



6: Hiding Assessment

Linking Assessment to instruction

The following charts outline suggested activities for each instructional level of the *Hiding Assessment*. They refer you to particular activities from the *Developing Number Concepts* (DNC) series of books. The DNC series includes both teacher-directed and independent activities specifically designed to meet the varied needs of students. The suggested activities are coded for easy access. For example, “1:2-23” refers to Book 1, Chapter 2, Activity Number 23.

Please note – these charts provide a quick-overview of activities for instruction. For complete background information, please refer to these other helpful resources:

Math Time: The Learning Environment by Kathy Richardson

Developing Number Concepts by Kathy Richardson

For Professional Development Opportunities

Contact Math Perspectives Teacher Development Center: www.mathperspectives.com

Suggested Reading

For additional information that will support your instruction, read the following sections from *Developing Number Concepts Book Two: Addition and Subtraction*:

- What You Need to Know About Addition and Subtraction (pp. xvii – xxii)
- Interpreting and Symbolizing Addition and Subtraction (pp. 2 – 12)
- Internalizing Number Combinations to 10 (pp. 42 – 53)
- About the Activities (pp. 54-55)
- Developing Strategies for Adding and Subtracting (p. 100 – 111)

Providing Appropriate Instruction

When helping children develop proficiency with decomposing numbers, it is important to recognize that competency develops over time. Present a variety of activities, allowing children to experience working with parts of numbers in many ways over several weeks. This will help them make generalizations and integrate their ideas. Let their responses dictate the amount of instructional time you provide before moving on.

- **Teacher-Directed Small-Group Work**

Choose 3 or 4 activities and present them in a 10-15 minute small-group session to provide the children with a variety of experiences. Do the same tasks for several days. Occasionally replace one of the tasks with a new one. Adjust the size of the numbers according to the children’s responses. Usually work with just one group a day so you have time to interact with the children while they work at the Independent Stations.

- **Independent Station Work**

Give children opportunities to choose from among several activities. These choices should be available for several weeks. During this time, the children will be developing proficiency and moving to larger numbers, as they are able. Interact with the children as they work, supporting them and challenging them as needed.

Part One: Hiding Assessment with Models

Since the goal is for children to know the parts of numbers, the focus for determining the level of instruction they need is on what they know about parts of numbers and not their ability to get right answers. They are “ready to apply” if they know all the parts for the number being assessed. They “need practice” if they know some parts, and count on or use relationships for parts they don’t know. They “need instruction” if they make errors or still count all most of the time. They “need a prerequisite” if they make errors or guess most of the time.

Needs Prerequisite (N)

(N) – Makes three or more errors or guesses.

Provide experiences where children can learn to recognize small groups such as those listed in the following from Developing Number Concepts: Book 2.

Recognizing Small Groups		
TEACHER-DIRECTED ACTIVITIES		Numbers To 5-6
2: 3-2	<i>Instant Recognition of Number Arrangements</i>	•
2: 3-3	<i>Instant Recognition of Number Shapes</i>	•
2: 3-4	<i>Instant Recognition of Number Trains</i>	•

Needs Instruction (I)

(I) – May have 2 errors, counts all for more than half of the combinations.

Provide experiences focused on describing parts of numbers.

TEACHER-DIRECTED ACTIVITIES		To 6	To 10
2:2-1	<i>Snap It, Level 1 and Extension</i>	•	•
2:2-2	<i>The Tub Game, Level 1 and Extension</i>	•	•
2:2-3	<i>The Wall Game</i>	•	•
2:2-4	<i>Bulldozer</i>	•	•
2:2-5	<i>The Cave Game</i>	•	•
2:2-7	<i>Finger Combinations</i>	•	•
2:2-8	<i>Working with Number Shapes</i>	•	•
2:2-9	<i>Number Shapes: On and Off</i>	•	•
2:2-10	<i>Working with Number Trains</i>	•	•
2:2-11	<i>Number Trains: On and Off</i>	•	•
2:2-12	<i>Counting Boards: Number-Combination Stories</i>	•	•

INDEPENDENT ACTIVITIES			
2:2-14	<i>Number Arrangements: Using Cubes</i>	•	•
2:2-15	<i>Number Arrangements: Using Color Tiles</i>	•	•
2:2-16	<i>Number Arrangements: Using Toothpicks</i>	•	•
2:2-17	<i>Number Arrangements: Using Collections</i>	•	•
2:2-18	<i>Counting Boards: Making Up Number-Combinations Stories</i>	•	•
2:2-20	<i>Number Shapes: Using Number Cubes</i>	•	•
2:2-21	<i>Number Shapes: Using Spinners</i>	•	•

Needs Practice (P–, P, P+)

(P–) – Counts all for up to half of the combinations, may have 1 error.

(P) – Figures out 2 or more, may have 1 error, may not count all.

(P+) – Knows all but 1 quickly, no errors, no counting all (may count on or back or use relationships for 1 combination).

Focus on identifying missing parts of numbers using objects.

TEACHER-DIRECTED ACTIVITIES		To 6	To 10
2:2-1	<i>Snap It, Level 2</i>	•	•
2:2-2	<i>The Tub Game, Level 2</i>	•	•
2:2-5	<i>The Cave Game</i>	•	•
2:2-6	<i>Grab-Bag Subtraction</i>	•	•

INDEPENDENT ACTIVITIES			
2:3-15	<i>Build-a-Floor Race</i>	•	•
2:3-16	<i>Apartment Buildings</i>		•
2:3-22	<i>Grab-Bag Subtraction Station</i>	•	•
2:3-25	<i>The Snap-It Station</i>	•	•
2:3-26	<i>What's Missing?</i>	•	•

Ready to Apply (A)

(A) – Knows all quickly, no errors.

Begin work with identifying missing parts mentally as described in Part Two: Hiding Assessment without Models.

Part Two: Hiding Assessment without Models

The expectation is that the child will be “Ready to Apply” on Part One for any of the numbers you will be assessing in Part Two.

Even when children know parts of numbers with a model, many find the task much harder when there is no model to use as a referent. It is a different level of challenge for young children to think about objects without anything to refer to. When a model is hidden, it is still there and adds support for the children’s thinking. One part is visible which means they don’t have to visualize that part. “What if” questions require the child to imagine both parts.

Needs Prerequisite (N)

(N) – Makes three or more errors or guesses.

Needs Instruction (I)

(I) – May have 2 errors, counts all for more than half of the combinations.

Children who need a prerequisite or need instruction, most likely need more experiences with the model. Continue to provide experiences with the model even for those numbers they knew (ready to apply) on Part One.

Needs Practice (P-, P, P+)

(P-) – Counts all for up to half of the combinations, may have 1 error.

(P) – Figures out 2 or more, may have 1 error, may not count all.

(P+) – Knows all but 1 quickly, no errors, no counting all (may count on or back or use relationships for 1 combination).

Provide practice identifying the missing parts mentally. Focus on numbers they know very well first. Increase the numbers as they are able.

TEACHER-DIRECTED ACTIVITIES		To 6	To 10
2:3-6	<i>What Do You Think? Using Counting Boards</i>	•	•
2:3-7	<i>What Do You Think? Using Grab Bags</i>	•	•
2:3-8	<i>What Do You Think? Using Tubs</i>	•	•
2:3-9	<i>Let's Pretend: Grab Bags</i>	•	•
2:3-10	<i>Let's Pretend: Counting Boards</i>	•	•
2:3-11	<i>Let's Pretend: Number Trains</i>	•	•
2:3-12	<i>Let's Pretend: Number Shapes</i>	•	•

INDEPENDENT ACTIVITIES			
2:3-20	<i>Counting Boards: Think and Write</i>	•	•

Ready to Apply (A)

(A) – Knows all quickly, no errors.

If children are ready to apply their knowledge of the parts of numbers:

Provide opportunities to use what they know to solve problems using two-digit numbers.