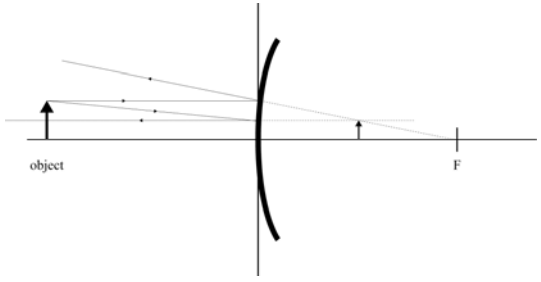
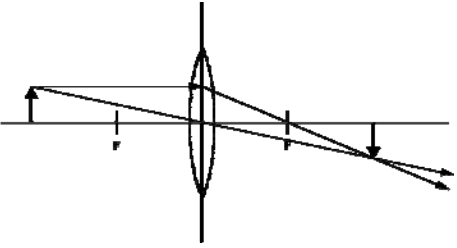
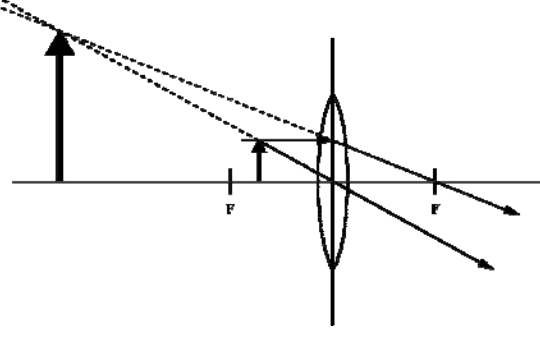
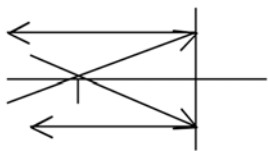
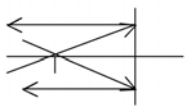
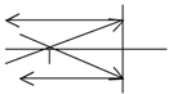


**Assessment Schedule – 2009****Science: Use physics concepts and principles to describe the behaviour of light (90768)****Evidence Statement**

Q	Evidence	Achievement	Achievement with Merit	Achievement with Excellence
ONE (a) + (b)	 <p>Image will be always be upright, virtual and DIMINISHED. Because the image is always inside the focal length, the image is diminished. It will appear further away than where the object actually is.</p>	<p>Correct ray diagram OR image described correctly:</p> <ul style="list-style-type: none"> <li>Image described with TWO characteristics correct, eg:             <ul style="list-style-type: none"> <li>upright</li> <li>virtual</li> <li>diminished.</li> </ul> </li> <li>TWO rays with arrows drawn correctly to give correct location of image. <b>(a)</b></li> </ul>	<p>Image described correctly. OR correct ray diagram AND/ OR Image (the other car) is inside the long focal length of the mirror. AND/ OR Image will always be upright, virtual and diminished. AND/ OR Diminished image means you think the object is further away than it is.</p> <p>TWO points linked. <b>(m)</b></p>	
(c)	<p>A convex mirror gives a wider field of view behind the car compared to a plane mirror.</p> <p>A convex mirror produces a virtual, upright and diminished image, which means a relatively close and large object can be viewed in a relatively small mirror.</p> <p>A plane mirror produces a laterally inverted, upright, virtual and same sized image. As the image is the same size, you will not see a whole vehicle behind you if it is following relatively closely.</p>	<p>Describes a characteristic of a plane mirror and a convex mirror, eg:</p> <p>Plane mirror</p> <ul style="list-style-type: none"> <li>virtual</li> <li>upright</li> <li>same sized</li> <li>laterally inverted</li> </ul> <p>Convex mirror</p> <ul style="list-style-type: none"> <li>virtual</li> <li>upright</li> <li>diminished</li> <li>gives wide field of view behind car. <b>(a)</b></li> </ul>	<p>Relates the characteristics of one type of mirror to its suitability for use as a car mirror. <b>(m)</b></p>	<p>Discusses the characteristics of both types of mirrors and relates the diminished upright nature, with a wide field of view being the reason a convex mirror is used instead of a plane mirror in car mirrors which doesn't give a diminished image and hence a smaller field of view. <b>(e)</b></p>
Question sufficiency		$2 \times a = A$	$a + m = M$	$a + e = E$

<p>TWO (a) and (b)</p>	 <p>Image is real, inverted, 2 cm high (same size as object) and 10 cm behind the lens. To act as a magnifying glass, the object must be inside the focal point. The image will then be enlarged and upright. Outside F, the image will always be inverted, even though it may be magnified.</p> 	<p>TWO characteristics described (or illustrated with in a correct ray diagram) correctly Image will be:</p> <ul style="list-style-type: none"> <li>• real</li> <li>• inverted</li> <li>• 2 cm high OR same size as object</li> <li>• same distance behind the lens (10 cm).</li> </ul>	<p>The image needs to be larger than the object in order for lens to act as a magnifying glass. AND / OR In order to act as a magnifying glass the object must be inside the focal point. AND / OR Explains image that could enlarge an object, eg:</p> <ul style="list-style-type: none"> <li>- real</li> <li>- inverted</li> <li>- enlarged.</li> </ul> <p>(TWO characteristics.)</p> <p>TWO points linked.</p>	<p>Second ray diagram correct to show arrangement that could act as magnifying glass (object inside focal point). AND / OR The image needs to be larger than the object in order for lens to act as a magnifying glass. AND / OR In order to act as a magnifying glass the object must be inside the focal point. AND / OR The image will then be enlarged and upright.</p> <p>THREE points linked.</p>
		A	M	E

THREE (a)	<p>Upside down and back to front at the focus because a concave mirror inverts image laterally AND turns it upside down AND at the focus so all light rays through the gobo are reflected parallel to achieve maximum light and even coverage.</p> <p>May use ray diagram:</p> 	<p>Globo placed upside down so that image projected onto screen right way up OR back to front at the focal point to make image right way around</p> <p>OR globo placed at focal point so that all light rays are reflected parallel onto screen</p> <p>May use ray diagram.</p>  <p>(a)</p>	<p>Upside down at focal point because a concave mirror turns image upside down so image becomes upright AND / OR back to front at the focal point because a concave mirror laterally inverts image so image is right way around (despite fact image symmetrical) AND / OR at the focal point so all light rays through the gobo are reflected parallel to achieve maximum light and even coverage.</p> <p>May use ray diagram:</p>  <p>(m)</p>	
(b)	<p>Magenta absorbs all colours except red and blue, which are transmitted. Cyan absorbs all colours except blue and green, which are transmitted (not reflected).</p> <p>The magenta would transmit red and blue, but the following cyan would absorb the red and only allow the blue through. The resulting colour of light would be blue.</p>	<p>Magenta absorbs all colours except red and blue, which are transmitted.</p> <p>OR</p> <p>Cyan absorbs all colours except blue and green, which are transmitted.</p> <p>OR</p> <p>The magenta would transmit red and blue, but the following cyan would only allow the blue through.</p> <p>OR</p> <p>A blue colour would be seen.</p> <p>(a)</p>	<p>Magenta absorbs all colours except red and blue, which are transmitted.</p> <p>OR</p> <p>Cyan absorbs all colours except blue and green, which are transmitted.</p> <p>AND</p> <p>The magenta would transmit red and blue, but the following cyan would only allow the blue through.</p> <p>The resulting colour of light would be blue.</p> <p>(m)</p>	<p>Magenta absorbs all colours except red and blue, which are transmitted.</p> <p>AND</p> <p>Cyan absorbs all colours except blue and green, which are transmitted.</p> <p>AND</p> <p>The magenta would transmit red and blue, but the following cyan would absorb the red and only allow the blue through. The resulting colour of light would be blue. (e)</p>
Question sufficiency		$1 \times a = A$	$1 \times m = M$	$1 \times e = E$

**Judgement Statement**

<b>Achievement</b>	<b>Achievement with Merit</b>	<b>Achievement with Excellence</b>
2 <b>A</b> or above	2 <b>M</b> or above	2 <b>E</b>

Lower case **a**, **m**, **e** may be used throughout the paper to indicate contributing evidence for overall grades for questions.

Only the circled upper case **A**, **M** and **E** grades shown at the end of each full question are used to make the final judgement.