroom calendar*

Grade 2 start here. If the child has difficulty with any of Q4, revert to Q1-3.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
4. Use the analog clock face. **Tell me these times.** Show the child 3:30 and 8:30. For each time, say: **Tell something that you would be doing at this time.**	Either "three-thirty" or "half past three" can be used. The child should say appropriate activities.	**4.** ____ ____ Activity _____ _____		**c. Half hours/dates** All of Q4-6 correct: Tells time to the half hour, and reads a calendar.
5. Use the digital clock card (7:30). **Tell me this time.** Then give the child the analog clock face. **Make this time on the clock.**	The clock hands should be correctly placed (not reversed).	5. _____ Shows 7:30 _____		
6. Use the class calendar. **Look at the calendar. What is today's date? What will tomorrow's date be? What was yesterday's date? How can you tell?**	Listen for the day, date and month. If any are missed, ask: **And what ____ is it?**	6. Today _____ Tomorrow _____ Yesterday _____		

Progress to Q7 if the child successfully answers Q4-6.

Time Measurement Assessment (continued)

Student name: _____   **Date:** _____

MATERIALS

- *Analog clock face with movable hand*
- *2:50 digital clock time card*
- *Current class calendar*

Stop if the child has difficulty.

Questions	Prompts, notes	Child's responses	Comments	Stage of learning
7a. Use the analog clock face. **Tell me this time.** Show the child 11:15. **7b.** Use the 11:15 time. **Imagine one more hour goes by. What time will it be then?** **7c.** Use the 11:15 time**. Imagine ten more minutes go by. What time will it be then?**	It is acceptable for the child to count by 5s to find the "minutes past."	7a. 11:15 _____ 7b. 12:15 _____ 7c. 11:25 _____		**d. Tells time** At least four parts of Q7-9 correct: Tells time to five minute intervals, and uses a calendar to find various dates. **e. Facility with time** All of Q7-9 correct: Tells time accurately.
8a. Show the 2:50 digital clock card and give the child the analog clock face. **Make this time on the clock.** **8b.** Use the 2:50 time. **Imagine fifteen more minutes go by. What time will it be then?** **8c.** Use the 2:50 time. **Imagine it is one hour earlier. What time would that have been?**	The clock hands should be correctly placed (not reversed).	8a. Shows 2:50 _____ 8b. 3:05 _____ 8c. 1:50 _____		
9a. Use the class calendar. **Look at the calendar. What will the date be one week from now?** After this is done: **How did you know?** **9b. What will the date be two weeks from now?** After this is done: **How did you know?**	If either of these dates bridge to the next month, show the child the last day of the month, e.g., today's date, 21st October, show the child the day that will be October 31st.	9a. Next week's date _____ 9b. Two weeks from today _____		

End of Time Measurement section.