

CT Science Standard 5.1.B – Light

Light is a form of energy that travels in a straight line and can be reflected by a mirror, refracted by a lens, or absorbed by objects.

Trail Guide Lighting System B: 5.1 Light

Visit **All Galleries**

Science Center Lighting System

Exhibit designers put a lot of thought and consideration into where they hang lights and how they illuminate the galleries. As you explore the galleries, write down what you notice and wonder about the way designers chose to position lights.

What do you notice about the relationship between the way the lighting fixtures are aimed and where the light falls?

Talk with a partner and then write your noticings and wonderings down in your science notebook.

Teacher Notes:

GLE 1. Provide evidence that light travels in straight lines away from a source in all directions.

Exhibit designers thoughtfully cast lights to illuminate certain areas and exhibits. Because light travels in a straight line, lights were placed directly above exhibits and pointed straight down, or to the side of an area and angled towards that area.

Extension:

GLE 7. Determine whether a material is opaque, transparent or translucent based on how light passes through it.

*Opaque items block light from traveling through them, so they cast shadows. Some students **may** notice that certain exhibits purposefully cast shadows because they require lower light conditions (Choices on 5th Floor, or Planet Earth & River of Yesterday on 6th floor)*

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Trail Guide 5.1 Light

Visit the **Exploring Space Gallery** on the 5th Floor

**Moon Projection Globe –
Watch “The Face On the Moon”**

Does the moon produce its own light, or does the light have another source? What could the other source be? Explain how this works using a sketch.

Share your thoughts with a partner and use your science notebook to record your noticings and wonderings.

Teachers Notes:

The moon is, of course, not producing its own light. The surface of the moon is reflecting light from the sun, if it didn't we would not be able to see it.

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**Moon Projection Globe –
Watch “The Face On the Moon”**

What do you notice about the moon’s surface?

Can you explain the light and dark regions?

Share your thoughts with a partner and use your science notebook to record your noticing and wonderings.

Teacher Notes:

The reason the moon has bright (terra) and dark (maria) regions is because of different geology. The maria are ancient lava flows made of basalt that absorb more light than they reflect. The terra is composed of Anorthosite which is a more reflective rock.

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Visit the **Exploring Space Gallery** on the 5th Floor

Space Suit

Look at the different parts of the space suit, particularly the helmet.

Is there anything you notice about the visor that would make the suit better for an astronaut to wear in space?

Discuss with a partner.

Teachers Notes:

GLE 5. Contrast the way light is reflected by smooth, shiny objects (e.g., mirror or pool of water) and how it is reflected by other objects.

The space suits visor is extremely reflective. This is very beneficial as it reflects the light coming from the sun and reflecting off the surface. This protects an astronaut's eyes from harm.

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Visit the **Exploring Space Gallery** on the 5th Floor

Projected Images

Look at the different still images projected on the screens mounted in the Exploring Space Gallery.

What do you notice about the way the projectors are mounted? Why do you think the projectors are positioned where they are?

How do you think the light travels from the projectors?

Share your thoughts with a partner and use your science notebook to record your noticings and wonderings.

Teachers Notes:

GLE 1. Provide evidence that light travels in straight lines away from a source in all directions.

The projectors are mounted on angles and are positioned so that they are each aimed at the screen on which they project an image. This implies that the light from the projector travels in a straight line from the projector to the screen. If light did not travel this way, it would be impossible to display an image using a projector.

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*Visit the **KidSpace Gallery** on the Plaza Level

Walter Wick Exhibits (Mirror Maze, In Suspense,)

Look at Walter Wick's **Mirror Maze**. Carefully observe the photograph of hundreds of toy animals. Only 15 of these figurines are real. Why does it appear there are so many?

Now, look at Walter Wick's **In Suspense**. How does Walter Wick make half objects appear like whole objects? What is going on in this photograph?

Write down your noticings and wonderings about Walter Wick's exhibits in your science notebook.

Teachers Notes:

GLE 5. Contrast the way light is reflected by smooth, shiny objects (e.g., mirror or pool of water) and how it is reflected by other objects.

*Walter Wick used three mirrors to create the mirror maze and through reflection was able to make it appear that many objects were present in **Mirror Maze**. In **In Suspense** he was able to use reflection again to make objects appear whole*

**Please note that availability to KidSpace is limited and based on capacity and other audience considerations.*

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*Visit the **KidSpace Gallery** on the Plaza Level

Walter Wick Exhibits (Mirror Maze, In Suspense,)

Use the blocks and mirrors to recreate scenarios similar to the ones in **Mirror Maze** and **In Suspense**. What do you notice and wonder?

Make sure you talk with a partner and record your noticings and wonderings about Walter Wick's exhibits in your science notebook.

Teachers Note:

The blocks and mirrors should allow students to recreate similar scenarios. Make sure to consult the explanations attached to the exhibits as well.

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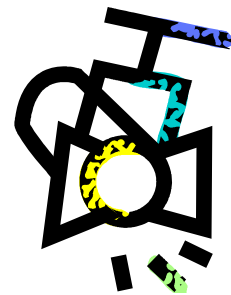
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Science Center Lighting System

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How does the light travel from the lighting fixtures hung from the ceiling?

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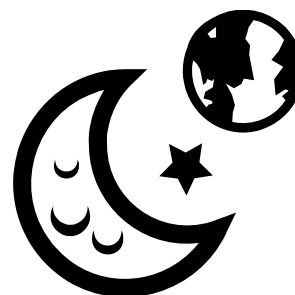
Visit the **Exploring Space Gallery** on the 5th Floor

Moon Projection Globe

Watch The Face on the Moon

Does the Moon produce its own light, or does the light have another source? What could the other source be? Explain how this works using a sketch.

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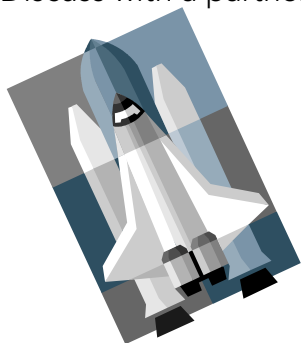
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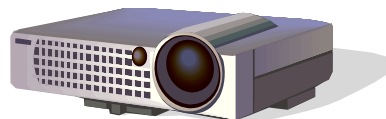
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