

**Attainment's**

# **Early Numeracy**

## **Assessment Manual**

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# OVERVIEW

The **Early Numeracy Assessment Manual** can be used for several purposes:

- It can be administered prior to instruction to determine where to start a particular student.
- It can be administered as an overall pretest of skills to determine if the student has splinter skills.
- It can be administered as a post-test of a unit to determine if a student has achieved mastery of unit objectives before moving on to the next unit.
- It can be administered at the completion of a unit to determine if a student has generalized skills addressed in upper units.

For whatever purpose you are administering the assessment, prepare for the assessment as described next.

## Preparation

Preparing for the assessment administration is easy:

- 1** Print an Early Numeracy Assessment Form. The forms are included in the Implementation Guide (Appendix D) and on the CD for convenient printing.
- 2** Practice the script for administering the assessment items before administering the assessment. The manual is set up with a student page and an examiner page. Specific instructions for administering each item of the assessment appear on the examiner page.
- 3** Prepare for the student's mode of response—eye gaze or augmentative/alternative communication (AAC) device—if required. Decide if you will need to modify the directions to accommodate the student's response mode (see Mode of Response and Modifications).
- 4** Gather the materials needed (see Materials).

## Mode of Response and Modifications

Students with significant disabilities may need individualized modes of responding, such as grasping at an item, eye gazing to the response, or activating an AAC device to communicate a response. It is important that the mode of responding is consistent for both assessment and instruction of skills/objectives. The Early Numeracy curriculum and Early Numeracy assessment can be delivered using any response mode that can be conceived of by modifying the materials and the directions.

Assessment materials can be modified by printing them from the CD-ROM. They can be enlarged, laminated, cut apart, and/or adhered to eye gaze boards or used with any alternative or augmentative communication (AAC) devices.

If using AAC devices, the responses should be preprogrammed, including numbers 1–5, 1–10, 1–15, or 1–20, depending on the unit you are assessing. It is also appropriate to modify the directions in the assessment, for example, changing action verbs to give me, show, look at, or touch.

## Demonstration Items

All test items of a skill are preceded by a demonstration. When demonstrating a skill, praise a correct response. If there is no response or an error response, first model the correct response and then give the student an opportunity to respond. If there is still no response or an error response, physically guide the student to the correct response. If a verbal response is required, model the correct verbal response (including activating an AAC device) and give the student an opportunity to respond.

Once a student has consistently shown mastery of a skill, skip the demonstration step in future assessments.

## **Allowable Verbal Prompts and Praise**

In some cases, verbal prompts can be given if the student shows confusion or hesitates longer than 5 seconds after an item is presented. Verbal prompts generally repeat the question or direction and should be given only once.

Praise of students for answering is indicated after each student response (e.g., “Nice work answering that question!” “Thank you for doing that counting!”). Be sure to praise a student’s effort whether the answer was correct or not.

## **Early Numeracy Assessment Form**

The reproducible Early Numeracy Assessment Form, for noting the student’s responses, is included in Appendix D of the Early Numeracy Implementation Guide. It is also included on the CD-ROM for convenient printing. Note that the form allows you to enter information over time.

## **Using the Early Numeracy Assessment to Determine a Starting Point**

Administer the assessment to determine a starting point in the program for instruction. Begin assessment of Unit One. Score an item correct if the student (S) responds correctly and independently. Total the scores for Unit One and calculate a percentage correct. If the student scores 75% or lower, begin instruction at Unit One. If the student scores higher than 75%, assess Unit Two, etc.

You may observe that a student has splinter skills. You can identify splinter skills by scanning the assessment form to identify skills in

a unit that the student scored correct (100%) for two trials (or 1 trial for rote counting). For example, the student scored below 50% on the overall unit assessment, but scored 100% on three skills: counting 1–5 movable and nonmovable items in a line and rote counting. In this case, you might assess these three skills at the next higher unit to see how far the student can go. Instruction could be adjusted accordingly. Refer to the Implementation Guide for further discussion.

## **Using the Early Numeracy Assessment to Determine Unit Mastery**

At the end of a unit, administer the Early Numeracy Assessment to determine mastery of the unit. Score an item correct if the student responds correctly and independently. Total the scores for the unit and calculate a percentage correct. If the student scores 75% or higher, he or she is ready for the next unit of instruction.

Note any splinter skills and continue assessment of these skills if you would like to know how far the student can go. Refer to the Implementation Guide for further discussion.

## **Materials**

All assessment materials are provided in the Early Numeracy curriculum, except a yardstick. In addition, the first time administering the Unit Four assessment, cut the ribbon provided into a 12" and a 24" length. For Unit Four, you will need to find an item in your room approximately 3' long for measuring. See the following page for a list of materials by unit.

Note that in the assessment, student is referred to as S. Open the Assessment Manual so the direction page faces you and the opposite page (the student pages) face the student.

## Materials

UNIT ONE	UNIT TWO	UNIT THREE	UNIT FOUR
<ul style="list-style-type: none"> <li>■ 5 pennies</li> <li>■ 6 green counting cubes</li> <li>■ Symbol tiles (+, &lt;, &gt;, =)</li> <li>■ 6 large paperclips</li> <li>■ Optional: AAC device (preprogrammed with numbers 1–5)</li> </ul>	<ul style="list-style-type: none"> <li>■ 6 pennies</li> <li>■ 12 green counting cubes</li> <li>■ Symbol tiles (+, &gt;, =)</li> <li>■ 1 ruler</li> <li>■ Optional: AAC device (preprogrammed with numbers 1–10)</li> </ul>	<ul style="list-style-type: none"> <li>■ 10 pennies</li> <li>■ 12 counting cubes (6 green, 6 yellow)</li> <li>■ Symbol tiles (+, &lt;, =)</li> <li>■ 6 baseballs</li> <li>■ 6 bats</li> <li>■ 6 quarters</li> <li>■ 1 ruler</li> <li>■ Optional: AAC device (preprogrammed with numbers 1–15)</li> </ul>	<ul style="list-style-type: none"> <li>■ 12 pennies</li> <li>■ 8 counting cubes (4 yellow, 4 green)</li> <li>■ 12 baseballs</li> <li>■ 12 bats</li> <li>■ Symbol tiles (+, &lt;, &gt;, =)</li> <li>■ 1 yardstick (you provide)</li> <li>■ Table or desk about 36" long (you provide)</li> <li>■ 12" length of ribbon</li> <li>■ 24" length of ribbon</li> <li>■ Optional: AAC device (preprogrammed with numbers 1–20)</li> </ul>



# UNIT ONE: Math Is Everywhere





## SKILL 2

Count 1–5 nonmovable objects in a line.

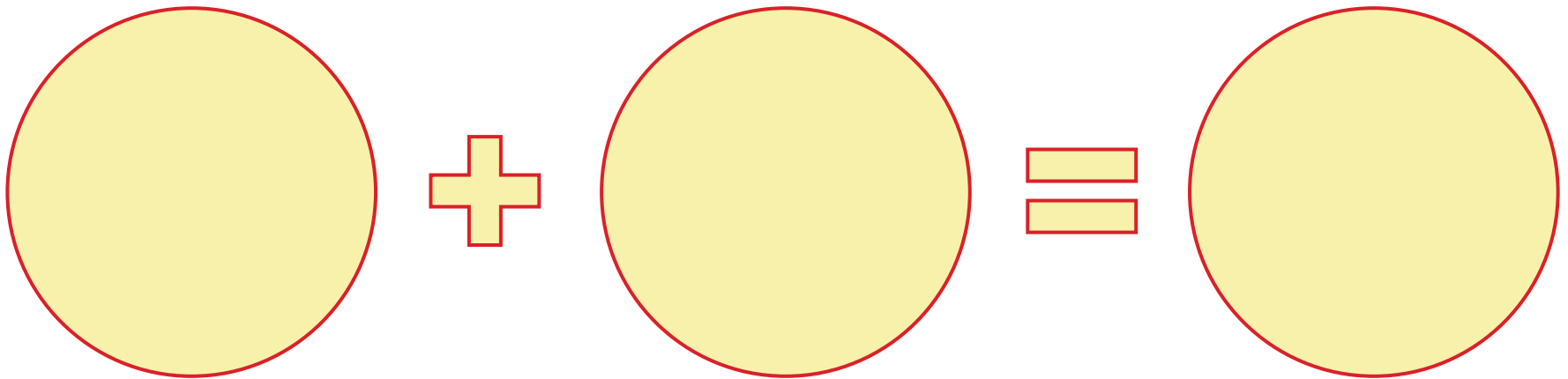
## MATERIALS

- Optional: AAC device

## ADMINISTRATION

**ITEM 3** Present the student page. Say, **Count the pennies. How many pennies are there?**

Praise the S for answering and record response.





### SKILL 5

Add premade sets with sums to 5.

### MATERIALS

- 6 counting cubes
- Optional: AAC device

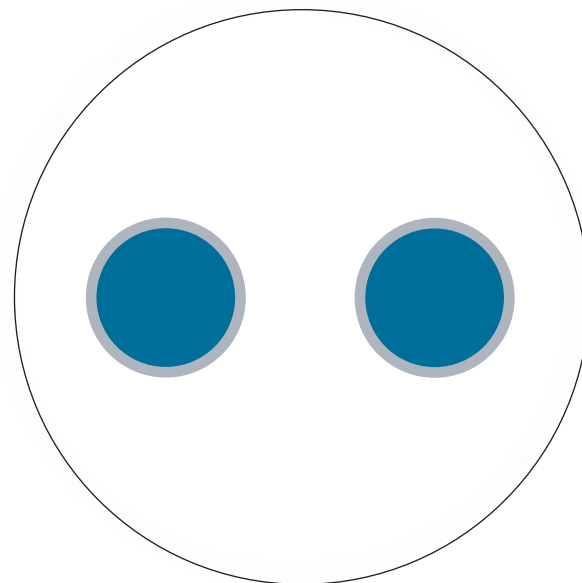
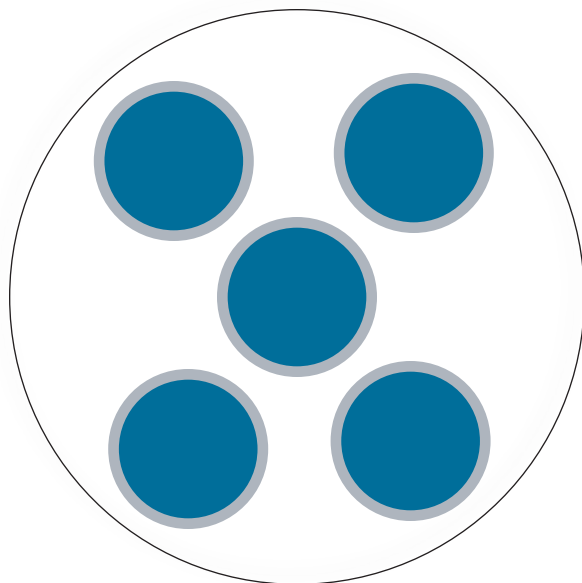
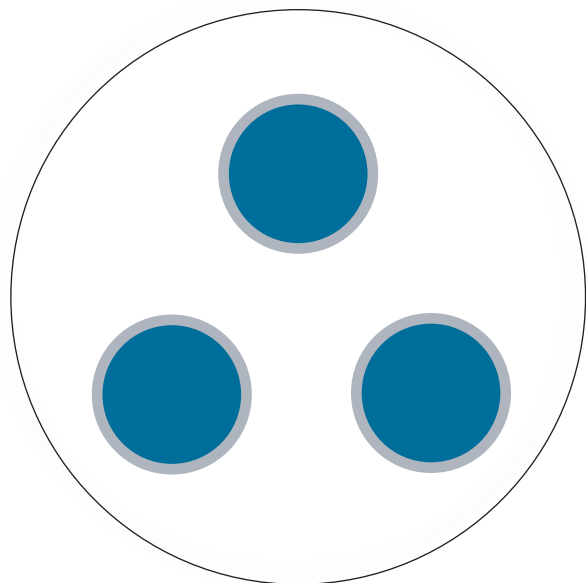
### DEMONSTRATION

Present the student page. Place 1 counting cube in the first circle. Place 1 counting cube in the second circle. Ask, **How many are there altogether?** Move both counters to the last circle. Count while touching each counter: **1, 2. There are 2.**

Return counting cubes to their sets. Say, **Your turn. How many altogether?**

Wait (up to 5 seconds) for the S to respond. Praise a correct response.

If there is no response or an error response, model moving the counting cubes to the last circle, counting, and then responding verbally. Return the counting cubes to the first and second circles. Give the S another opportunity to respond. If there is still no response or an error response, physically guide the S to the correct response. Model the correct verbal response.



### SKILL 6

Compare sets for same/equal.

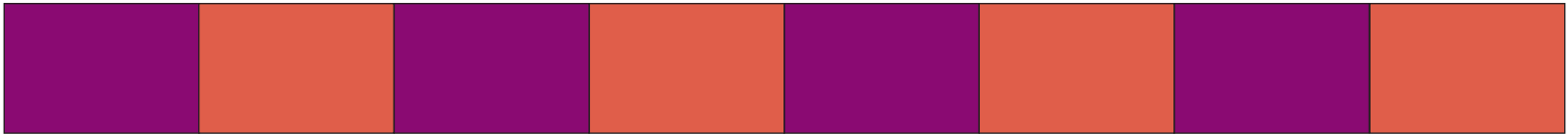
### MATERIALS

- 3 counting cubes

### ADMINISTRATION

**ITEM 11** Give 3 counting cubes to the S. Present the student page. Say, **Show me which set is equal to your set.**

Praise the S for answering and record response.



### SKILL 8

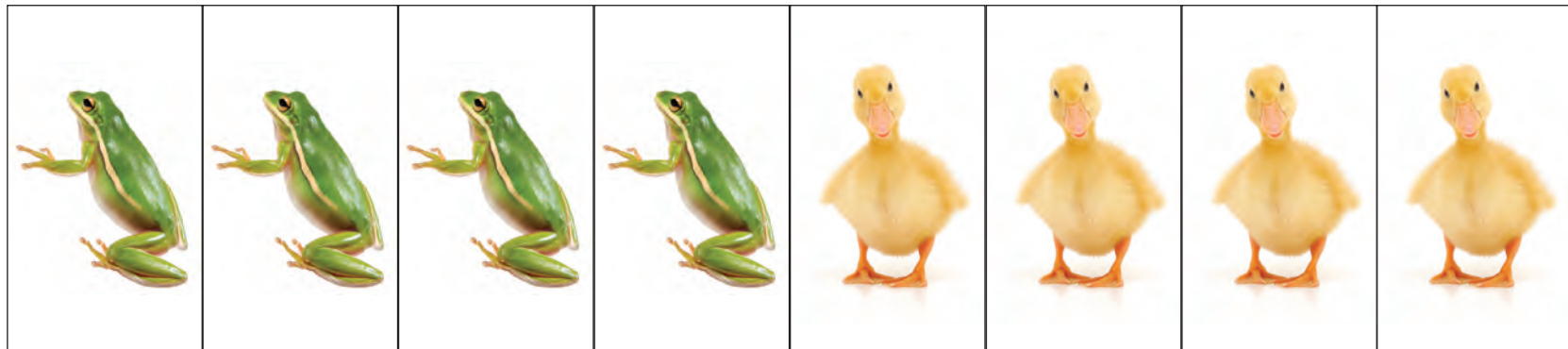
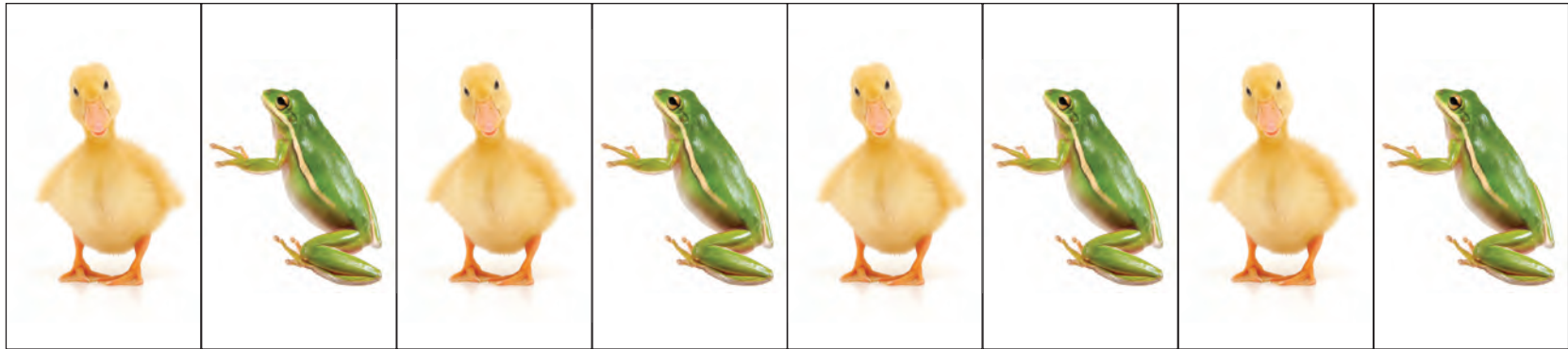
Identify an ABAB pattern.

### ADMINISTRATION

**ITEM 14** Present the student page. Say, **Point to the ABAB pattern.**

Praise the S for answering and record response.





### SKILL 8

Identify an ABAB pattern.

### ADMINISTRATION

**ITEM 15** Present the student page. Say, **Point to the ABAB pattern.**

Praise the S for answering and record response.



### SKILL 9

Use a nonstandard unit of measurement to measure 1–5.

### MATERIALS

- 6 large paperclips
- Optional: AAC device

### ADMINISTRATION

**ITEM 17** Present the student page. Place 6 large paperclips in front of the S. Say, **How long is this shoe? Use the paperclips to measure.**

Praise the S for answering and record response.

**SEPTEMBER**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



## SKILL 10

Identify dates from 1st to 5th on a calendar.

## DEMONSTRATION

Point to September 1st on the student page. Then say, **This is September 1.** Take your finger off the number. Then say, **Your turn. Point to September 1.**

Wait (up to 5 seconds) for the S to respond. Praise a correct response.\*

If there is no response or an error response, point to the correct response and give the S another opportunity to respond. If there is still no response or an error response, physically guide the S to the correct response.

*\*Note: The purpose of this skill is to identify dates 1–5, not to identify ordinal numbers.*