How to Draw a Ray Diagram
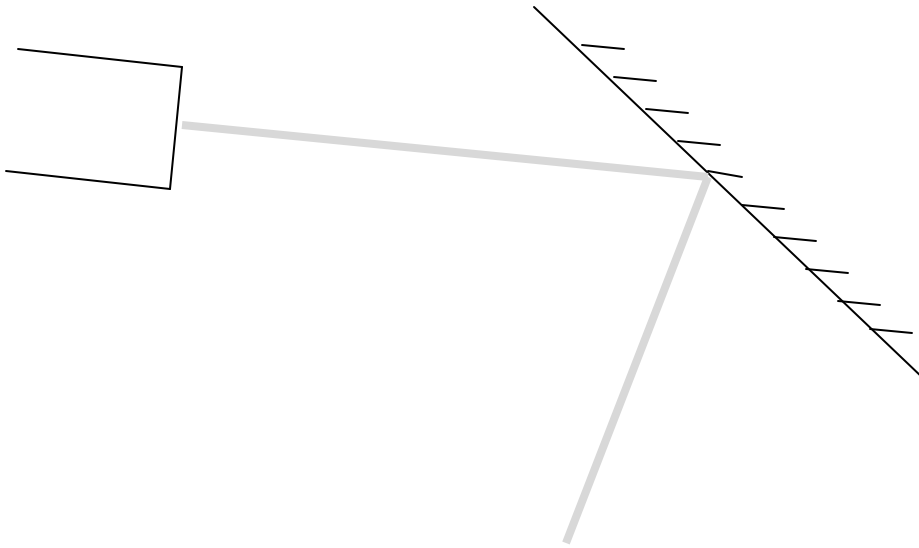
√ 1) Draw ray box as a rectangle.

√ 2) Trace the shape of the mirror and add the lines on the non-reflective side.

_____ 3) Put 3–4 small dots on the incident ray. Put 3-4 small dots on reflective ray.

_____ 4) Connect the dots in a straight line carefully with a ruler.

_____ 5) Add a dashed normal line. It should start at the point of incidence and is perpendicular to the mirror.

On the back of the page, draw a ray diagram of a ray reflecting off a plane mirror. Follow all the rules. Have it check by an adult in the room before you continue.   Checked? _____

Ray Maze - You have 2 plane mirrors. Have the ray box shine along Ray A. Use 1 or 2 mirrors to get this ray to travel along Ray B.

Got it? _____ Draw the ray diagram properly following the rules we learned.

_____ Measure the angle of incidence and angle of reflection for any mirror used.

Mirror #1   angle of incidence = _____

Angle of reflection = _____

Mirror #2   angle of incidence = _____

Angle of reflection = _____

_____ compare your answers to others in your group. Do you see a predictable pattern? If so explain.

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Hand it in for assessment.

Criteria	Level 1	Level 2	Level 3	Level 4
Communication - can draw ray diagrams following rules	Attempted but struggling to follow the rules.	OK. Several significant errors or omissions.	Well. Only a few minor errors or omissions	Very well. No errors.
Inquiry - can measure angles accurately and draw correct conclusion.	Attempted with assistance throughout and/or with major errors.	Able to complete with assistance or with several errors.	Demonstrated with a little assistance or with minor error.	Demonstrated without assistance.

<u>Extra time?</u>   Use the concave mirror and the convex mirror. Shine 3 parallel light rays straight at the mirror. What do the reflected rays do? Sketch (not a proper ray diagram) the reflected rays only and the mirror surface.