Grade 2	Lesson: 6-6 Problem Solving: Look for a Pattern	Reference to English

Math Standard(s): 2.NBT.2 **Domain: Number and Operations in Base Ten**

Content Objective(s):	Language Objective(s):
Students will use number patterns to solve problems. *I can use number patterns to solve problems*	Students will say ___ comes next. *I can say ___ comes next.*
Essential Understanding: Some problems can be solved by identifying elements that repeat in a predictable way.	**Required Academic Vocabulary for Word Wall:** **Listen:** predict **Read:** **Write:** **Speak:** next **Sentence Frame:**
Materials: • Connecting Cubes (Teaching Tool 1) • Whiteboards, erasers, markers • Look for a Pattern (page 177) • Guided Practice (page 178)	**Additional Lesson Vocabulary:** Number pattern,

Lesson:	Instructional Time: 25 – 30 minutes

Opening: (3 minutes)

- Have the students on the carpet at the beginning of the lesson.

T: "You have learned how to make an organized list to solve problems. Today, you will learn how to look for a pattern to help you solve problems."
T: "I am going to start counting and I want you to join in. 2,4,6,…."
S: *will join the teacher skip counting by 2s.*
T: "Perfect, let's do it again but with a different pattern. 10, 20, 30, 40,…what is next?"
S: *will count by 10s with the teacher and then say the next number.*
T: "One more, 5, 10, 15, 20… what comes next?"
S: *will count by 5s with the teacher and then say the next number.*
T: "When you tell me the number that comes next in the number pattern you are predicting. Predicting is when you think you know what will happen but you aren't completely sure. Like when the weatherman says it is going to rain tomorrow. Sometimes he is right and sometimes he is not!"

Introduction to New Material (Direct Instruction): (5 minutes)

- Write 1, 4, 7 on the board.
- Pass out connecting cubes ready for each students.

T: "I just wrote a number pattern on the board. 1, 4, 7, ___. What comes next? Use your connecting cubes to figure out what number comes next in the pattern."
S: *will use connecting cubes to find out what number comes next in the pattern.*
T: "Eyes on me. (wait for all the students to be looking at the teacher)**. Let's figure out the pattern together. My first number is 1 here is one cube. My second number is 4 here are four cubes. My third number is 7 here are 7 cubes. I will line them all up next to each other. Notice the pattern; when you build each train of cubes you are adding how many cubes. Show me with your fingers."**
S: *will show 3.*
T: "Good, 1 plus 3 is 4, 4 plus 3 is 7, so what number comes next in the pattern?"
S: *will say, "10"*
T: "Yes, 7 plus 3 is 10. Good job."

Guided Practice: (10 minutes)
Use the modeling cycle:
Teacher Does:
T: "Now it is your turn to practice with a partner. I am going to write 3 more number patterns on the board. You and your partner will need to use connecting cubes to predict what number comes next in the pattern. When you figure out what number comes next, you need to say '___ comes next'. You will be given page 177 to record your patterns."

1 Students Does with Teacher:
T: "I have already shown you how to predict the next number in a pattern, now I want one of you to show us."

- The teacher will choose one student to volunteer.

- Write the first 3 numbers in a number pattern on the board – 2, 7, 12, ____.

T: "There is a number pattern written on the board. Use connecting cubes to predict what comes next."
S: *will use connecting cubes to predict what comes next in the number pattern.*
T: "Good, how many cubes are in the first train?"
S: *will say, "2 cubes."*
T: "How many are in the 2nd train?"
S: *will say, "7 cubes."*
T: "How many cubes are in the 3rd train?"
S: *will say, "12 cubes."*
T: "What comes next? How many cubes do you add to each train?"
S: *will say, "I add 5 cubes to each train. 17 comes next."*
T: "Great job. 17 does come next, please write it on the blank on the board."
S: *will write 17 on the board.*
T: "Thank you, please sit down."

<u>All Students Do:</u>

- Write the following patterns on the board.
  - 3, 6, 9, ____
  - 4, 6, 8, ____
  - 1, 5, 9, ____
  - 6, 12, 18, ____

T: "Now it is your turn. There are four patterns that you need to complete. Each person in each group will have to do 2 problem. And don't forget to say '____ comes next.' You will have 4 minutes."
S: *will do the activity.*

- Teacher will walk around the room checking on the students.

T: "(teacher will clap hands), **Time is up! Come back to your spots. 10,9,8,7,6,5,4,3,2,1"**

- Collect all the papers.

Closing: (3 minutes)

- Use a document cam to show problem 1 from guided practice.

T: "I have a story to tell you. When I finish telling you the story I need you to help me fill out the rest of this chart."
T: "The children at science camp see 5 insects on Monday. Look, they have 5 written next to Monday."
T: "They saw 10 insects on Tuesday and 15 insects on Wednesday. Look at the number of insects they see. 5 on Monday, 10 on Tuesday, 15 on Wednesday. Tell your neighbor what comes next."
S: *will tell their neighbor, "20 comes next."*
T: "Let's count together. 5, 10, 15, 20. 20 comes next. Then what?"
S: *will respond, "25 comes next"*
T: "Yes, 25 comes next! Good job!"
T: "What if we continue the pattern all the way to Saturday? How many insects will the students see on Saturday? Tell your neighbor."
S: *will turn to their neighbor and say, "30 insects."*
T: "Count with me, 5, 10, 15, 20, 25, 30. The students will see 30 insects on Saturday. 30 comes next."
T: "Good job today."

- If the students need more practice continue with problems 3-5 on Independent Practice.

Assessment:

Guided Practice

1 10	2 20	1 10	2 20
3 30	4 40	3 30	4 40
5 50	6 60	5 50	6 60
7 70	8 80	7 70	8 80
9 90		9 90	