**Worksheet 2.1 Investigating Mirror Images**

***Part 1: The Parallax Method***

Using Sheet 1, on the next page, place three upright markers on each of the points indicated. Close one eye and look along the line connecting the markers.

What do you observe as you move your head right and left along the arrows indicated on the sheet?

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How, by moving your head in this manner, can you tell which pen is farthest away?

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How can you tell which pen is closest?

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What would you observe if all three pens were the same distance away from you?

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**Sheet 1:**

Marker 3

Marker 2

Marker 1

***Part 2: Plane Mirrors***

Place a plane mirror on the line indicated on Sheet 2, and an upright marker on the spot labelled ‘Marker’. When you look in the mirror you will see an image of the marker.

1. This image might be located in front of, on, or behind the mirror surface. How might you use the parallax method to determine which of these three possibilities is correct?

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2. Which of these three possibilities do you think is correct – is the image located in front of, on, or behind the mirror? Why?

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3. Investigate whether the image of the pen is located in front of, on, or behind the mirror surface. Do any of the positions (labelled A to E) on Sheet 2 represent the position of the image? Explain how you deduced this.

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4. Did your investigation confirm or falsify the deduction you made in Q2?

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**Sheet 2:**

Mirror Position

Marker

Position C

Position D

Position E

Position B

Position A

***Part 3: Path of light from a mirror***

Position the laser at point P on Sheet 3. Angle the laser so that light travels along one of the arrows towards the mirror. You will see that the light is reflected at some angle from the mirror surface.

1. On the sheet, draw a line indicating the direction of the reflected light for each of the initial directions shown.

2. Extend each line you have drawn backwards so that it passes through the mirror. What do you notice about these lines?

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3. On the basis of your diagram, explain why the image formed in a plane mirror appears as though it comes from behind the mirror.

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**Sheet 3:**

Mirror Position

P