Shadow detectives | pupil worksheet

Name/code: _____ Date: _____ Six original questions | 12 marks

Use words or labelled sketches. No numeric measurement is needed. Q1-Q2: recall; Q3-Q4: application; Q5-Q6: reasoning.

Q1 | Recall | 2 marks

Name the three things used to observe the card shadow in our setup.

Answer: _____

_____

Q2 | Recall | 2 marks

What makes the dark patch behind an opaque card?

Answer: _____

_____

Q3 | Application | 2 marks

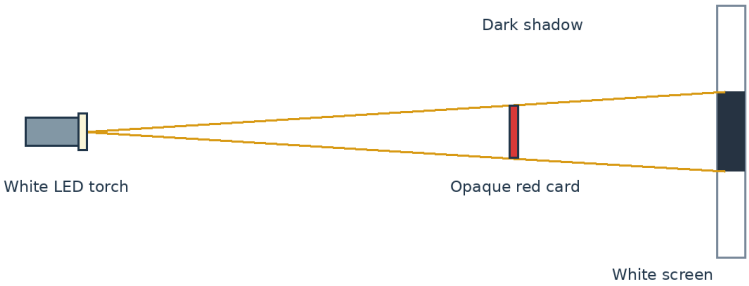
An identical blue opaque card replaces a red one. White torch light and every position stay fixed. What happens to the shadow colour? Give a reason.

Answer: _____

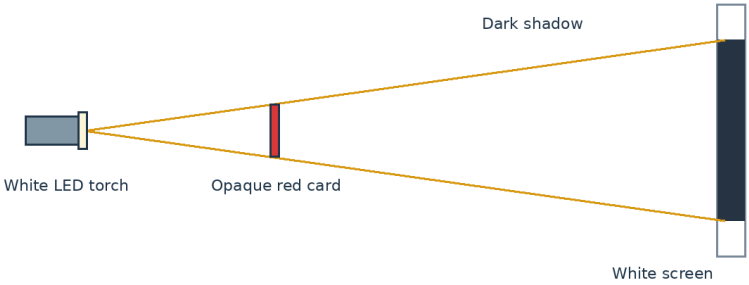
_____

Shadow detectives | pupil worksheet | continued

A | Card nearer the screen



B | Same card nearer the torch



Ideal small-source rays; illustration, not measurement. Torch and screen fixed.

Q4 | Application | 2 marks

In the ideal comparison picture, A has the card nearer the screen; B has it nearer the torch. Torch and screen stay fixed. Which has the larger shadow? Explain without measuring.

Answer: _____

Q5 | Reasoning | 2 marks

Someone says: "A transparent object can never make a shadow." Is that always correct? Explain using the source brief.

Answer: _____

Q6 | Reasoning | 2 marks

Design a fair test of whether an opaque card's colour changes the shadow colour. Say what you change, what you keep fixed and what you observe.

Answer: _____