Student Name: _____

Kindergarten Numeracy Development: Seeing and Describing Patterns

Developmental aspects	Emerging With direct support… →	Developing With guided support… →	Applying With minimal support… →	Extending →
The Child	With direct support, and teacher modeling, may participate and may attempt to make sense of mathematical experiences.	With guided support, demonstrates a willingness to explore mathematical ideas while participating in problem solving experiences. Is beginning to show an awareness of numbers, space and time used in everyday life.	With minimal support, demonstrates interest in and a willingness to explore mathematical ideas while purposefully participating in problem solving experiences. Communicates an awareness of how numbers, space, and time are used in everyday life.	Shows interest and curiosity while purposefully exploring mathematical problem solving experiences. Perseveres. Makes and explains connections to numbers, space and time as used in everyday life.
Understanding Pattern				
Seeing and describing patterns in our world	With direct support, may identify a repeating pattern in our world.	With guided support, identifies a repeating pattern in our world.	•With minimal support, identifies and describes a repeating pattern in our world.	Spontaneously identifies and describes repeating patterns in our world.
The Support/Scaffolding*	The Model: showing, instructing, explaining, directing, making explicit, demonstrating, giving examples	The Coach: structuring, sequencing, focusing, cueing, guiding, organizing, supporting	The Advisor: suggesting, reminding, prompting, monitoring, asking for elaboration	The Mentor: extending, stretching, wondering aloud, exploring, "what if-ing"
*a variety of supports (teachers, peers, environmental, etc.) can be provided at any stage of development				

Scenario: Over the year, the kindergarten teacher has been pointing out and describing patterns in the school day, in nature, in fabrics, in tiles, in poems, songs, and dances, etc. Children are responding to this modeling in different ways and at different times, gradually contributing their own examples.

Direct Support

Gwen seems unaware of any repetitive visual or decorative patterns, but loves to march down the hall to gym saying "left, right, left, right." She also loves to tap or clap in time to drum beats, music and poetry. The teacher provides Gwen with <u>direct support</u> to awaken her awareness of the patterns she hears and feels. To do this, she *explicitly comments* on Gwen's sense of rhythm: "See how Gwen noticed the pattern in this music. Let's see if we can all march to the beat the way she does." The teacher also draws Gwen's attention to *examples of patterns* in her actions: "Gwen, when you tap with your fingers, you're making the same pattern as the music. Did you notice that it repeats again and again?"

Guided Support

On a walk to the playground, the teacher asks the children if they can see any patterns around them. Rod looks confused, so she provides guided support by helping him to *focus* on the school building, and *cues* him to look for repeating patterns in the bricks, windows, doors or roof. Rod points to the striped pattern made by the siding.

Minimal Support

One day Brent says, "We always go home after gym." The teacher offers <u>minimal support</u> by asking for elaboration: "Do you think that is a pattern?" Brent says, "I think so, because it happens every time we go to gym." The teacher *prompts* Brent to see if he can think of any other patterns in the daily timetable.

Without Support

<u>Without support</u>, Chantelle rushes in from the school yard, excitedly explaining that the swings were making a pattern. She swings her arms to show what she means, and says, "Two swings were going back and forth, back and forth. When one went back the other went forth…in a pattern! The teacher *extends her thinking* by asking her to describe and explain the pattern to the rest of the class.

Provide frequent opportunities for students to explore and discover patterns and non-repeating sequences using manipulatives, in stories, in songs and rhymes, through movement, and in their environment.
Mathematics Integrated Resource Package, 2007, p. 65