Questions to Be Discussed During the Lesson

1. Ask students to build the first three pictures for each pattern.

2. Ask students to study the three pictures and then make the fourth picture.

3. Ask students to describe how they see the pictures changing. (Each picture is changing by 2 tiles.)

4. Ask students to complete the first four rows of the chart for each pattern.

5. Ask students if the chart is illustrating the same thing they described in question 3. (The chart is increasing by 2 just like the pictures.)

6. Have students describe picture 5 and complete the chart for picture 5 using the pattern they described.

7. Ask students to write an arithmetic expression such as 4 + 2 for 6 and 4 + 2 + 2 for 8, etc. for pattern 1.

8. Ask students to write an arithmetic expression for the 10^{th} picture. Have students try to describe the 10^{th} picture.

9. Repeat question 8 for the 20^{th}, 50^{th}, and 100^{th} pictures.

10. Ask students to write an arithmetic expression for the number of tiles in the nth picture.

11. Ask students to re-look at the pattern. They first saw the pattern being put together one way. Ask students to think of second way the pattern could be made. 3 + 3 + 2, 4 + 4 + 2, 5 + 5 + 2, etc for the first pattern. Record the expression in the column on the chart.

12. Ask student to look for a 3^{rd} and 4^{th} way to look at the pattern. (4 + 2 + 2, 4 + 2 + 2x2, 4 + 2 + 3x2, etc for pattern 1)

13. Ask student to continue to look for another way to describe how the pattern is changing. (3 x 3 - 1, 4 x 3 - 2 x 1, 5 x 3 - 3 x 1, etc. for pattern 1)

14. Challenge questions: Can they predict which picture number will have the following number of tiles for

    Pattern 1: 54 tiles
    Pattern 2: 28 tiles
    Pattern 3: 63 tiles
    Pattern 4: 124 tiles