UK NC, iLS, CEE

8Jb DRAWINGS AND CONVENTIONS

1 Why do we need to use ray boxes and paper when we investigate light?

1 A ray box makes it easier to investigate the behaviour of light. The box produces a narrow beam or beams of light that can be marked on paper. This makes it easier follow and measure the paths of light rays.

2 Suggest why we can only see the rays from a ray box where they shine on the paper.

2 Most of the light in the ray is going along the ray and you only see this if you look directly into the ray box (which is not good for your eyes!). Some of the light hits the paper and is reflected: you see the part of this light that is reflected towards your eyes.

3 Table E shows some results from the investigation described in the Method above. Write a conclusion for the investigation.

E

Angle of incidence	Angle of reflection
21°	20°
30°	30°
44°	45°
55°	55°
64°	65°
72°	72°

3 The angle of reflection is the same/almost the same as the angle of incidence. Students may suggest that more accurate results would be needed to confirm this conclusion.

4 Why is it important to use agreed symbols and conventions in science?

4 so that all scientists can understand diagrams

5 A curved piece of glass called a lens is fitted to the ray box to make the ray of light narrower and brighter. Explain how this can help to give more accurate results in this investigation.

5 If the ray is narrower it is easier to mark the middle and more precise measurements can be obtained. A brighter beam is easier to see, which may also help accuracy when looking at the beam a long way from the source.