

Handshake and Fencepost Activity

For each problem, complete the following information.

- **Understanding the problem:**
 - What data or information is known?
 - What is unknown?
 - What are the conditions?
- **Plan the solution:** Show your plan for solving this problem.
- **Carry out the plan:** Using your plan, show your work and your solution.
- **Review and discuss your solution:** Reflect on your solution.

Complete problems #1 and #2 individually.

1. Handshake Problem #1: Assume there are 20 people in a room, including you. You must shake hands with everyone else in the room. How many hands will you shake? If there are N (where $N > 0$) people in the room, how many hands will you shake?
2. Fence Post Problem: You need to build one side of a fence that is 12 yards long. This fence will be built with fence posts and rails that connect one fence post to another. If each fence post is 1 yard away from the next fence post, how many fence posts will be needed for this side of the fence? How many fence posts will be needed for a side of a fence that is N (where $N > 0$) yards long?

Read and begin planning your solution for problems #3 and #4. These problems will be completed in class tomorrow with your group. Each group will present their solutions to the class.

3. Handshake Problem #2: Assume there are 10 people in a room, including you. Each person in the room must shake hands one time, and only time, with all the other people in the room. How many handshakes will occur? If there are 20 people in the room, how many handshakes will occur? If there are N (where $N > 0$) people in the room, how many handshakes will occur?
4. Reflections: Why are problems like these important to learn how to solve? How could this type of solution be of benefit to a carpenter, a chef, a teacher?