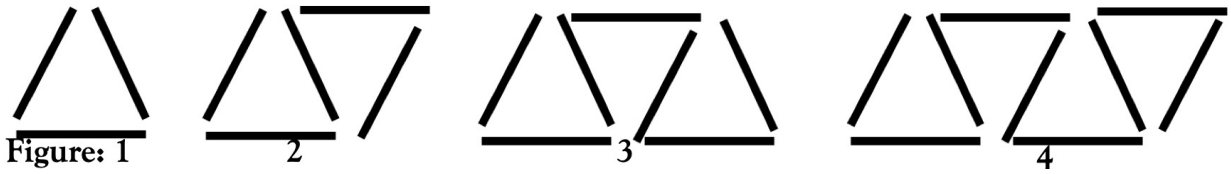
Problem Solving

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

1. Ryan is building a toothpick sequence as shown below. He used 69 toothpicks in the last figure, how many toothpick are needed for the entire project? Note that all the figures are needed in order to have the sequence.



2. Molly Goes to School: Molly is trying to get to school. She lives five blocks south of the school and two blocks west (see the diagram). Molly gets bored easily taking the same route to school. Determine if it is possible for Molly to take a different route (always 7 total blocks) to school every day for 4 weeks assume a normal school week.

Extra Practice:

3. Find the Right Labels: There are three boxes with different colored chips in them. One box has only blue, one box has only white, and the last box has blue and white. Each label is incorrect. Determine the correct placement of the labels you may draw ONLY one chip from one box. From that, determine the correct placement of all the labels.

4. Remove the two diagonally opposed corners of a checkers board. Given a set of dominoes such that each domino can cover two adjacent squares on the board, can the dominoes cover the board with no dominoes hanging off?

5. Seats in a Theater: A theater is set up in such a way that there are 14 seats in the first row and 4 additional seats in each consecutive row. The last row has 84 seats. How many seats are in the theater?

6. Magic Squares: Arrange the numbers 1 through 9 into a 3 by 3 grid so that the sum of every row, column, and main diagonal is the same.