



"Lighting System" Assessment

My initials:		
FIRST	MIDDLE	LAST
(A)	(A)	(A)
(B)	(B)	(B)
(C)	(C)	(C)
(D)	(D)	(D)
(E)	(E)	(E)
(F)	(F)	(F)
(G)	(G)	(G)
(H)	(H)	(H)
(I)	(I)	(I)
(J)	(J)	(J)
(K)	(K)	(K)
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(Q)	(Q)	(Q)
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(V)	(V)	(V)
(W)	(W)	(W)
(X)	(X)	(X)
(Y)	(Y)	(Y)
(Z)	(Z)	(Z)

I am a:

Girl

Boy

I was born in:

MONTH BORN
<input type="radio"/> January
<input type="radio"/> February
<input type="radio"/> March
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Today the date is:

MONTH	DAY	YEAR
<input type="radio"/> January		<input type="radio"/> 2010
<input type="radio"/> February		<input type="radio"/> 2011
<input type="radio"/> March	(0)	<input type="radio"/> 2012
<input type="radio"/> April	(1)	<input type="radio"/> 2013
<input type="radio"/> May	(2)	<input type="radio"/> 2014
<input type="radio"/> June	(3)	<input type="radio"/> 2015
<input type="radio"/> July		<input type="radio"/> 2016
<input type="radio"/> August	(4)	<input type="radio"/> 2017
<input type="radio"/> September	(5)	<input type="radio"/> 2018
<input type="radio"/> October	(6)	<input type="radio"/> 2019
<input type="radio"/> November	(7)	<input type="radio"/> 2020
<input type="radio"/> December	(8)	
	(9)	

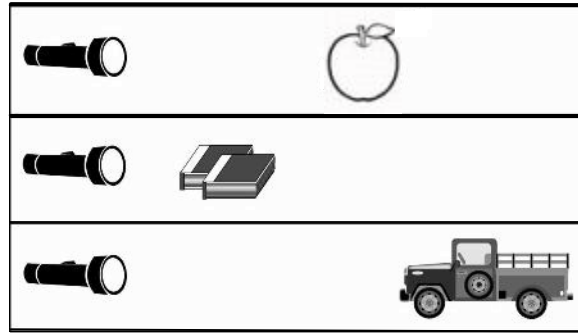
Marking Instructions

- Use a No. 2 pencil or a blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the response completely.
- Make no stray marks on this form.

CORRECT: ●

INCORRECT: ☒ ☓ ☉ ☪

Use the picture below to answer questions 1 and 2.



1. On which of the objects will the light be **BRIGHTEST**?

- (A) The truck ● The books
- (B) The apple (D) They will all be the same

2. On which of the objects will the light be **LEAST BRIGHT**?

- The truck (C) The books
- (B) The apple (D) They will all be the same

3. In which diagram will light from the flashlight be **BRIGHTEST** in the corner marked by the X?

(A)	(C)
(B)	(D) It is not possible to light the corner marked by the X.

PLEASE DO NOT WRITE IN THIS AREA



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53 4. A student is trying to design a way to use a spotlight to light up two paintings. What should the student think about?

- 52
- 51
- 50
- 49 (A) The size of the paintings
- 48
- 47 (B) The angle between the spotlight and the paintings
- 46
- 45 (C) How far from the paintings she should put the spotlight
- 44
- 43
- 42 (D) All of the above
- 41
- 40

39 5. At work an optical engineer is MOST LIKELY to:

- 38
- 37 (A) Construct bridges.
- 36
- 35 (B) Improve lenses for a telescope.
- 34
- 33 (C) Repair TV screens when they break.
- 32
- 31 (D) Design an obstacle course for race cars.
- 30
- 29

28 6. A flashlight is turned on. What happens?

- 27
- 26 (A) Light stays in the flashlight.
- 25
- 24 (B) Light moves from the flashlight and goes through any objects in its path.
- 23
- 22
- 21 (C) Light moves from the flashlight in straight lines until it hits another object.
- 20
- 19
- 18 (D) Light does not move from the flashlight unless there is something for it to hit.
- 17
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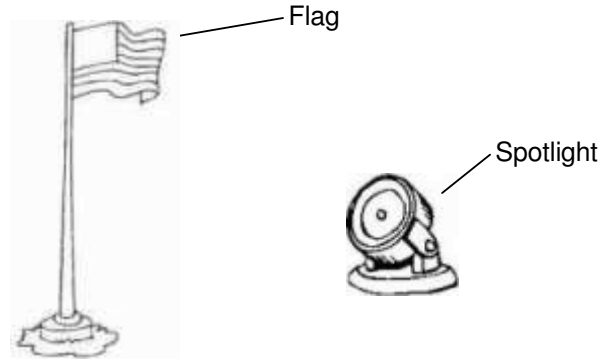
14 7. Which of the following objects reflects light?

- 13
- 12 (A) Blue teapot (C) Black wall
- 11
- 10 (B) White wall (D) All of the above
- 9
- 8

7 8. At work, an optical engineer might:

- 6
- 5 (A) Design tunnels. (C) Install wiring in houses.
- 4
- 3 (B) Improve cameras. (D) Fix headlights on trucks.
- 2
- 1

9. A student is trying to use a spotlight to light up a flag. The light is not bright enough. What can she do to make the light on the flag brighter?



- (A) Move the spotlight closer to the flag.
- (B) Move the spotlight to the left of the flag.
- (C) Move the spotlight farther away from the flag.
- (D) You can't make the light on the flag any brighter.

10. Which of the following would an optical engineer MOST LIKELY work on?

- (A) Something that helps you see things better
- (B) Something that helps you go places quickly
- (C) Something that makes computers run faster
- (D) An optical engineer would not work on any of these things

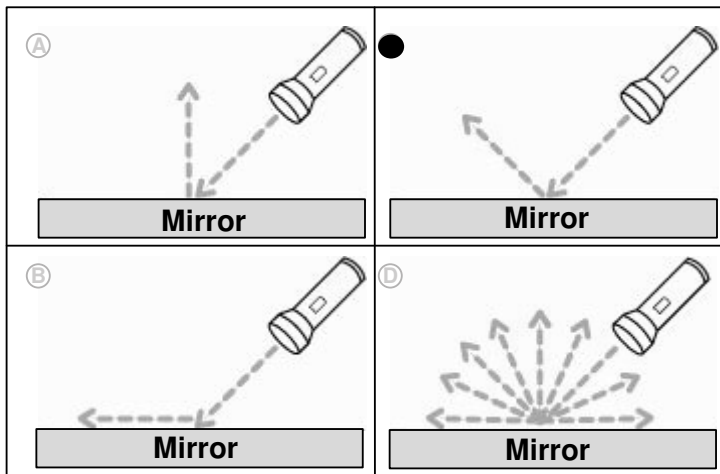
11. Which of the following will transmit light?

- (A) White wall (C) Aluminum foil
- (B) Wood block (D) Glass window

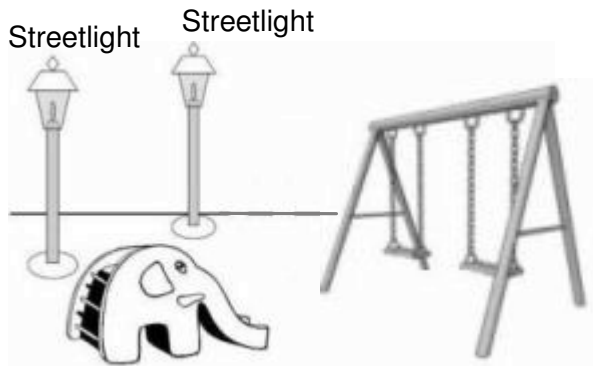
12. What would be BEST to use to get light to shine around a corner?

- (A) Black paper (B) White paper
- (C) Aluminum foil (D) Grey plastic bag

13. Which picture BEST shows what happens to light when it shines on a mirror?



14. Someone is improving a lighting system for a playground. If he makes the streetlights taller, what will happen to the light on the playground?



- A The streetlights will get brighter.
- B The light on the playground will be less bright.
- C Less of the playground will be covered with light.
- D Nothing will happen to the light on the playground.

15. The picture below shows a girl standing in the sunlight. Which of the following best explains why she creates a shadow?



- A She bends light from the Sun.
- B She absorbs light from the Sun.
- C She reflects light onto the ground.
- D She changes the color of the sunlight hitting the ground.

16. What happens if you shine light on a window?

- A All of the light goes through the window.
- B All of the light bounces off of the window.
- C Light fills the air on one side of the window.
- D Some of the light goes through the window and some bounces off of the window.

17. What happens when someone turns on a light bulb in a room?

- A Light stays just around the bulb.
- B Light fills all parts of the room equally.
- C Light travels in straight lines from the light bulb out in all directions.
- D Light travels around things in the room to shine on all parts of the room.

18. What might an optical engineer think about for his or her job?

- A Where to put traffic lights
- B Where lightning comes from
- C How to package eyeglasses
- D How light gets from one place to another

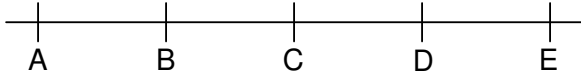
19. What is an optical engineer LEAST LIKELY to work on for her job?

- A Video cameras
- B Lights on vehicles
- C CD and DVD players
- D An optical engineer would not work on any of these things

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53 Use the diagram below to answer question 20 and 21.

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20. Where should you hold a flashlight so that it shines on the mirror and then on Position A?

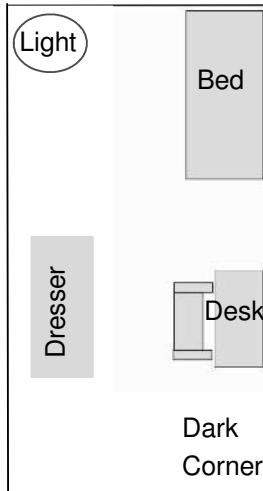
- (A) Position B
- (B) Position C
- (C) Position D
- (D) Position E

21. If you shine a flashlight into the mirror from Position D, where would the reflected light appear?

- (A) Position A
- (B) Position B
- (C) Position C
- (D) Position E

22. A student is designing a way to light a dark corner of her bedroom. The light is on the opposite side of the room from the dark corner. What could she do to light up the dark corner?

- (A) Cover the walls with shiny wallpaper.
- (B) Move the light closer to the middle of the room.
- (C) Paint the walls white to reflect more light to all parts of the room.
- (D) All of these ideas would work.



23. If an object reflects light:

- (A) It must be a mirror.
- (B) It can NOT refract light.
- (C) It must be a solid object.
- (D) It must also absorb light.

24. Which of these items will absorb light?

- (A) A mirror
- (B) A clear block of plastic
- (C) A sheet of metal painted black
- (D) All of these items absorb some light

25. You use some mirrors and a flashlight to light up a painting in a room. Which of these set-ups will make the light on the painting the brightest?

(A)

(B)

(C)

(D) The light on the painting will be the same brightness in each of these set-ups.

Question 15 adapted from MCAS, Gr 5, 2008.

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