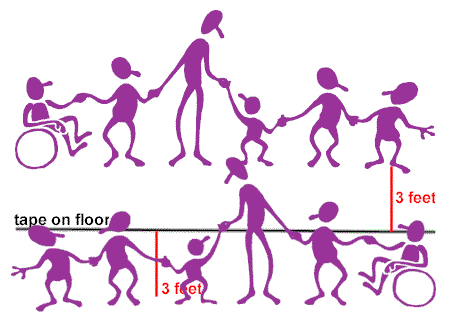
|  |  |
| --- | --- |
| |  | | --- | | **Locus:  At a Fixed Distance from a Line** | |

**Consider:** Your teacher has placed a strip of tape on the classroom floor which forms a straight line.  The teacher gives each student a yard stick and asks that each student stand exactly 3 feet away from the line on the floor.  Can you picture what will happen?  If you, and all of your classmates, stand exactly 3 feet away from the line, describe where you and your classmates will be standing.

**Answer:**



You and your classmates will form two straight lines on either side of the tape on the floor,  
 at a distance of 3 feet away from the tape.

You and your classmates are the locus of points equally distant (**equidistant**) from a given line (the tape on the floor).

Stated formally, we have our next locus theorem.

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| **Locus Theorem 2: (line)** |
| The locus of points at a fixed distance, ***d***, from a line, ***l***, is a pair of parallel lines ***d*** distance from ***l*** and on either side of ***l***.  http://www.regentsprep.org/Regents/math/geometry/GL1/PicTh2.gif |

Note that all three of these lines are parallel.