Guess My Pattern

Strand: Number and Number Sense

Topic: Determining patterns created by counting by twos, fives, and tens on
                     hundreds chart

Primary SOL: 2.2 The student will
   a) count forward by twos, fives, and tens to 120, starting at various
      multiples of 2, 5, or 10; and
   b) count backward by tens from 120.

Related SOL: 2.16

Materials

- Hundreds charts (attached) or Hundred-twenty charts
- Sequence Cards (attached)
- Guess My Pattern Recording Sheet (attached)
- Transparent counters
- Colored pencils

Vocabulary

digit, pattern, predict, sequence, skip count

Student/Teacher Actions: What should students be doing? What should teachers be doing?

1. Tell students that they will be figuring out different skip-counting patterns from just a few numbers. Have students use a think-pair-share strategy to think of different skip-counting patterns, tell their patterns to a classmate, and then share the patterns with the class.

2. Display a large hundreds chart or a hundred-twenty chart. Distribute transparent counters and hundreds charts to students. Inform students that you are going to give them a sequence of numbers that form a pattern, and it will be their job to guess the pattern. Each time you call a number, mark the number on the displayed hundreds chart and have students place transparent counters on that number on their own charts. Instruct students to wait until after the first four numbers in the sequence have been called before guessing the pattern.

3. Choose a sequence card and call out the first three (or four) numbers in the sequence. Ask students to guess the pattern, and call on several volunteers to share what they think the pattern might be. Before revealing the pattern, have students predict what the next two numbers in the sequence will be. Call out the next number (or two numbers) in the sequence, and ask students whether their prediction was correct. If not, have the class make a new prediction. Call out the next few numbers, and check to see whether the new prediction is correct.

4. Repeat the process in step 3 a few times with different sequences.

5. Group students into pairs. Give each pair a colored pencil and a Guess My Pattern Recording Sheet. Have students take turns as the "caller" and the "receiver." The caller thinks of a skip-counting pattern and calls out three (or four) digits in the pattern for the receiver to shade in on a hundreds chart and then guess the pattern. Once the receiver guesses the pattern, students switch roles and repeat the process.

6. Review and summarize with the class what students did and learned in the activity.

Assessment
- **Questions**
  - Were some skip-counting patterns easy to identify? If so, which ones? Why?
  - Were some skip-counting patterns difficult to identify? If so, which ones? Why?
  - What digits indicate that a pattern is counting by twos?
  - What digits indicate that a pattern is counting by fives?
  - What digits indicate that a pattern is counting by tens?

- **Journal/writing prompts**
  - Billy is thinking of a skip-counting pattern: 55, 60, 65, 70. Explain Billy's pattern, and list the next three numbers in his pattern. Do you notice anything special about the numbers in Billy's pattern?
  - Compare skip counting by fives to skip counting by tens, including what these patterns have in common and what makes them different.
  - Compare skip counting by tens to skip counting by twos, including what these patterns have in common and what makes them different.

- **Other Assessments**
  - As students are working, observe their strategies and rationales for determining the patterns. Encourage the use of various strategies, and allow time for student discussion and justification. Note who is having difficulty identifying patterns and making accurate predictions, and give help, as needed. Collect recording sheets as an assessment.
  - During the activity, occasionally stop and have students answer the following question: "How well do I understand what I am doing?" Students may respond to the question by showing thumbs up (I get it), a sideways thumb (I kind of understand), or a thumbs down (I'm still confused). Give help, as needed.
  - Have students complete the statements, "Today I learned _____. Tomorrow I need _____."

Extensions and Connections (for all students)
- Read a realistic story that has skip-counting patterns, and discuss how skip counting can be used in practical, everyday situations.
- Have students create a class book of skip-counting patterns.
- Have students do an art project showing skip-counting patterns (e.g., flowers with two leaves, with four leaves, with six leaves …; a group of five ladybugs, a group of 10 ladybugs, a group of 15 ladybugs …).

Strategies for Differentiation

- Provide large hundreds charts to students who have difficulty using the small charts on the recording sheet.
- Provide sequence cards to students who have difficulty creating their own skip-counting patterns.
- Redirection and corrective feedback should be given throughout lesson.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

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Sequence Cards

45, 50, 55, 60, 65, 70… *Skip count by fives*	20, 25, 30, 35, 40, 45… *Skip count by fives*
30, 40, 50, 60, 70, 80… *Skip count by tens*	120, 110, 100, 90, 80… *Count backward by tens from 120*
20, 22, 24, 26, 28, 30… *Skip count by twos*	36, 38, 40, 42, 44, 46… *Skip count by twos*
52, 54, 56, 58, 60, 62… *Skip count by twos*	48, 50, 52, 54, 56, 58… *Skip count by twos*

85, 90, 95, 100, 105…

Skip count by fives

98, 100, 102, 104, 106…

Skip count by twos

110,112, 114, 116…

Skip count by twos

Guess My Pattern Recording Sheet
Directions: The caller calls out some numbers of a skip-counting pattern, and the receiver shades the called-out numbers in one of the hundreds charts below. The receiver guesses the pattern and writes it under the hundreds chart. Players exchange roles and repeat the process.

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
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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Guess My Pattern Recording Sheet
Directions: The caller calls out some numbers of a skip-counting pattern, and the receiver shades the called-out numbers in one of the hundreds charts below. The receiver guesses the pattern and writes it under the hundred-twenty chart. Players exchange roles and repeat the process.

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101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

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101	102	103	104	105	106	107	108	109	110
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Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
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