



# LIGHT

Vocab Study Pack  
by Emily Brown

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12 Activities to Reinforce  
Key Terms for Light/Optics

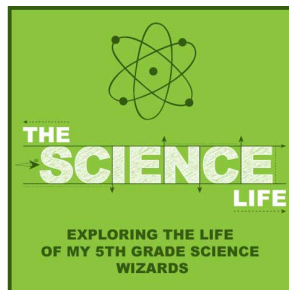
# thank you

Thank you so much for your purchase! I hope that you find my Light Vocab Activity pack as useful as I do in my classroom! This activity pack is meant to accompany the lessons that you teach on Light/Optics. For me and my students, having these extra reinforcers was really helpful in identifying and remembering key terms throughout this unit of study.

The Table of Contents on the next page outlines each activity that is included in this pack. I have included directions/use suggestions for each activity. I have also included a list of the vocabulary words with their definitions so that you know exactly what words are covered in these activities.

I would appreciate any feedback that you have to offer! I hope you enjoy these activities and I hope they help your students retain the definitions for these important vocabulary words!

Please visit my blog at **[thesciencelife.blogspot.com](http://thesciencelife.blogspot.com)**  
for a peek in my classroom, freebies, and lots more activities!



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# Vocab List



**Energy** – the ability to do work

**Radiant Energy** – Energy that is transmitted in the form of electromagnetic radiation. It's energy that exists in the absence of matter. Includes visible light, x-rays, gamma rays, and radio waves.

**Luminous/non-luminous** – a luminous object is something that can produce its own light (the sun). A non-luminous object is something that cannot produce its own light, but can reflect light.

**Transparent** – objects that light can transmit through

**Translucent** – objects that absorb some light and transmit some light

**Opaque** – objects that block and reflect light. No light can travel through an opaque object.

**Reflection** (reflect) – the “throwing back” or “bouncing” of light.

**Absorption** (absorb) – the “soaking up” of light.

**Transmission** (transmit) – to go (or travel) through.

**Refraction** – the bending of light

**Visible spectrum** – the distribution of colors produced when white light goes through a prism. This includes the colors that we can see: ROY G BIV

**Convex mirror** – a mirror that is bent outward. Light is directed outward (diverges) when reflected off of a convex mirror. Objects reflected from a convex mirror look very small and you can see more objects in a convex mirror. Uses – security mirrors in stores, side mirrors on cars (to be able to see more, but they look smaller, so they might appear like they are farther away from you than they really are. That's why there is a warning message on them!)


**Concave mirror** – a mirror that is bent inward. Light is directed inward (converges) when reflected off of a concave mirror. Light rays from a concave mirror cross over each other, to form a focal point. If you are behind the focal point when looking into a concave mirror, your image will appear upside down. If you are in front of the focal point, objects reflected will look very large and close up. Uses – makeup mirrors.

**Plane mirror** – a flat mirror

**Convex lens** – a lens that is bent outward. Light is refracted and converges (comes together) when it exits a convex lens. Uses – to correct farsighted vision. Magnifying glasses are also convex.

**Concave lens** – a lens that is bent inward. Light is refracted and diverges (spreads out) when it exits a concave lens. Uses – to correct nearsighted vision.

**Nearsighted** – This is when the images are focused in front of the retina in the eye. People with nearsighted vision can see things close up, but have a hard time seeing things farther away.



**Farsighted** – This is when the images are focused behind the retina in the eye. People with farsighted vision can see things far away, but have a hard time seeing things close up.

**Diverge** – to spread out

**Converge** – to come together

**White Light** – made up of all of the colors of a rainbow. It's the kind of light that we see from the sun and from lamp lights.

**ROY G BIV** – The colors that we see in a visible spectrum (red, orange, yellow, green, blue, indigo, violet)


**Retina** – part of the eye that acts like a screen and responds to light

**Pupil** – Black hole in the center of the eye where light passes through

**Iris** – this is the circular band of muscles surrounding the pupil and controls the movement of the pupil. It's also what gives the eyes their color. (It's the colored part of the eye)

**Lens** – the human eye has a convex lens covering it. The lens bends the light that passes through the eye. To focus light, the human lens can actually change shape by bending! The lens is what causes the light that enters the eye to converge, or come together, inside of the eye. The human lens actually causes the images in the eye to be upside down (since convex lenses bend light inward – similar to what a CONCAVE mirror does – it's the opposite).

**Optic nerve** – this is the nerve that sends images to the brain. The optic nerve takes the images that are produced upside down and flips them upright so that we can see things the "right" way!



# Vocab Map Booklet



Vocabulary Maps are very helpful for students to work with new science vocabulary words. Instead of just writing a simple definition, vocab maps have students interact with the new words in depth by asking for an example, a drawing (if applicable), and in this case, a helpful way for them to remember the meaning of the word.

Print as many copies as you need for each booklet. {This will all depend upon which vocabulary words you are needing to cover.} I printed my pages front and back to save paper and I had the students cut their own pages. Just have them cut right down the middle on the dotted line. Then once all of the pages are cut, staple the booklets down the left hand side. {I left a little bit of a larger space on the left side so that two staples can be placed vertically without affecting the print.} Students can fill out the packet as you introduce new terms.

**Tip:** The “helpful hint” square was intended for students to write small hints that would help them remember what each word meant. For example, for the word “diverge”, we talked about how this word began with the same word that “divide” begins with. Divide and diverge have similar meanings, so this little hint helped them to remember the meaning of the word diverge. Students got very creative with these little hints!



# LIGHT

## Vocab Map Packet

Name: \_\_\_\_\_



Definition	Example
Drawing/Picture	Helpful Hint

Definition		Example
Drawing/Picture		Helpful Hint



Definition		Example
Drawing/Picture		Helpful Hint



# Interactive Diagrams



These interactive diagrams were created so that students had more practice with the intensive - and sometimes confusing - vocabulary words throughout this unit. I created these diagrams so that students could be actively engaged with how light interacts with certain objects, how we perceive color, how mirrors work, how lenses work, how the eye works, and which lenses correct common eye problems. The directions for each respective interactive diagram is on each page. Answer keys follow.

**Suggested Use:** I used these diagrams as mini assessments throughout the unit. I would introduce a new concept and the following day, I would give them the diagram to complete upon coming into the classroom, before we started on a new concept. These helped me to see what we needed to review and which students were struggling with certain concepts.

Name: \_\_\_\_\_

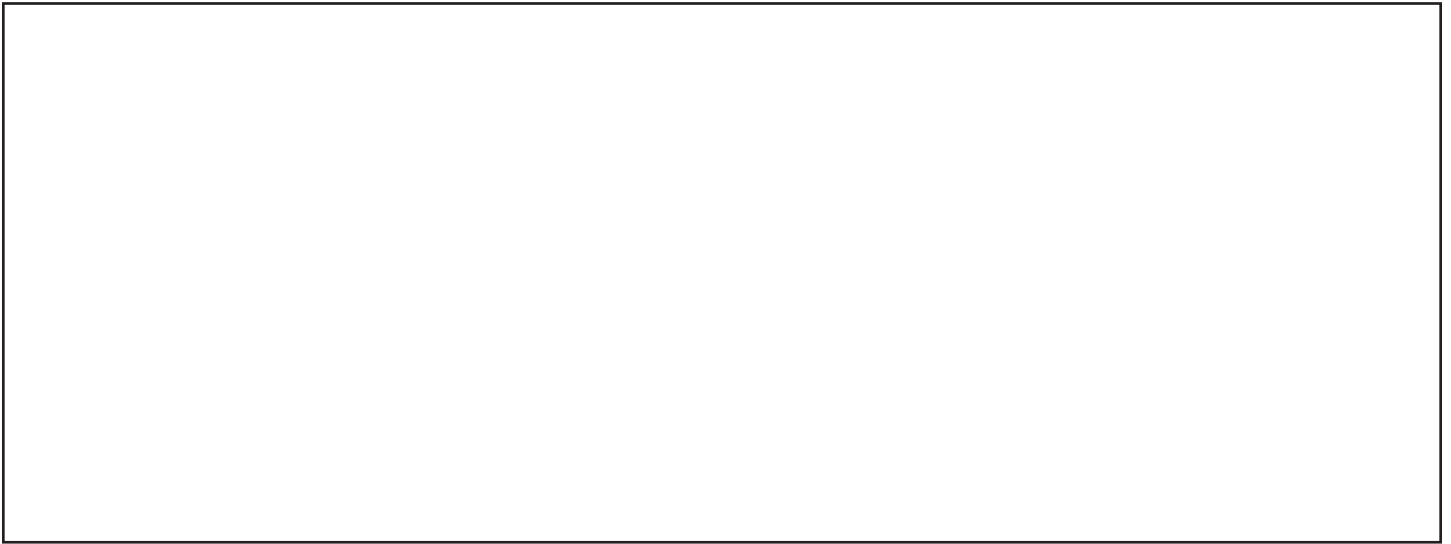
# Interactive *diagram*

**Blocking the Light:** How does light interact with different materials?

## **Transparent**

Brief definition in your own words: \_\_\_\_\_

Draw (and label) a few examples of transparent objects. Draw arrows to show how light behaves when it reaches a transparent object. {The arrows will represent light.}



## **Translucent**

Brief definition in your own words: \_\_\_\_\_

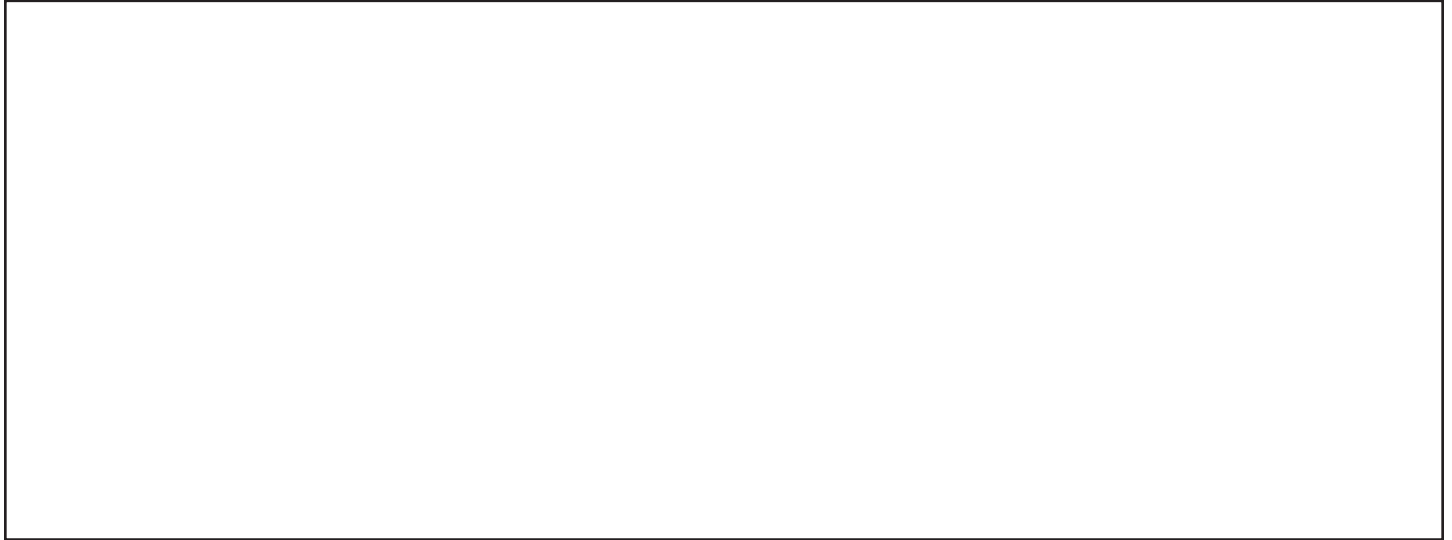
Draw (and label) a few examples of translucent objects. Draw arrows to show how light behaves when it reaches a translucent object. {The arrows will represent light.}



## Opaque

Brief definition in your own words: \_\_\_\_\_

Draw (and label) a few examples of opaque objects. Draw arrows to show how light behaves when it reaches an opaque object. {The arrows will represent light.}



**Answer the following questions about transparent, translucent, and opaque objects and how they interact with light. Use either the term translucent, transparent, or opaque to answer each question.**

Which type of object is most likely to **absorb** light? \_\_\_\_\_

Which type of object is most likely to **transmit** light? \_\_\_\_\_

Which type of object is most likely to **reflect** light? \_\_\_\_\_

**Answer the following questions about transparent, translucent, and opaque objects and how they interact with light. Use either the term transmitted, reflected, or absorbed to answer each question.**

When light hits a transparent object, most of the light is \_\_\_\_\_.

When light hits a translucent object, most of the light is \_\_\_\_\_.

When light hits an opaque object, most of the light is \_\_\_\_\_.

Name: ANSWER KEY

# Interactive *diagram*

**Blocking the Light:** How does light interact with different materials?

## Transparent

Brief definition in your own words: Transparent objects transmit light, or allow light to travel through them completely. You can completely see through these objects.

Draw (and label) a few examples of transparent objects. Draw arrows to show how light behaves when it reaches a transparent object. {The arrows will represent light.}

{Answers will vary - Students may draw glass, plastic, windows, etc.}

## Translucent

Brief definition in your own words: Transparent objects absorb most light, while transmitting some light. You can partially see through these objects.

Draw (and label) a few examples of translucent objects. Draw arrows to show how light behaves when it reaches a translucent object. {The arrows will represent light.}

{Answers will vary - Students may stained glass, tissue paper, a wax candle, etc.}

## Opaque

Brief definition in your own words: Opaque objects reflect light. You cannot see through these objects at all.

Draw (and label) a few examples of opaque objects. Draw arrows to show how light behaves when it reaches an opaque object. {The arrows will represent light.}

{Answers will vary - Students can draw whatever opaque object they see fit.}

**Answer the following questions about transparent, translucent, and opaque objects and how they interact with light. Use either the term translucent, transparent, or opaque to answer each question.**

Which type of object is most likely to **absorb** light? Translucent

Which type of object is most likely to **transmit** light? Transparent

Which type of object is most likely to **reflect** light? Opaque

**Answer the following questions about transparent, translucent, and opaque objects and how they interact with light. Use either the term transmitted, reflected, or absorbed to answer each question.**

When light hits a transparent object, most of the light is transmitted.

When light hits a translucent object, most of the light is absorbed.

When light hits an opaque object, most of the light is reflected.

Name: \_\_\_\_\_

# Interactive *diagram*

**Refraction:** What is refraction?

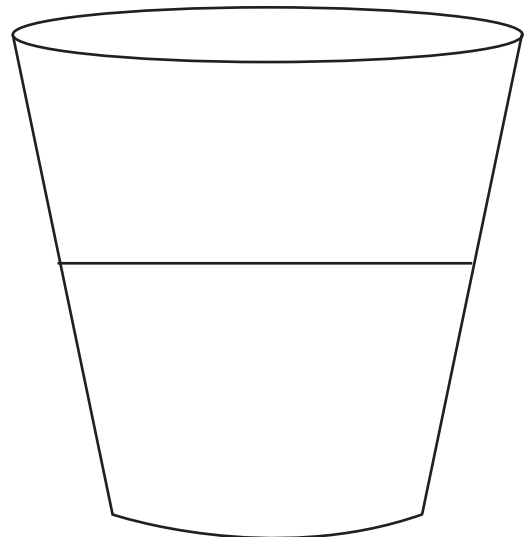
**When light is transmitted through a new material (or a substance), it sometimes refracts. What does refraction mean?**

Brief definition in your own words:

\_\_\_\_\_

\_\_\_\_\_

**Draw how a pencil would look in this cup of water. {The line in the middle of the cup represents water.}**



**Think of other substances or objects that light would refract when traveling through. Where else have you seen refraction?**

In the box below, draw and label your own example of when you might see light refracting.

Name: ANSWER KEY

# Interactive *diagram*

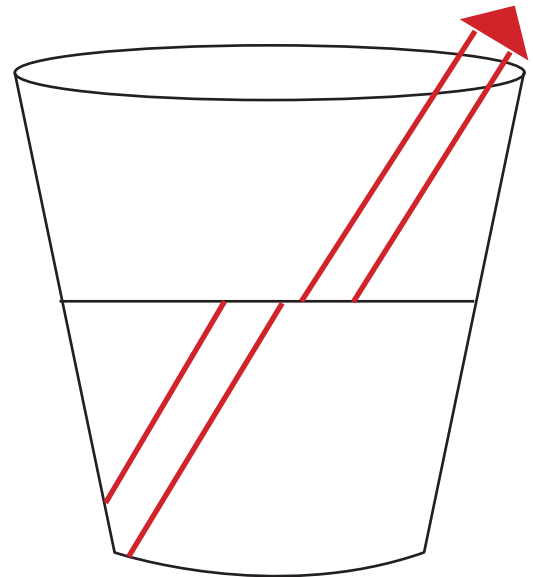
**Refraction:** What is refraction?

**When light is transmitted through a new material (or a substance), it sometimes refracts. What does refraction mean?**

Brief definition in your own words:

Refraction means the bending of light.

**Draw how a pencil would look in this cup of water. {The line in the middle of the cup represents water.}**



**Think of other substances or objects that light would refract when traveling through. Where else have you seen refraction?**

In the box below, draw and label your own example of when you might see light refracting.

**Answers may vary. Examples include at the swimming pool when half of your body is in the pool and the other half is out; when fishing, when wearing sunglasses and looking out of the side of them, or glasses/contacts.**

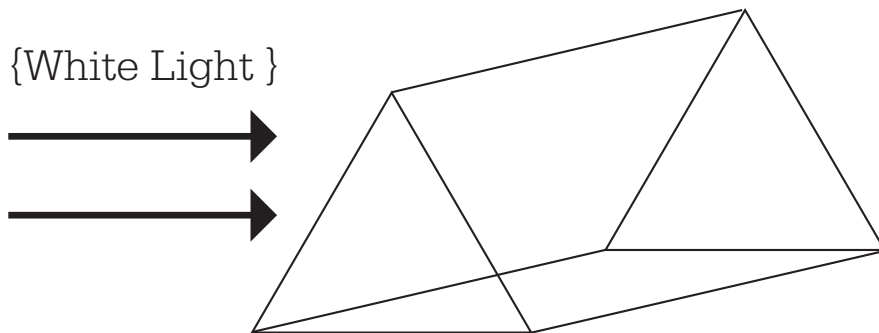
Name: \_\_\_\_\_

# Interactive *diagram*

**Color:** Where does color come from? Why do objects have different colors?

## Prisms and the Visible Spectrum

Using COLORED PENCILS, draw what happens to white light as it travels through a prism.  
{Make sure you put the colors in the correct order!}



## White Light

We learned that white light isn't really white at all. What colors actually make up white light?

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**What's the acronym that helps us remember these colors?**

---

## Seeing Color

Color the car any color that you choose. On the lines below, explain why we see the car in the color that you chose. What happens to white light? Are there any colors absorbed? What color is reflected? Make sure to include all of this information in your explanation.

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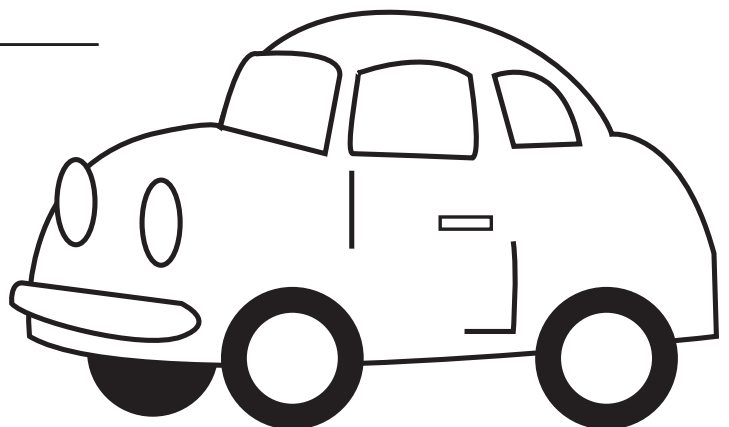
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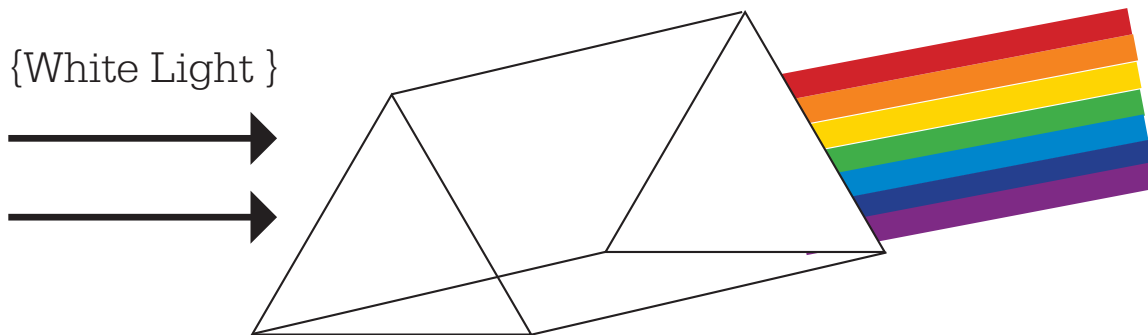
Name: ANSWER KEY

# Interactive *diagram*

**Color:** Where does color come from? Why do objects have different colors?

## Prisms and the Visible Spectrum

Using COLORED PENCILS, draw what happens to white light as it travels through a prism.  
{Make sure you put the colors in the correct order!}



## White Light

We learned that white light isn't really white at all. What colors actually make up white light?

**Red, Orange, Yellow, Green, Blue, Indigo, Violet**

---

**What's the acronym that helps us remember these colors?**

**ROY G BIV**

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## Seeing Color

Color the car any color that you choose. On the lines below, explain why we see the car in the color that you chose. What happens to white light? Are there any colors absorbed? What color is reflected? Make sure to include all of this information in your explanation.

**We see the {whatever color the student has**

---

**chosen to color the car} because white light**

---

**hits the car, and {that color} is reflected**

---

**back into our eyes. All of the other colors**

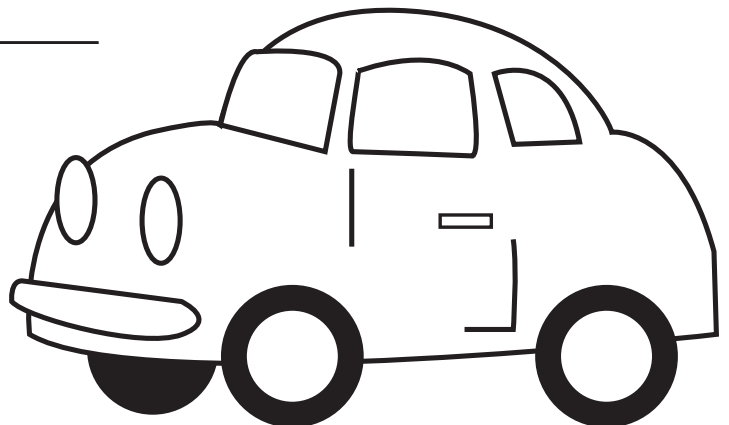
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**that make up white light are**

---

**absorbed when they hit the car.**

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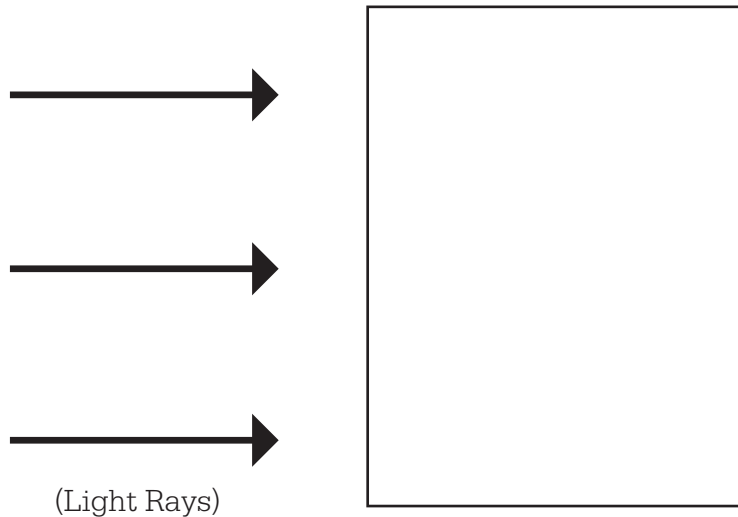
Name: \_\_\_\_\_

# Interactive *diagram*

**Lenses:** What happens to light as it travels through different types of lenses?

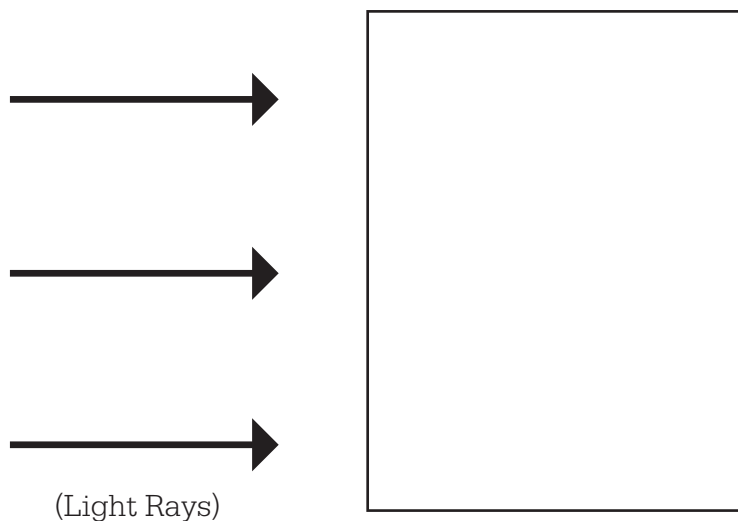
## Convex Lens

Draw a convex lens in the box below. Then, on the outside of the box, draw arrows to represent how light would travel once it leaves the convex lens.

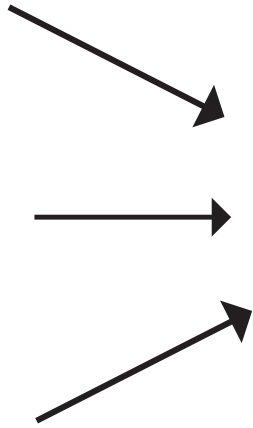


## Concave Lens

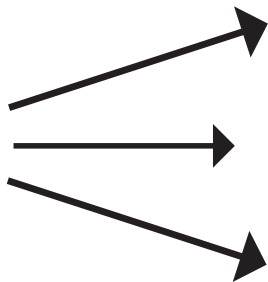
Draw a concave lens in the box below. Then, on the outside of the box, draw arrows to represent how light would travel once it leaves the concave lens.



**Fill in these blanks using the words diverge, converge, convex, and concave. Do not use any word more than once.**



When light \_\_\_\_\_, that means that it comes together. Light that travels through a \_\_\_\_\_ lens does this.



When light \_\_\_\_\_, that means that it spreads apart. Light that travels through a \_\_\_\_\_ lens does this.

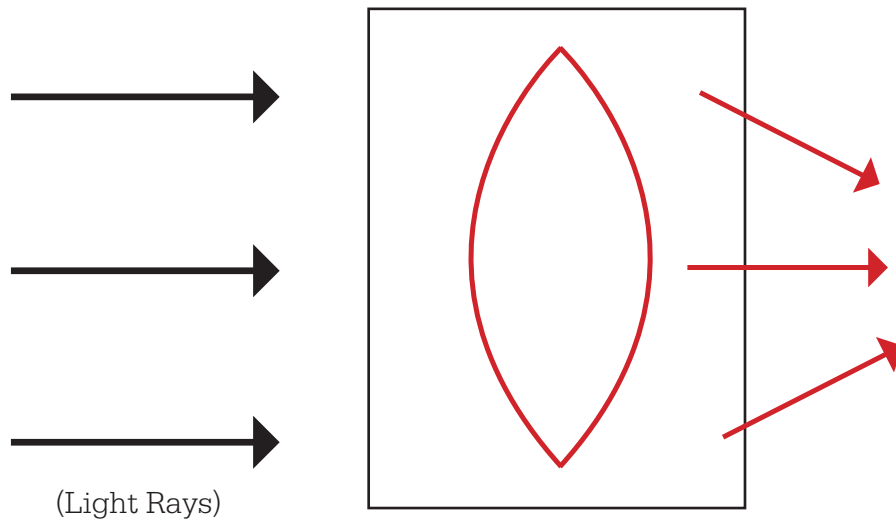
Name: ANSWER KEY

# Interactive *diagram*

**Lenses:** What happens to light as it travels through different types of lenses?

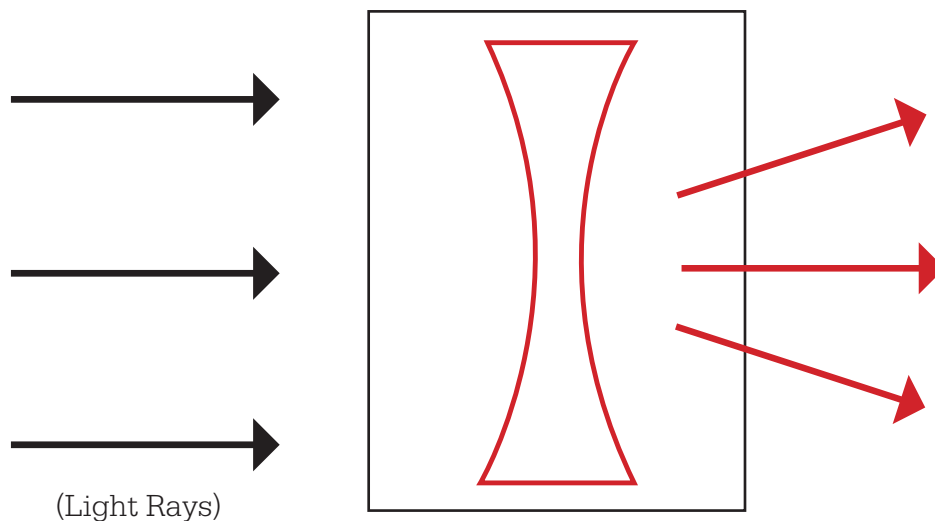
## Convex Lens

Draw a convex lens in the box below. Then, on the outside of the box, draw arrows to represent how light would travel once it leaves the convex lens.

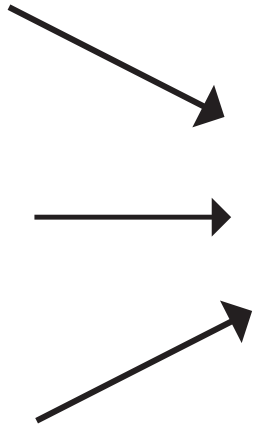


## Concave Lens

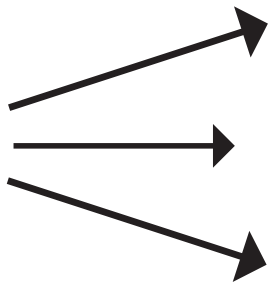
Draw a concave lens in the box below. Then, on the outside of the box, draw arrows to represent how light would travel once it leaves the concave lens.



Fill in these blanks using the words **diverge**, **converge**, **convex**, and **concave**. Do not use any word more than once.



When light **converges**, that means that it comes together. Light that travels through a **convex** lens does this.

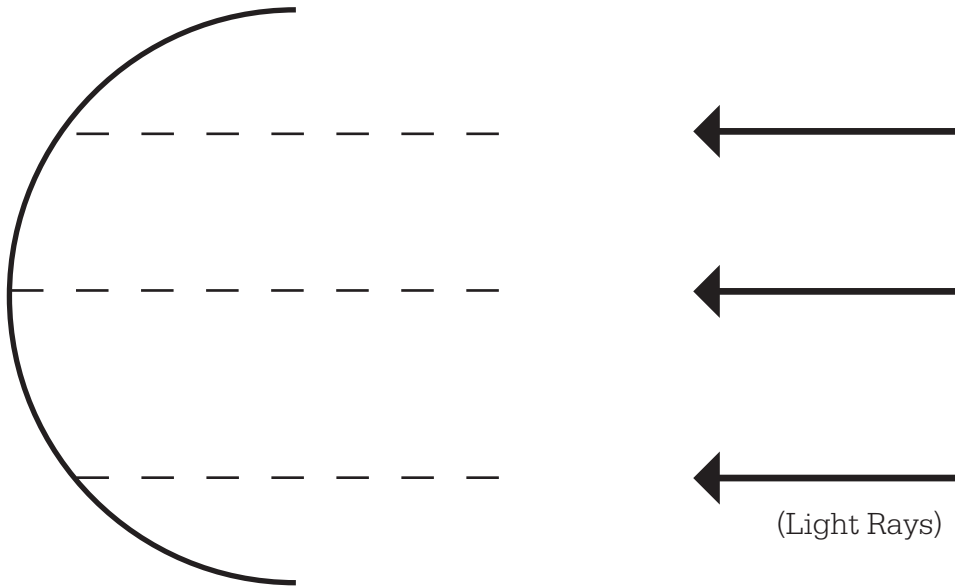


When light **diverges**, that means that it spreads apart. Light that travels through a **concave** lens does this.

Name: \_\_\_\_\_

# Interactive *diagram*

**Mirrors:** What happens to light as it is reflected from different types of mirrors?



Draw arrows to show  
how light would be  
reflected off of this  
type of mirror.

(Light Rays)

Which type of mirror is this? \_\_\_\_\_

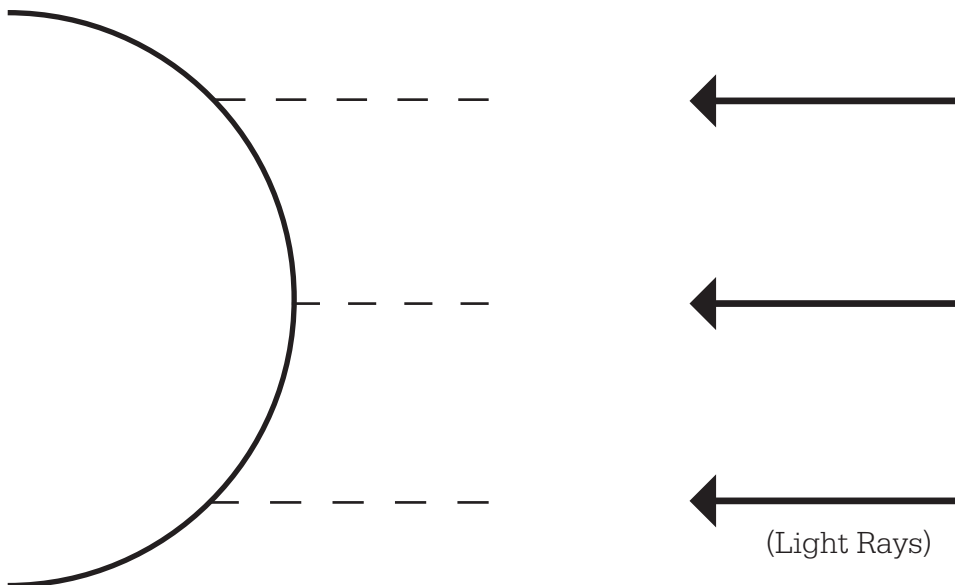
Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

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Draw arrows to show how light would be reflected off of this type of mirror.

Which type of mirror is this? \_\_\_\_\_

Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

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What is the name of the type of mirror that we use every day?

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Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

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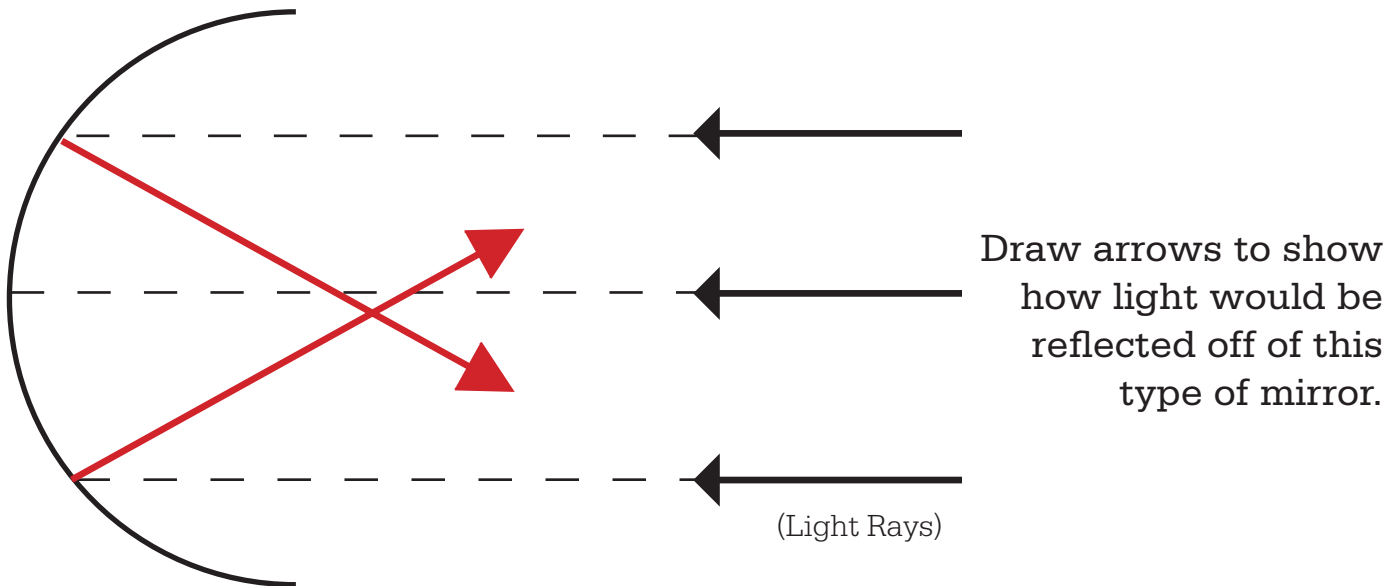
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Name: ANSWER KEY

# Interactive *diagram*

**Mirrors:** What happens to light as it is reflected from different types of mirrors?



Which type of mirror is this? concave mirror

Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

When light reflects off of a concave mirror, the light converg-

es, or comes together and creates a focal point (where the

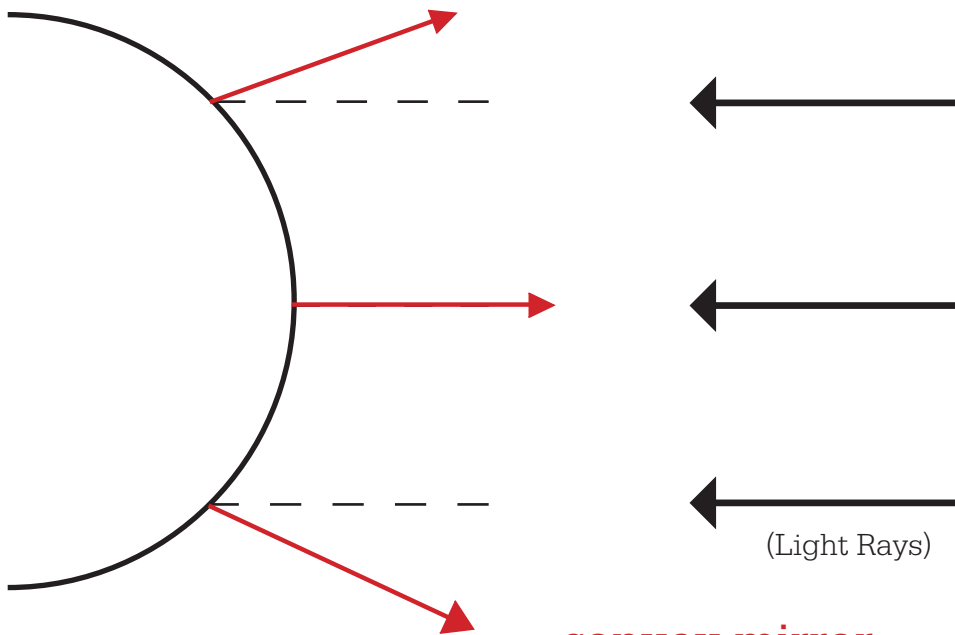
two reflection rays meet). If you are standing in front of the

focal point, your image will appear very large and magnified.

If you are standing behind the focal point, the image will

appear upside down.





Draw arrows to show how light would be reflected off of this type of mirror.

Which type of mirror is this? convex mirror

Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

When light reflects off of a convex mirror, it diverges, or  
spreads out. This causes the reflected image to appear  
smaller and farther away than the object really is.

What is the name of the type of mirror that we use every day?

plane mirror

Explain what happens to light as it is reflected off of this type of mirror. What happens to the image that is being reflected off of this type of mirror?

When light reflects off of a plane mirror, it reflects an image  
that is reversed front to back. That is, the front of the image  
is facing back at you.

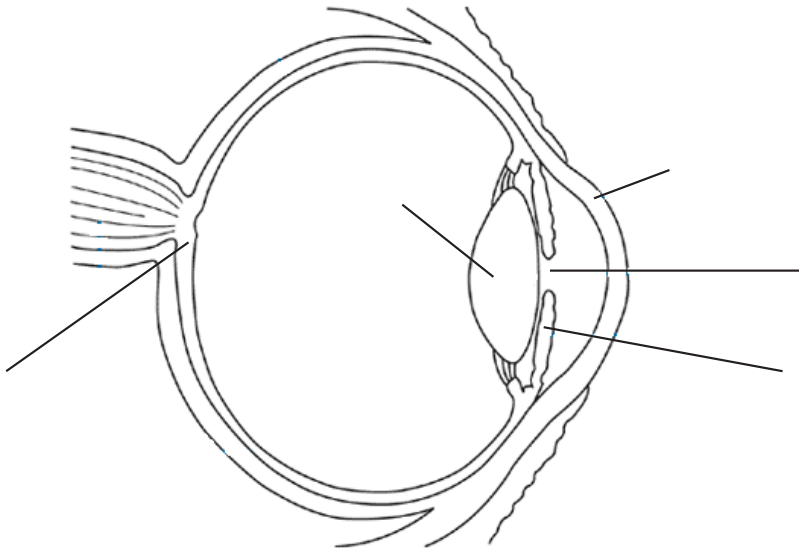
Name: \_\_\_\_\_

# Interactive *diagram*

## How do our eyes work?

Use the terms below to complete the diagram.

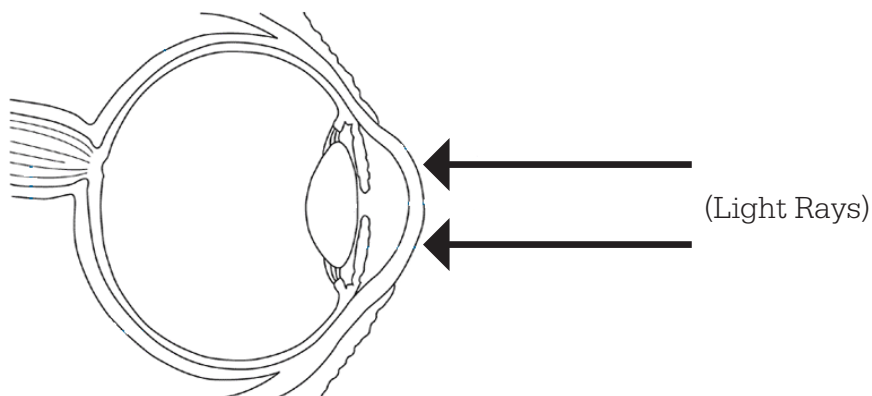
**Retina**    **Cornea**    **Lens**    **Pupil**    **Iris**



When light enters the human eye, the light converges {comes together}. This is where the image is focused within the eye and it's called the **focal point**.

Where {inside of a normal human eye} should the light come together within the eye to form this image? \_\_\_\_\_

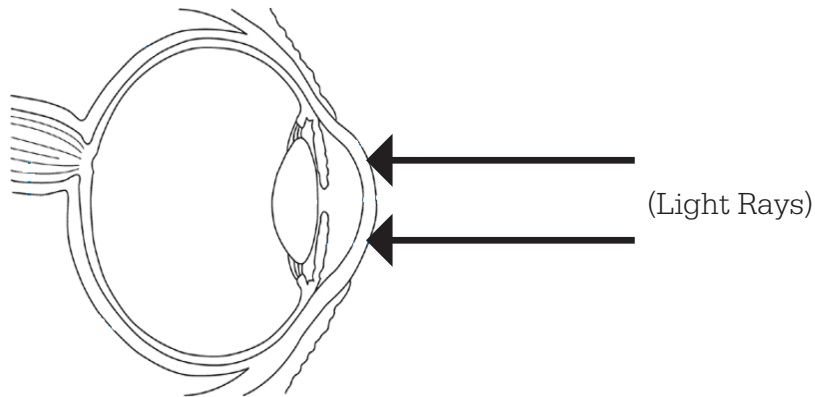
On the diagram below, draw arrows inside of the eye to represent the light entering the eye and converging. Make sure you draw the focal point on the correct place within the eye!



## **FARSIGHTED**

When someone is farsighted, that means that they have a difficult time seeing things that are \_\_\_\_\_.

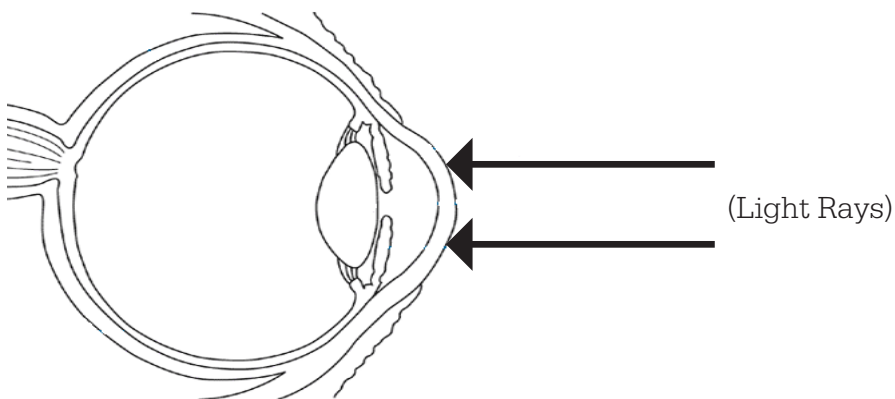
This is because the eye is too short. On the diagram below, draw how light enters a farsighted eye and creates a focal point {in the wrong place}. Make sure you draw the focal point to indicate farsightedness!



## **NEARSIGHTED**

When someone is nearsighted, that means that they have a difficult time seeing things that are \_\_\_\_\_.

This is because the eye is too long. On the diagram below, draw how light enters a nearsighted eye and creates a focal point {in the wrong place}. Make sure you draw the focal point to indicate nearsightedness!



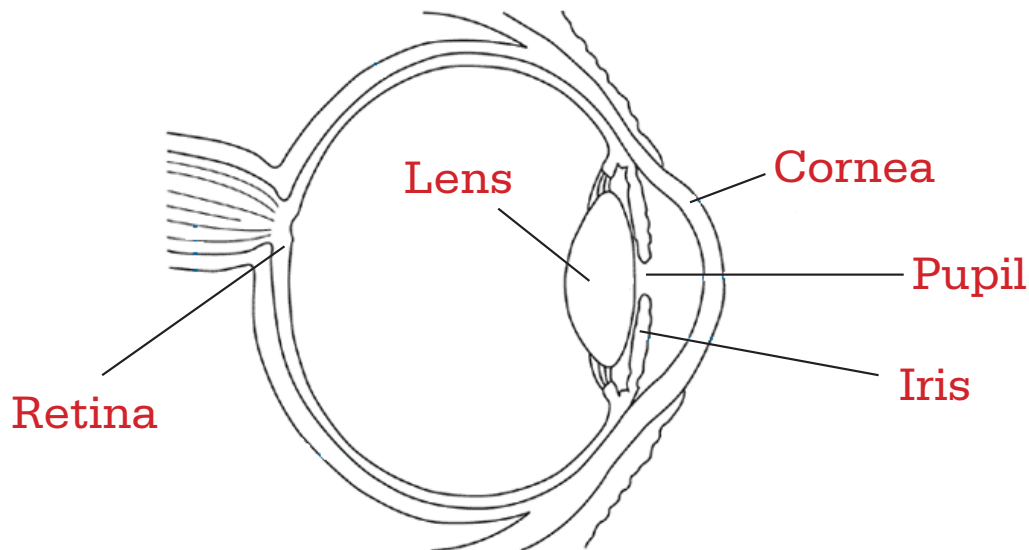
Name: ANSWER KEY

# Interactive *diagram*

## How do our eyes work?

Use the terms below to complete the diagram.

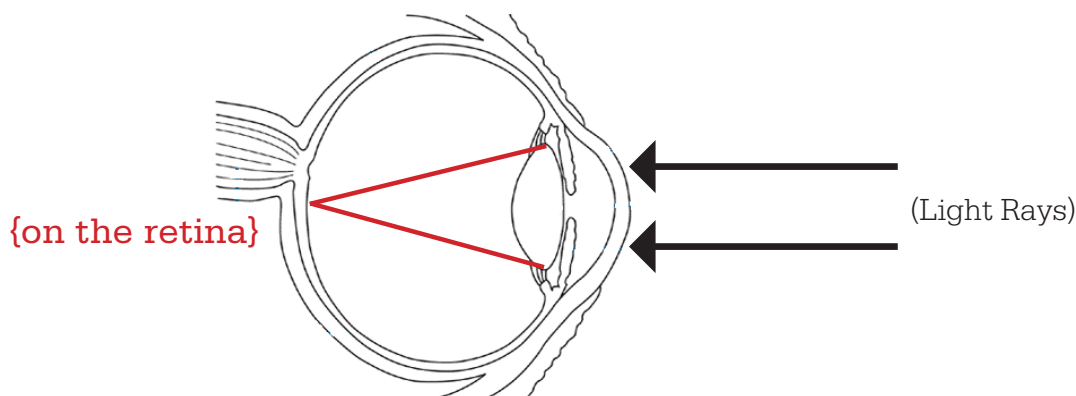
**Retina**    **Cornea**    **Lens**    **Pupil**    **Iris**



When light enters the human eye, the light converges {comes together}. This is where the image is focused within the eye and it's called the **focal point**.

Where {inside of a normal human eye} should the light come together within the eye to form this image? on the retina

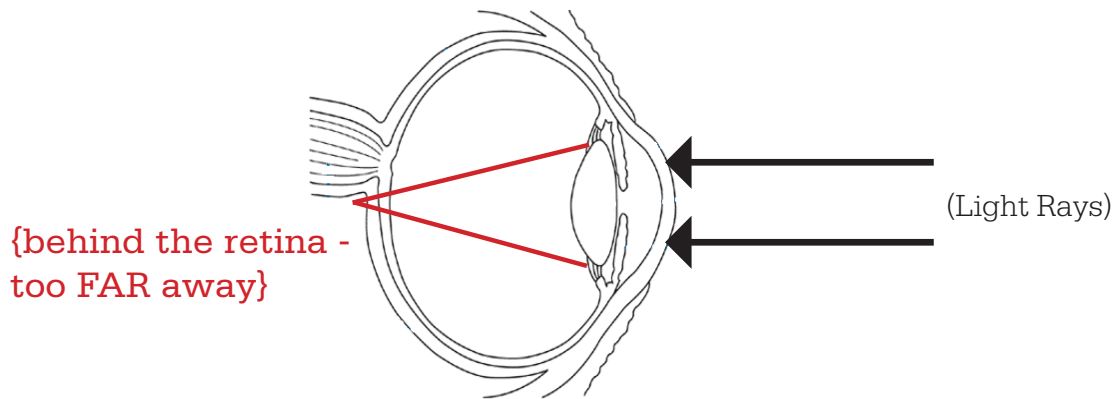
On the diagram below, draw arrows inside of the eye to represent the light entering the eye and converging. Make sure you draw the focal point on the correct place within the eye!



## FARSIGHTED

When someone is farsighted, that means that they have a difficult time seeing things that are close up {they can see things that are FAR.}

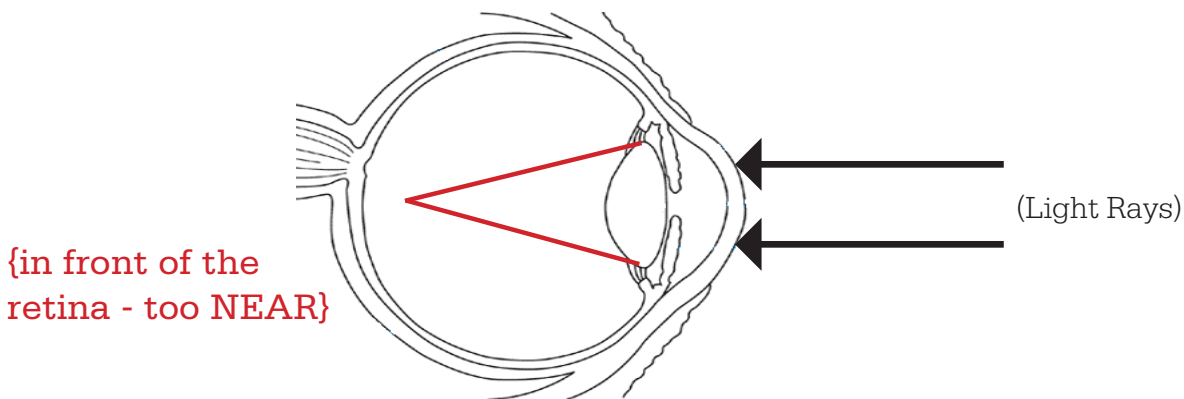
This is because the eye is too short. On the diagram below, draw how light enters a farsighted eye and creates a focal point {in the wrong place}. Make sure you draw the focal point to indicate farsightedness!



## NEARSIGHTED

When someone is nearsighted, that means that they have a difficult time seeing things that are far away {they can see things that are NEAR.}

This is because the eye is too long. On the diagram below, draw how light enters a nearsighted eye and creates a focal point {in the wrong place}. Make sure you draw the focal point to indicate nearsightedness!



Name: \_\_\_\_\_

# Interactive *diagram*

**Corrective Lenses:** Which type of lens helps correct vision problems?

## **FARSIGHTEDNESS**

We have learned that when someone is farsighted, that means that they have a difficult time seeing things that are close up. {They can see things that are far.}

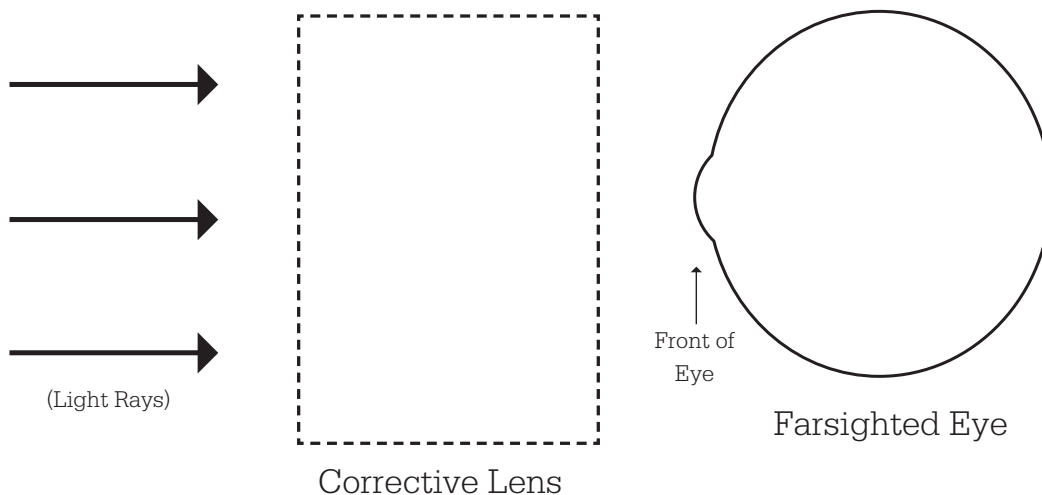
Inside of a farsighted eye, the focal point {or where the image is formed} is created behind the retina instead of on the retina because the eye is shorter than it should be. Which type of corrective lenses would correct this problem?

\_\_\_\_\_

Explain your answer. What would this type of lens help the light do?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

For the diagram below, draw either a convex or a concave lens in the box in front of it. Then draw how the light would travel through the lens and then through the eye to correct farsightedness.



## NEARSIGHTEDNESS

We have learned that when someone is nearsighted, that means that they have a difficult time seeing things that are far away. {They can see things that are near.}

Inside of a nearsighted eye, the focal point {or where the image is formed} is created in front of the retina instead of on the retina because the eye is longer than it should be. Which type of corrective lenses would correct this problem?

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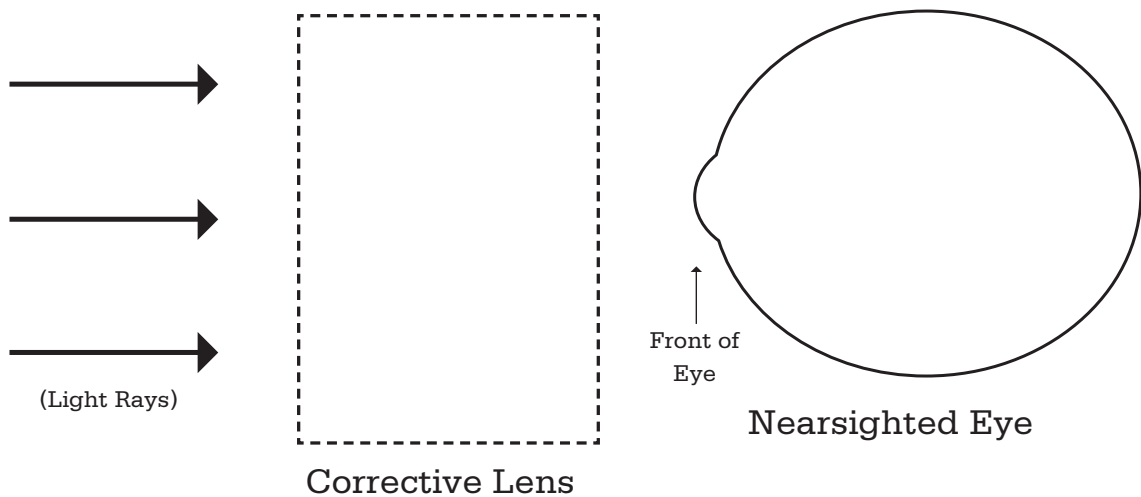
Explain your answer. What would this type of lens help the light do?

---

---

---

For the diagram below, draw either a convex or a concave lens in the box in front of it. Then draw how the light would travel through the lens and then through the eye to correct nearsightedness.



Name: ANSWER KEY

# Interactive *diagram*

**Corrective Lenses:** Which type of lens helps correct vision problems?

## FARSIGHTEDNESS

We have learned that when someone is farsighted, that means that they have a difficult time seeing things that are close up. {They can see things that are far.}

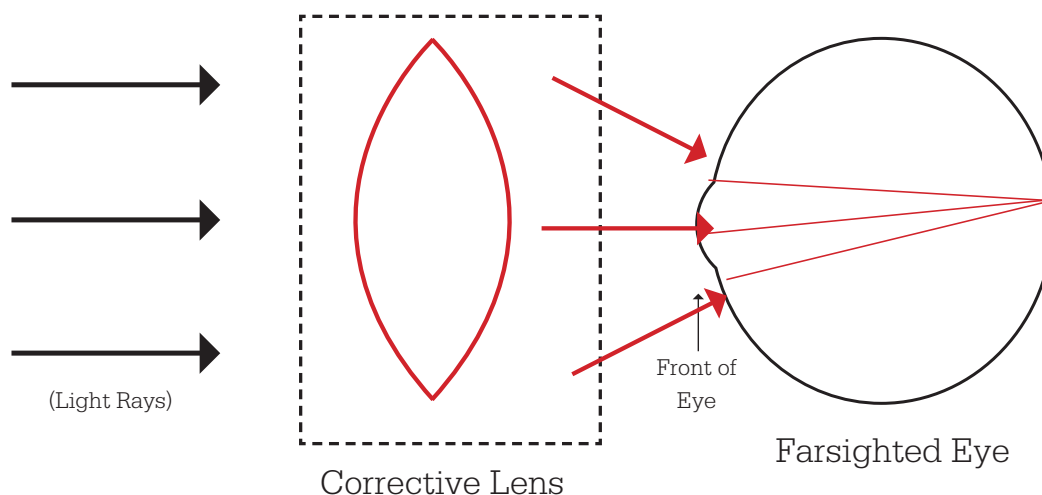
Inside of a farsighted eye, the focal point {or where the image is formed} is created behind the retina instead of on the retina because the eye is shorter than it should be. Which type of corrective lenses would correct this problem?

Convex lens

Explain your answer. What would this type of lens help the light do?

A convex lens converges light, or brings it together. This would help to  
bring the light closer together. This way, the image would be formed on  
the retina where it needs to, instead of way behind it.

For the diagram below, draw either a convex or a concave lens in the box in front of it. Then draw how the light would travel through the lens and then through the eye to correct farsightedness.





## NEARSIGHTEDNESS

We have learned that when someone is nearsighted, that means that they have a difficult time seeing things that are far away. {They can see things that are near.}

Inside of a nearsighted eye, the focal point {or where the image is formed} is created in front of the retina instead of on the retina because the eye is longer than it should be. Which type of corrective lenses would correct this problem?

**Concave lens**

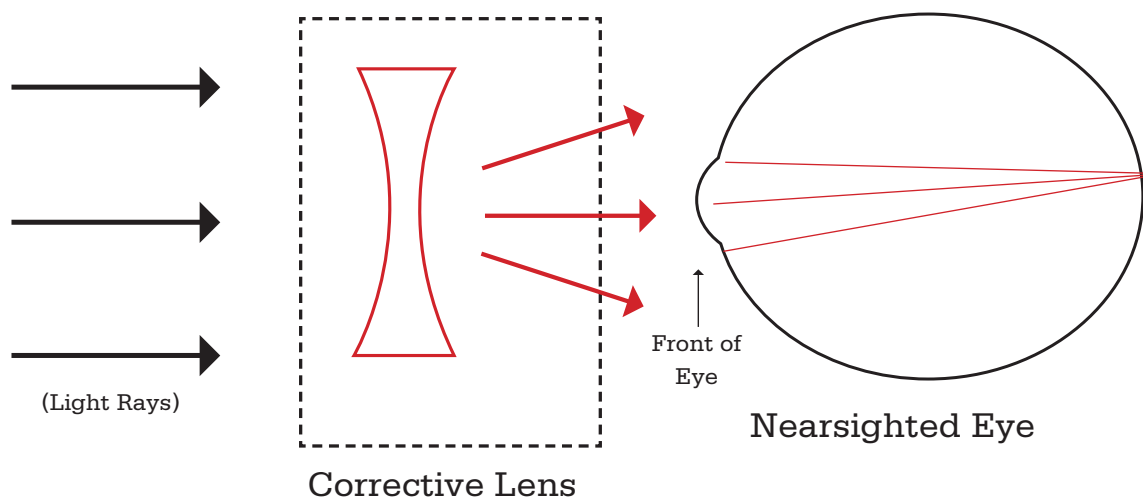
---

Explain your answer. What would this type of lens help the light do?

**A concave lens diverges light, or spreads it apart. A concave lens would help spread out the light farther so that it could travel farther back into the eye and create the image on the retina, instead of before it.**

---

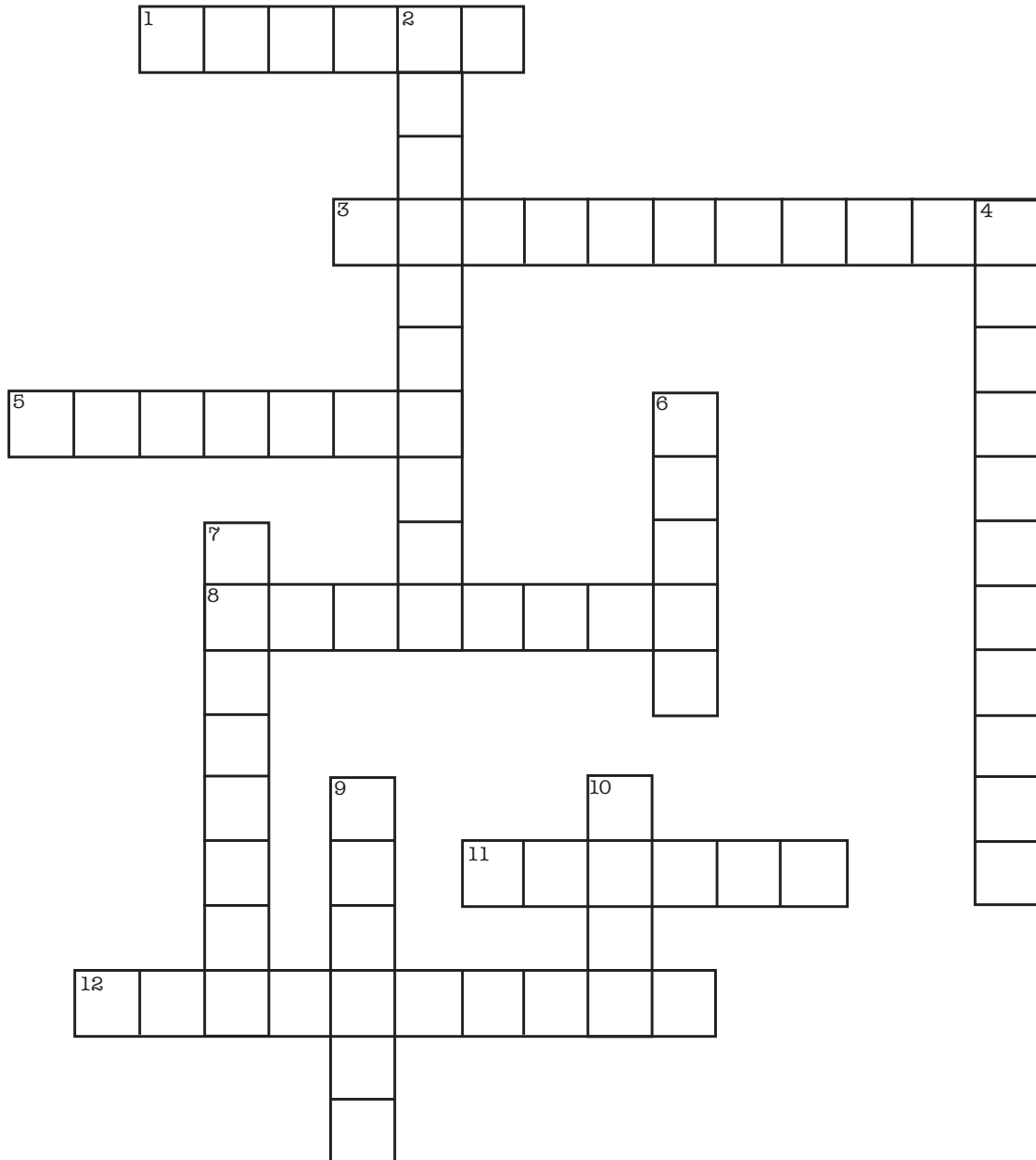
For the diagram below, draw either a convex or a concave lens in the box in front of it. Then draw how the light would travel through the lens and then through the eye to correct nearsightedness.



Name: \_\_\_\_\_

# Light & Color

## Crossword Puzzle Review



### ACROSS

- 1 This word means "to soak up".
- 3 What type of object transmits light?
- 5 This word means "to bounce off".
- 8 This word means "to go through".
- 11 What type of object is most likely to reflect light?
- 12 Light is invisible until something \_\_\_\_\_ it.

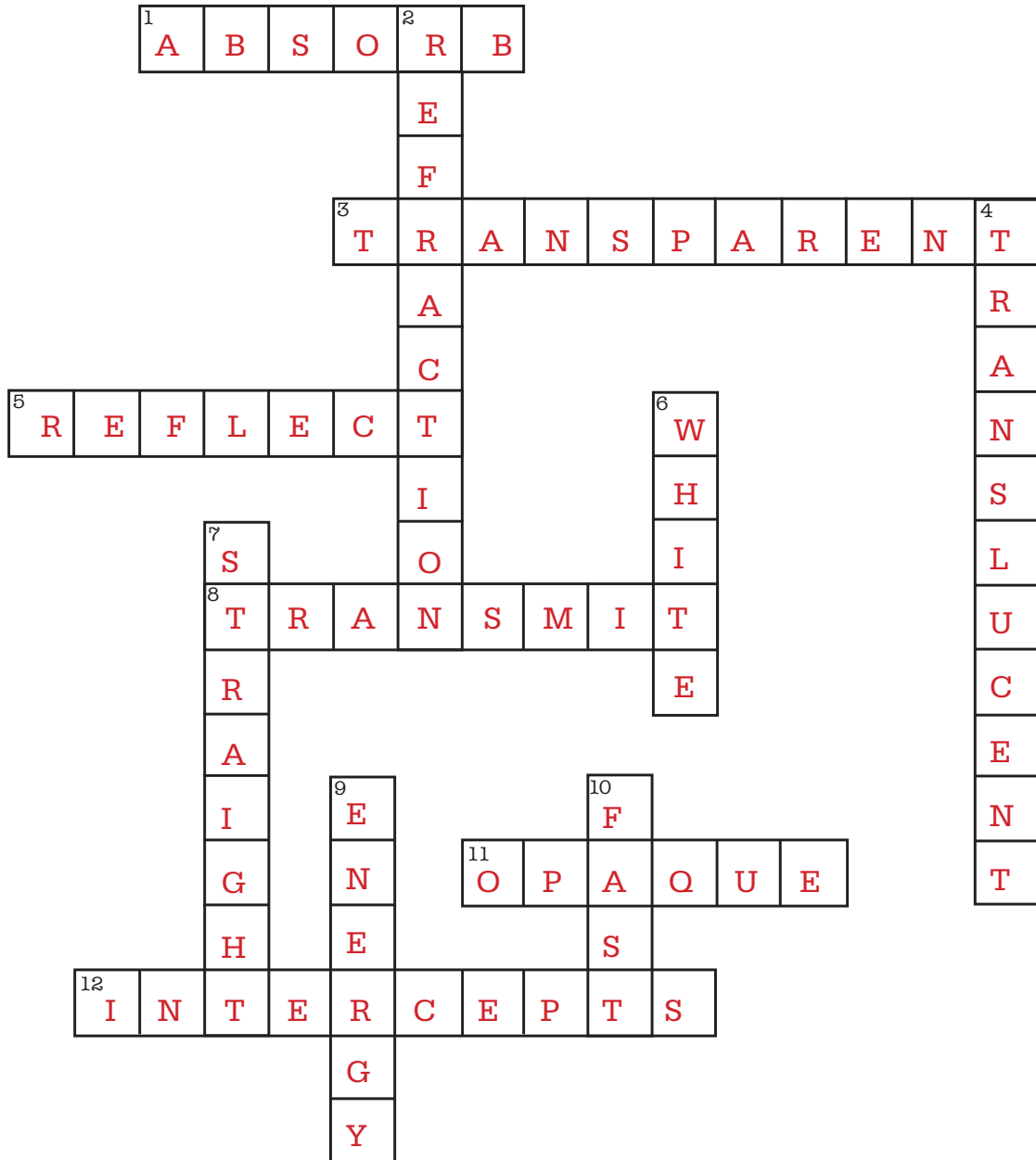
### DOWN

- 2 This is the bending of light.
- 4 Which type of object is most likely to absorb light?
- 6 This is the color that we see when all of the colors of light mix together.
- 7 Light travels in a \_\_\_\_\_ line.
- 9 Light is a type of \_\_\_\_\_.
- 10 Light travels very \_\_\_\_\_.

Name: ANSWER KEY

# Light & Color

## Crossword Puzzle Review



### ACROSS

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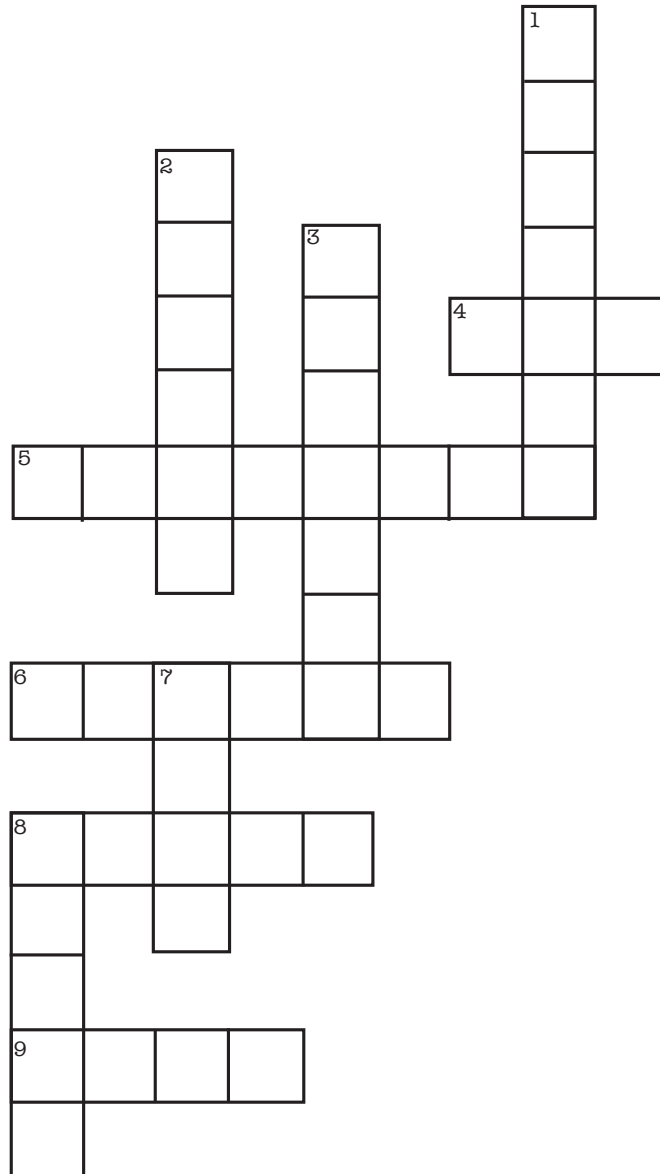
### DOWN

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- 10 Light travels very \_\_\_\_\_.

Name: \_\_\_\_\_

# Mirrors & Optics

## Crossword Puzzle Review



### ACROSS

- 4 If someone is nearsighted, things that are \_\_\_\_\_ look blurry.
- 5 This word means "to come together".
- 6 A \_\_\_\_\_ mirror and lens bulges outward.
- 8 This is the type of mirror that we use every day.
- 9 This is the band of muscles that controls the pupil within the human eye.

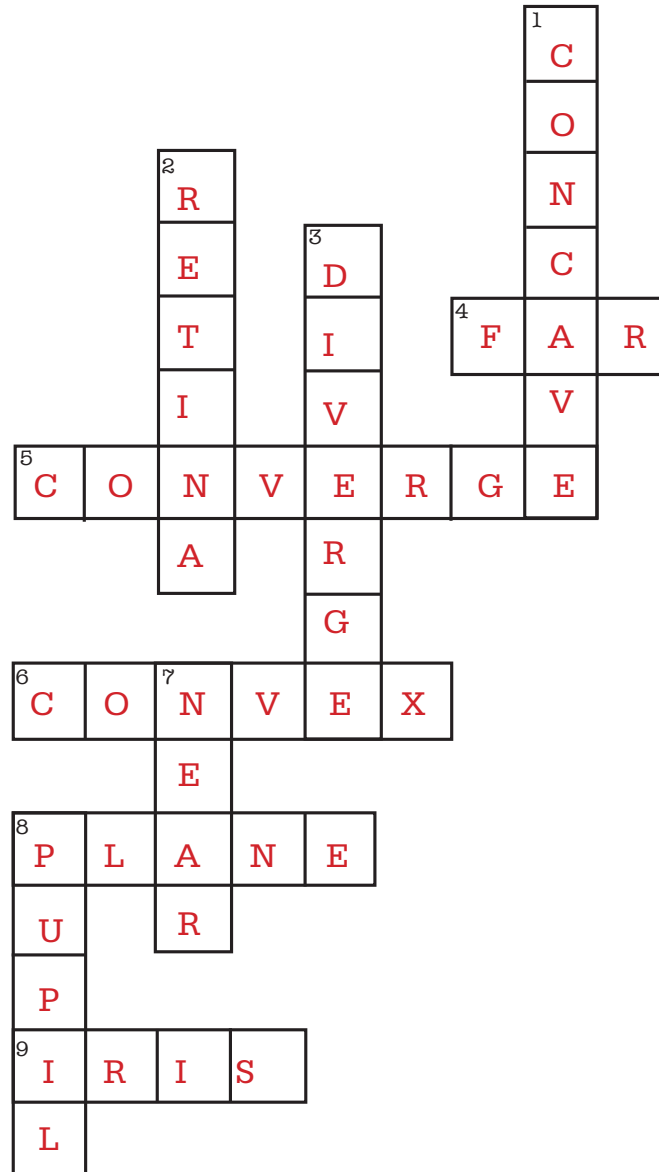
### DOWN

- 1 A \_\_\_\_\_ lens would correct nearsighted vision.
- 2 This is the part of the eye where the image forms.
- 3 This word means "to spread out".
- 7 If someone is farsighted, things that are \_\_\_\_\_ look blurry.
- 8 This is the part of the eye that adjusts in order to let light in..

Name: ANSWER KEY

# Mirrors & Optics

## Crossword Puzzle Review



### ACROSS

- 4 If someone is nearsighted, things that are \_\_\_\_\_ look blurry.
- 5 This word means "to come together".
- 6 A \_\_\_\_\_ mirror and lens bulges outward.
- 8 This is the type of mirror that we use every day.
- 9 This is the band of muscles that controls the pupil within the human eye.

### DOWN

- 1 A \_\_\_\_\_ lens would correct nearsighted vision.
- 2 This is the part of the eye where the image forms.
- 3 This word means "to spread out".
- 7 If someone is farsighted, things that are \_\_\_\_\_ look blurry.
- 8 This is the part of the eye that adjusts in order to let light in..



# Light-O!

Directions: {Recommended- print out the Light-O cards on cardstock and laminate for future use!} Pass out the “Light-O” cards to students. {There are 18 different boards on subsequent pages.} Have them use pennies, scraps of paper, or whatever else you might have on hand to use as markers. Call out the questions (on the next page) in a random order. Have a scratch piece of paper so that you can jot down the number of the questions that you called out. Students cover the answer to the question, if they have it ANYWHERE on their card. When someone calls out “Light-O!”, You can use your scratch paper to double check that they have the correct answers marked. You can play any version of traditional Bingo that you like! (Four Corners, Cover-all, or a line of 5 in a row, any way. - It's up to you!)

# Questions

- 1 - This type of lens can correct nearsighted vision
- 2 - This is where the image is formed in the eye of a human with normal vision
- 3 - When we see our reflection in a mirror, we are seeing the reflection reversed which way?
- 4 - This word means to spread apart
- 5 - This is an object that is likely to reflect light
- 6 - A black sweatshirt reflects what color or colors?
- 7 - When light travels through a convex lens, what happens to the light?
- 8 - If you are in a dimly lit room, will your pupil expand or shrink?
- 9 - How would tissue paper most likely interact with light?
- 10 - When light hits a concave mirror, what happens to the light that reflects off of it?
- 11 - This is the type of lens or mirror that curves outward
- 12 - Light energy can also be referred to as this type of energy
- 13 - This is the word that describes what happens to light when it passes through a glass prism
- 14 - What colors are reflected off of a white car?
- 15 - This is the protective tissue that covers the front of the eye
- 16 - Which type of lens can correct farsighted vision?
- 17 - White light is actually made of what colors?
- 18 - If you can see completely through an object, it is what?
- 19 - This eye problem occurs because the focal point is created behind the retina
- 20 - This is the word that describes what happens to light as it goes through a concave lens
- 21 - This is the color that is reflecting from a red apple
- 22 - Which type of lens is thicker in the middle and thinner on the outsides?
- 23 - This is the band of muscles that control the pupil
- 24 - If you cannot see through an object at all, it is what?
- 25 - What happens to your pupil when you are in a room that is very bright?
- 26 - This eye problem occurs because the focal point is created before the retina.
- 27 - This is the type of lens or mirror that bends inward
- 28 - This word means to come together

# Answers

- 1 - Concave
- 2 - (On the) retina
- 3 - Front to back
- 4 - Diverge
- 5 - Mirror
- 6 - No colors
- 7 - Converges
- 8 - Expand
- 9 - Absorb
- 10 - Diverge
- 11 - Convex
- 12 - Radiant
- 13 - Refracts
- 14 - All colors
- 15 - Cornea
- 16 - Convex
- 17 - All colors
- 18 - Transparent
- 19 - Farsighted
- 20 - Diverge
- 21 - Red light
- 22 - Convex
- 23 - Iris
- 24 - Opaque
- 25 - Shrinks
- 26 - Nearsighted
- 27 - Concave
- 28 - Converge



Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker! When you think you have “Light-O”, call it out!


**L**

**I**

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CONVEX	TRANSPARENT	DIVERGES	POTENTIAL ENERGY	REFLECT
LENS	RETINA	CONVERGE	CLOTH	PUPIL
REFRACT	CONCAVE MIRROR		NO COLORS	OPTIC NERVE
RED LIGHT	MIRRORS	CORNEA	RADIANT ENERGY	EXPAND
DIVERGE	FARSIGHTED	CONCAVE	LEFT TO RIGHT	ALL COLORS

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


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CONCAVE	TRANSLUCENT	LIGHT	KINETIC ENERGY	REFLECT
CORNEA	REFLECT	FRONT TO BACK	IRIS	$I = R$
ROY G BIV	CONCAVE MIRROR		NO COLORS	SHRINK
GREEN LIGHT	PRISM	CORNEA	ALL COLORS	EXPAND
GLASS	NONE	DIVERGE	LEFT TO RIGHT	BLUE LIGHT

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

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**T**

KINETIC ENERGY	TRANSLUCENT	LIGHT	NEARSIGHTED	REFLECT
WHITE	CORNEA	GREEN LIGHT	IRIS	RED LIGHT
PRISM	CONVEX		DIVERGE	FRONT TO BACK
OPTIC NERVE	SHRINK	CONCAVE MIRROR	ALL COLORS	EXPAND
FOIL	$I = R$	LAW OF REFLECTION	REFLECT	ROY G BIV

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker! When you think you have “Light-O”, call it out!


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TRANSLUCENT	WHITE	FARSIGHTED	RED LIGHT	REFLECT
LIGHT	POTENTIAL ENERGY	GREEN LIGHT	IRIS	FRONT TO BACK
CORNEA	CONCAVE		CONVERGE	LEFT TO RIGHT
MIRROR	NO COLORS	CONCAVE MIRROR	ALL COLORS	PRISM
OPTIC NERVE	$I = R$	SHRINK	REFLECT	ROY G BIV

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!

**L**

**I**

**G**

**H**

**T**

ROY G BIV

REFLECT

BLACK

RED LIGHT

LAW OF  
REFLECTION

FOIL

POTENTIAL  
ENERGY

WHITE

FARSIGHTED

FRONT TO  
BACK

IRIS

CORNEA



SHRINK

KINETIC  
ENERGY

REFRACT

ALL COLORS

CONCAVE  
MIRROR

ALL COLORS

PRISM

CORNEA

TRANSLUCENT

SHRINK

CONVERGE

MIRROR

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

BLACK	REFLECT	CONCAVE	RED LIGHT	CONVEX MIRROR
CORNEA	LAW OF REFLECTION	ROY G BIV	FARSIGHTED	DIVERGE
REFRACT	CORNEA		PRISM	POTENTIAL ENERGY
FOIL	ALL COLORS	SHRINK	$I = R$	GREEN LIGHT
IRIS	KINETIC ENERGY	WHITE	CONVERGE	NEARSIGHTED

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

GREEN LIGHT	RED LIGHT	REFLECT	MIRROR	CONCAVE
CORNEA	GLASS	CORNEA	CONVERGE	ALL COLORS
REFRACT	ROY G BIV		LAW OF REFLECTION	TRANSLUCENT
PRISM	CONVEX MIRROR	SHRINK	OPTIC NERVE	BLACK
IRIS	DIVERGE	WHITE	KINETIC ENERGY	SHRINK

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker! When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

IRIS	ALL COLORS	OPTIC NERVE	MIRROR	TRANSLUCENT
CONCAVE	CLOTH	POTENTIAL ENERGY	WHITE	CONVERGE
$I = R$	REFLECT		CONCAVE	SHRINK
ROY G BIV	DIVERGE	SHRINK	CORNEA	BLACK
RED LIGHT	LEFT TO RIGHT	WHITE	NONE	FRONT TO BACK



Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker! When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

REFLECT	CONVERGE	LEFT TO RIGHT	MIRROR	TRANSLUCENT
CORNEA	CLOTH	CONVEX MIRROR	PRISM	OPTIC NERVE
REFRACT	EXPAND		CONCAVE	SHRINK
ROY G BIV	DIVERGE	SHRINK	CORNEA	BLACK
RED LIGHT	NEARSIGHTED	WHITE	NONE	FRONT TO BACK

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

TRANSLUCENT	ALL COLORS	LEFT TO RIGHT	REFLECT	LAW OF REFLECTION
CORNEA	CONVEX MIRROR	IRIS	FARSIGHTED	CLOTH
EXPAND	FRONT TO BACK		CONVEX	PRISM
GREEN LIGHT	DIVERGE	ROY G BIV	RETINA	KINETIC ENERGY
RED LIGHT	SHRINK	CONCAVE	WHITE	CONVERGE

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

ALL COLORS	TRANSLUCENT	NONE	OPTIC NERVE	CONVEX
BLACK	CORNEA	IRIS	LAW OF REFLECTION	GREEN LIGHT
SHRINK	FRONT TO BACK		WHITE	CORNEA
FOIL	FARSIGHTED	SHRINK	RETINA	KINETIC ENERGY
LEFT TO RIGHT	RED LIGHT	REFLECT	PRISM	CONVERGE

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have "Light-O", call it out!


**L**

**I**

**G**

**H**

**T**

RED LIGHT	ROY G BIV	CORNEA	CONVEX	TRANSLUCENT
LAW OF REFLECTION	GREEN LIGHT	IRIS	WHITE	NONE
SHRINK	LEFT TO RIGHT		BLACK	CONCAVE
CLOTH	FARSIGHTED	DIVERGE	RETINA	POTENTIAL ENERGY
KINETIC ENERGY	ALL COLORS	REFRACT	PRISM	EXPAND

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have "Light-O", call it out!


**L**

**I**

**G**

**H**

**T**

ROY G BIV	RED LIGHT	IRIS	CONVEX	TRANSLUCENT
SIDE TO SIDE	SHRINK	OPTIC NERVE	WHITE	NONE
SHRINK	CONVERGE		BLACK	PUPIL
CLOTH	POTENTIAL ENERGY	ABSORB	CORNEA	NEARSIGHTED
KINETIC ENERGY	REFLECT	RETINA	LEFT TO RIGHT	PRISM

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have "Light-O", call it out!


**L**

**I**

**G**

**H**

**T**

DIVERGE	LEFT TO RIGHT	RADIANT ENERGY	TRANSPARENT	GREEN LIGHT
EXPAND	CONVEX MIRROR	DIVERGE	NO COLOR	PUPIL
WHITE	LAW OF REFLECTION		CONCAVE	ALL COLORS
CORNEA	REFRACT	GLASS	OPAQUE	FRONT TO BACK
CONCAVE	TISSUE PAPER	MIRROR	FARSIGHTED	PRISM

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have "Light-O", call it out!


**L**

**I**

**G**

**H**

**T**

CONVERGE	GREEN LIGHT	NEARSIGHTED	DIVERGE	ALL COLORS
FRONT TO BACK	BLACK	CONVEX MIRROR	NO COLOR	CORNEA
OPAQUE	GLASS		CONCAVE	REFRACT
ROY G BIV	CONCAVE	MIRROR	WHITE	TRANSLUCENT
TISSUE PAPER	PRISM	RED LIGHT	LAW OF REFLECTION	SHRINK

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

SHRINK	LAW OF REFLECTION	SIDE TO SIDE	TISSUE PAPER	PRISM
ABSORB	POTENTIAL ENERGY	IRIS	CONVEX	SHRINK
RED LIGHT	GLASS		ALL COLORS	REFRACT
OPTIC NERVE	RETINA	NONE	REFLECT	FARSIGHTED
CLOTH	WHITE	ROY G BIV	TRANSLUCENT	OPAQUE



Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

CORNEA	MIRRORS	REFRACT	CONVEX	CONVERGE
DIVERGES	OPTIC NERVE	FARSIGHTED	CONCAVE MIRROR	RETINA
REFLECT	CLOTH		RED LIGHT	LENS
PUPIL	POTENTIAL ENERGY	NO COLORS	DIVERGE	CONCAVE
EXPAND	ALL COLORS	LEFT TO RIGHT	RADIANT ENERGY	TRANSPARENT

Listen carefully to the questions. When you know the answer, check to see if it is anywhere on your light board. If it is, cover it with a marker!  
When you think you have “Light-O”, call it out!


**L**

**I**

**G**

**H**

**T**

I = R	SHRINK	PRISM	ALL COLORS	CORNEA
KINETIC ENERGY	LEFT TO RIGHT	FRONT TO BACK	ROY G BIV	BLUE LIGHT
CONCAVE MIRROR	NONE		TRANSLUCENT	DIVERGE
GLASS	REFLECT	CORNEA	GREEN LIGHT	IRIS
REFLECT	CONCAVE	EXPAND	LIGHT	NO COLORS

# Vocab Match-Up

## A Review Game

### Vocab Match-Up: Light/Optics Edition

This game is intended to be played as “Memory”. Each page has a front (the gray chevron background) and a back (either the word card or the definition card). Print these pages front and back (with the chevron background on one side). This way, when the students lay the cards face down, the background pattern will be showing. I recommend printing these on card stock and laminating. Print as many sets as you need for your class. You can check the definitions by using the provided list of vocabulary words at the beginning of this packet.

**Directions:** This game is for two players. Mix up the entire set of cards. Place face down. Take turns choosing two cards, with the goal of making a match of a vocab word to its definition. If you don't know the definition of one of the vocab words, you can't play! So make sure to study prior to playing this game. The partner with the most matches once all cards are gone is the winner.



# Vocab Match-Up

## Word Cards

**Energy**

**Radiant  
Energy**

**Luminous**

**Transparent**

**Translucent**

**Opaque**

**Reflection**

**Absorption**

**Transmission**

**Refraction**

**Visible  
Spectrum**

**Convex  
Mirror**



# Vocab Match-Up

## Word Cards

**Concave  
Mirror**

**Plane  
Mirror**

**Convex  
Lens**

**Concave  
Lens**

**Nearsighted**

**Farsighted**

**Diverge**

**Converge**

**ROY G BIV**

**White Light**

**Retina**

**Pupil**





# Vocab Match-Up

## Word Cards

**Iris**

**Lens**

**Optic  
Nerve**



# Vocab Match-Up

## Definition Cards

The ability to do work.

Energy that is transmitted in the form of electromagnetic radiation. It's energy that exists in the absence of matter. Includes visible light, x-rays, gamma rays, and radio waves.

Something that can produce its own light (For example, the sun).

Objects that light can transmit through.

Objects that absorb some light and transmit some light.

Objects that block and reflect light. No light can travel through an opaque object.

The "throwing back" or "bouncing" of light.

The "soaking up" of light.

To go (or travel) through.

The bending of light.

The distribution of colors produced when white light goes through a prism. This includes the colors that we can see: ROY G BIV

A mirror that is bent outward.



# Vocab Match-Up

## Definition Cards

A mirror that is bent inward.

A flat mirror.

A lens that is bent outward.  
Used to correct farsightedness.

A lens that is bent inward.  
Used to correct nearsightedness.

This is when the images are focused in front of the retina in the eye. People with this type of vision can see things close up, but have a hard time seeing things farther away.

This is when the images are focused behind the retina in the eye. People with farsighted vision can see things far away, but have a hard time seeing things close up.

To spread out.

To come together.

Made up of all of the colors of a rainbow. It's the kind of light that we see from the sun and from lamp lights.

The colors that we see in a visible spectrum (red, orange, yellow, green, blue, indigo, violet).

Part of the eye that acts like a screen and responds to light.

Black hole in the center of the eye where light passes through.



# Vocab Match-Up

## Definition Cards

This is the circular band of muscles surrounding the pupil and controls the movement of the pupil. It's also what gives they eyes their color. (It's the colored part of the eye.)

A transparent object that can be concave or convex. The human eye has one of these and allows light to pass through.

This is the nerve that sends images to the brain.