

# LIGHT ENERGY UNIT

**For  
Special  
Ed**

Special Needs for Special Kids



**INCLUDES GOOGLE SLIDES**



This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, and loves to turn a light switch on and off 100 times. With some support he is able to do this unit, and enjoys the challenge. He is my tester!!

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*Also included with this unit is a power point show that is narrated and has automatic advancement of slides. Let me know in the feedback if this was helpful ☺*

This unit contains almost 200 pages of material. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

# Light Energy Lesson Plan

## Preparation

- Print out a vocabulary board for each student to use throughout unit
  - Laminate or place in page protector
- Book
  - Print out, laminate, and bind
  - OR your students can listen to the pre-recorded version
- Vocabulary cards
  - Print out a set of cards onto cardstock and laminate
  - Make one set for each student and also one for the teacher to use in I Spy games

## Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

## Teaching Tips

1. *Color Coding:* this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
  - a. For more info, read more here:  
<https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/>
  - b. I also have a blog post on differentiating one activity 3 ways:  
<https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/>
2. *Make you own copies of the activities:* Every day I review the activity we did yesterday. For that reason:
  - a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
  - b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.

The lesson plans contain:

Overall tips for teaching  
students with significant  
needs

## Quick Look

Day	Activity	Day	Activity
1	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Circle map</li></ul>	8	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Sorting activity</li></ul>
2	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Circle map</li></ul>	9	<ul style="list-style-type: none"><li>• Book</li><li>• Experiment #1</li></ul>
3	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Circle map</li></ul>	10	<ul style="list-style-type: none"><li>• Book</li><li>• Experiment #2</li></ul>
4	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Circle map</li></ul>	11	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Close worksheet</li></ul>
5	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Circle map</li></ul>	12	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards cut and paste</li><li>• Close worksheet</li></ul>
6	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Sorting activity</li></ul>	13	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards cut and paste</li><li>• Close worksheet</li></ul>
7	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab cards activity</li><li>• Sorting activity</li></ul>	14	<ul style="list-style-type: none"><li>• Assessment</li></ul>

*The lesson plans contain:*

*A quick look at what you will do each day*

## Day 2

Activity	Notes	Materials
Read or listen to a recording of the book (15 minutes)	<ul style="list-style-type: none"><li>• Read through the story, asking lots of questions</li><li>• Continue to make connections between book and vocabulary board</li></ul>	<ul style="list-style-type: none"><li>• Book</li><li>• Vocabulary board</li></ul>
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none"><li>• I play this game, or variations of it the first few days<ul style="list-style-type: none"><li>◦ Determine how many cards your students can handle in front of them. This can vary, some students may be able to have all the cards, so may only be able to handle a field of 3-5</li></ul></li><li>• Since this is the first time playing this game, I make it easy. Hold up a card, and have students find the matching one and hold it up</li><li>• Discuss relevant points on the card<ul style="list-style-type: none"><li>◦ You can also play this game in this manner having them find the symbol on their vocabulary board</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Vocabulary cards (student set and teacher set)</li><li>• Vocabulary board</li></ul>
Circle map review (5 minutes)	<ul style="list-style-type: none"><li>• Review the circle map completed yesterday</li></ul>	<ul style="list-style-type: none"><li>• Circle map completed yesterday</li></ul>
Circle Map (10 minutes)	<ul style="list-style-type: none"><li>• Do the circle map on <b>opaque objects</b></li><li>• Choose the best version (errorless or not) depending on the learning level of your students</li><li>• Students cut out symbols and place in circle map</li><li>• Make connections to the book as necessary</li></ul>	<ul style="list-style-type: none"><li>• Circle map</li><li>• Scissors</li><li>• Glue</li></ul>
Sharing (10 minutes)	<ul style="list-style-type: none"><li>• Each student shares their finished circle map with the group using the communication method of their choice</li></ul>	<ul style="list-style-type: none"><li>• Completed activity</li><li>• Communication devices</li></ul>

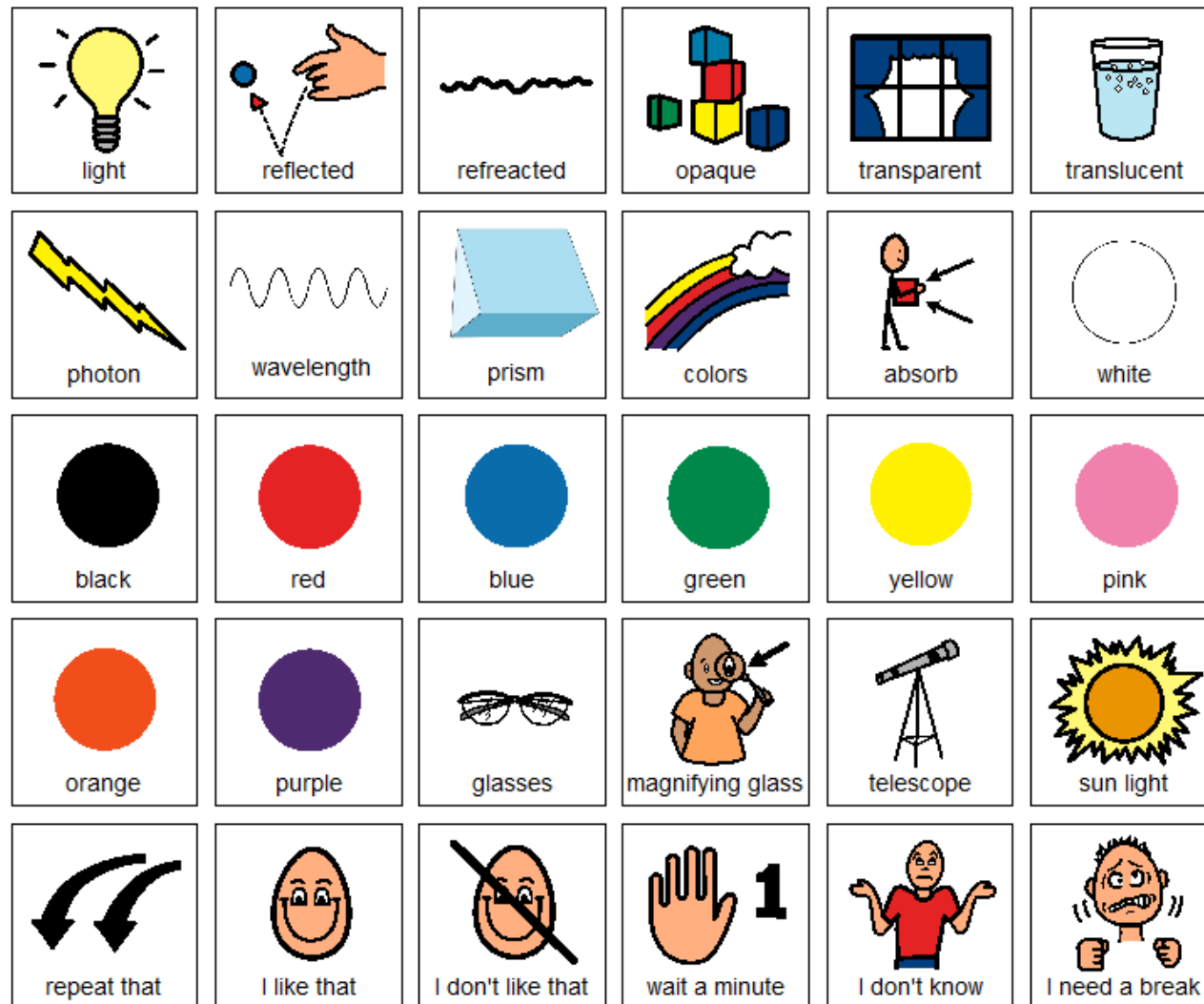
The lesson plans contain:

Detailed instructions on how that day's lesson should run

This unit comes with a vocabulary board.

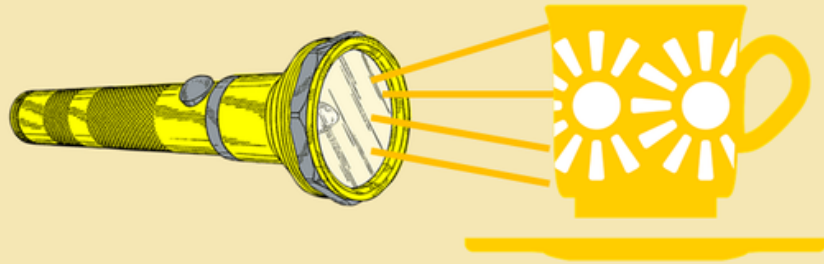
Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!



Christa Joy, Special Needs for Special Kids  
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Some objects totally block the light. They are called **opaque**, and they do not let any light pass through them.



Christa Joy, Special Needs for Special Kids

Some objects let light pass right through them. These objects are considered to be **transparent**.



Christa Joy, Special Needs for Special Kids

There is a 52 page book with this unit using simple text and photos.

It comes in a pdf version as well as a voice recorded powerpoint (so you don't have to print it out.)



### light

Energy that moves in wavelengths.



### photon

Bundle of energy that light travels in.



### wavelength

How light travels. Each color has its own wavelength.



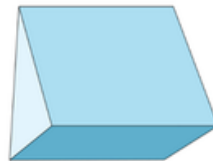
### Sir Isaac Newton

First scientist to study light by working with prisms.



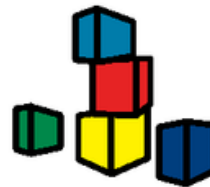
### prism

Specially shaped object that refracts or bends light into different wavelengths or colors.



### opaque

An object that blocks all of the light so none passes through.



### transparent

An object that lets all the light through unchanged.



### translucent

An object that allows light to pass through, but changes it.



There are 15 vocabulary cards that come in color and black and white.

Included are suggestions for group activities to do with these each day.

### light

Energy that moves in wavelengths.



### photon

Bundle of energy that light travels in.



### wavelength

How light travels. Each color has its own wavelength.



### Sir Isaac Newton

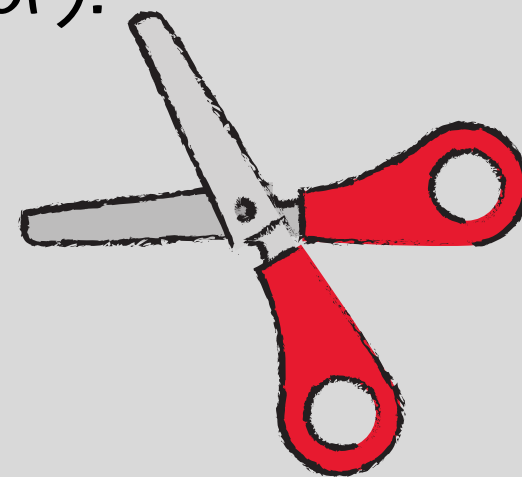
First scientist to study light by working with prisms.



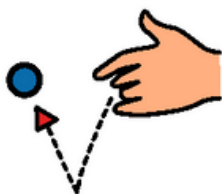
Match the pictures with the definitions on the previous pages.



Towards the unit of the unit, there is an activity where students will match either the picture to the definition or the definition to the picture (harder).



### reflected



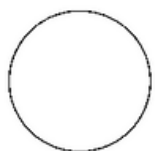
### refracted



### absorb



### white light

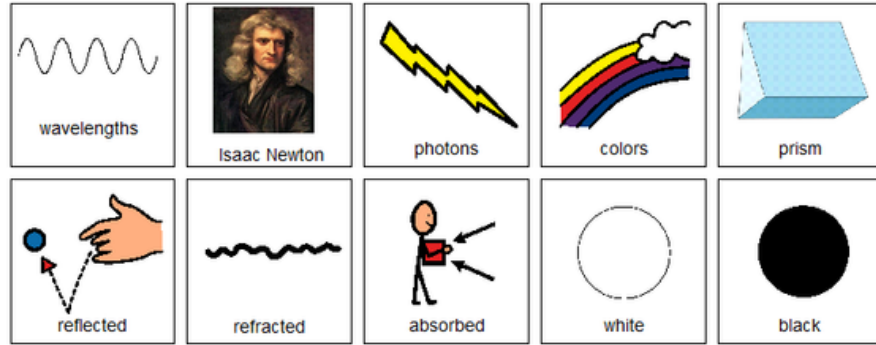


Match the definition to the pictures on the previous page.

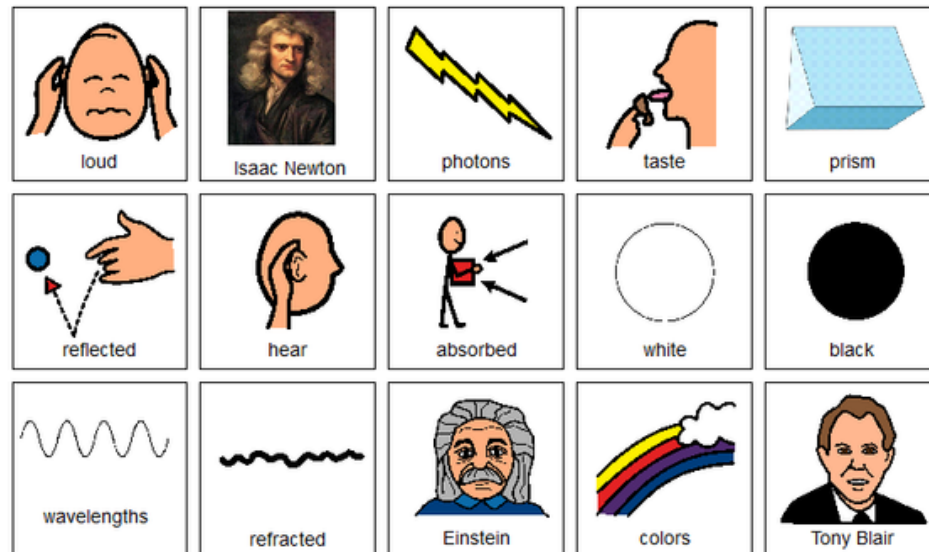
How light travels. Each color has its own wavelength.	An object that lets all the light through unchanged.	Light that passes through an object.
Light that bounces off an object and remains unchanged.	Energy that moves in wavelengths.	Light that is changed, but not the object.
Specially shaped object that refracts or bends light into different wavelengths or colors.	Light that contains all the colors. Objects that look white, absorb NONE of the colors.	First scientist to study light by working with prisms.
The wavelengths that are reflected off an object and reach our eyes.	An object that blocks all of the light so none passes through.	An object that allows light to pass through, but changes it.
Bundle of energy that light travels in.	Object that refracts or bends light in a special way so we can see things that are very far away.	Absence of any color or light. Objects that look black absorb ALL the colors.

Errorless version

Cut apart pictures and place in circle map about light.



Cut apart pictures and place in circle map **ONLY IF** they relate to light.

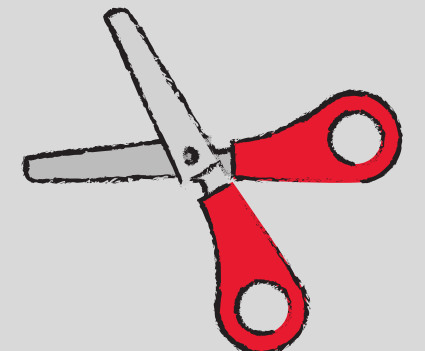


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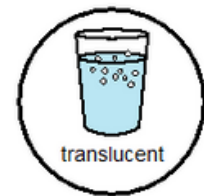
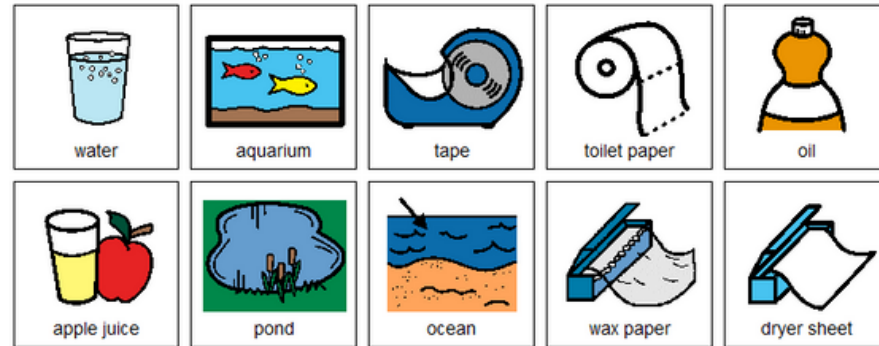
There are 4 circle maps in this unit.  
This first one reviews basic information about light energy.

Circle maps are a great way for students to see the concept at a glance.  
There are 2 versions:

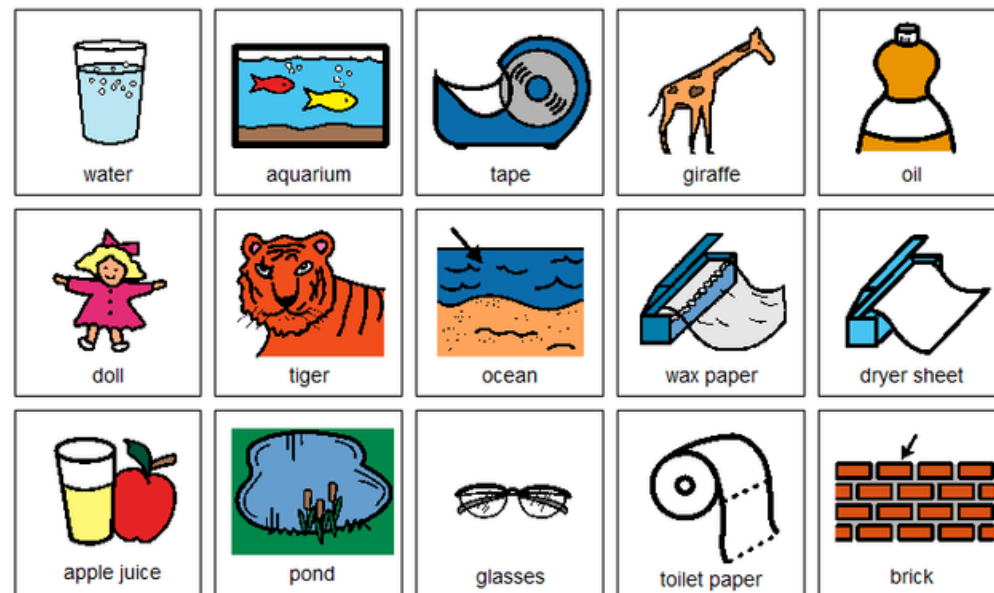
- One is errorless
- One has wrong answers mixed in students will have to set aside



Cut apart pictures and place in circle map about translucent objects.



Cut apart pictures and place in circle map **ONLY IF** they relate to translucent objects.

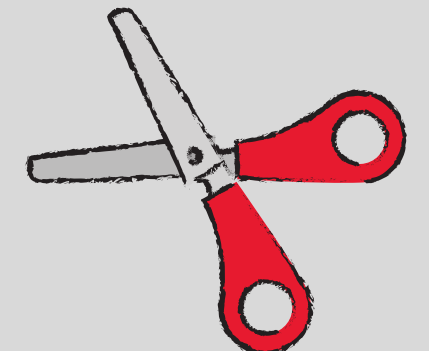

















Then there is one for opaque, translucent, and transparent objects.

Circle maps are a great way for students to see the concept at a glance.
















There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside



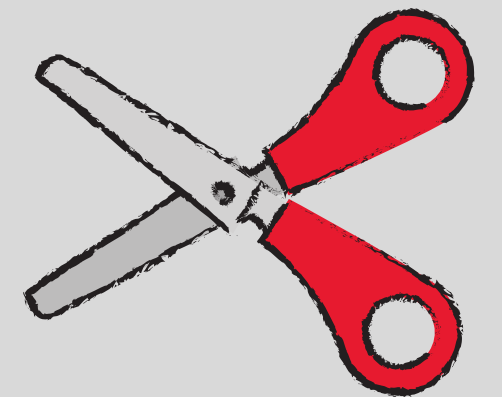
opaque			transparent		
 pumpkin	 jar	 door	 apple	 sun glasses	
 glasses	 lemon	 safety goggles	 squirrel	 window	
 frill neck lizard	 glass	 monkey	 glasses	 horn	

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opaque			translucent		
					
					
					

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There are 3 sorting activities looking at various objects and how light passes or does not pass through them. There are real photos and picture symbols provided. Suggestions for differentiation are included.



## Light Experiment #2

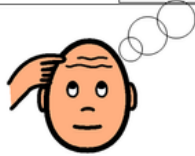
### Opaque, Transparent, or Translucent

#### My hypothesis




I think objects that are  will let  through.

I think objects that are  will let  through.

I think objects that are  will let  through.



## Recording sheet #1

Object	Opaque 	Transparent 	Translucent 
Book			
White paper			
Window			
Glass container			
Full milk carton			
Wax paper			
Dryer sheet			
Napkin			
Pair of glasses			
Box of markers			
Board eraser			
Hand			

## Light Experiment #2

### Opaque, Transparent, or Translucent

#### What I learned

Objects that are  let  through.

Objects that are  let  through.

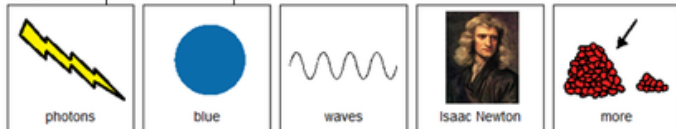
Objects that are  let  through.

There are 2 experiments included in this unit. There are detailed instructions as well as pages for students to fill out, leading them step by step through the scientific method.

## Light

1. Light travels in  just like sound.
2. Light is made up of  or packets of energy.
3. A bright light has  photons than a dim light.
4.  was one of the first scientist to study light.

5. When something looks blue, the color that is reflected back to your eyes is .



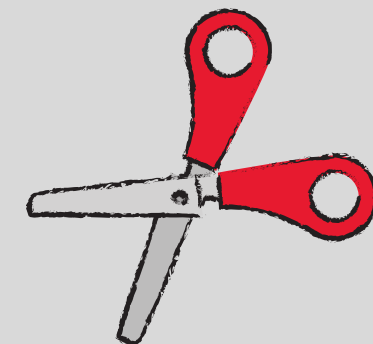
## Opaque Objects

1. Objects that are opaque let  light pass through.
2. Most light  off of opaque objects.
3. A  is an example of an object that is opaque.
4. An opaque object that appear pink, reflects  wavelengths.
5. Objects that appear white, reflect  the color wavelengths.

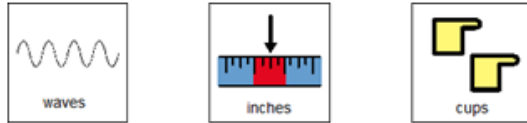


Close worksheets are a great informal assessment. This unit has 5 of them. One is a general review, and there is one for opaque, translucent, and transparent objects.

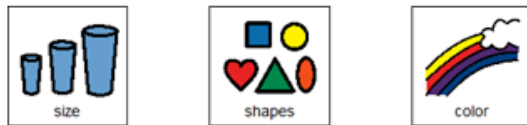
Answer key included.



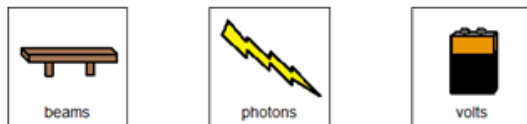
1. What form does light travel in?



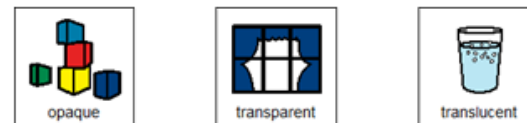
2. Every wavelength is seen as a different:



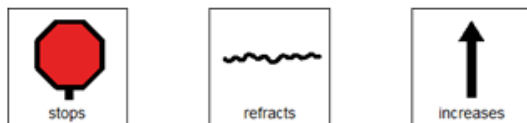
3. The brighter a light is, the more of this it has:



4. Objects that completely block light are called:



5. Translucent objects let some light through, but does this as the light passes through:




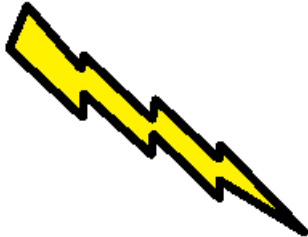

FINALLY the assessment!!  
There are 3 versions. This version has 10 questions with 3 picture choices for each question.

Answer key included.

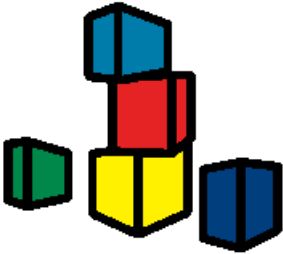

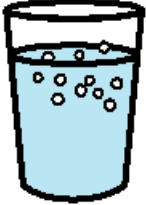


Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 3

		
beams	photons	volts

Q 4

		
opaque	transparent	translucent

*With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.*

1. What form does light travel in?
  - A. Waves
  - B. Inches
  - C. cups
2. Every wavelength is seen as a different:
  - A. Size
  - B. Shape
  - C. color
3. The brighter a light is, the more of this it has:
  - A. Beams
  - B. Photons
  - C. volts
4. Objects that completely block light are called:
  - A. Opaque
  - B. Transparent
  - C. translucent
5. Translucent objects let some light through, but does this as the light passes through:
  - A. Stops
  - B. Refracts
  - C. Increases
6. Isaac Newton used this tool to study light:
  - A. Hammer
  - B. Prism
  - C. Saw

*This is your traditional multiple choice version. It can also be used as a recording sheet if your students are using the version with index cards.*

Watch the movie  
on light energy.

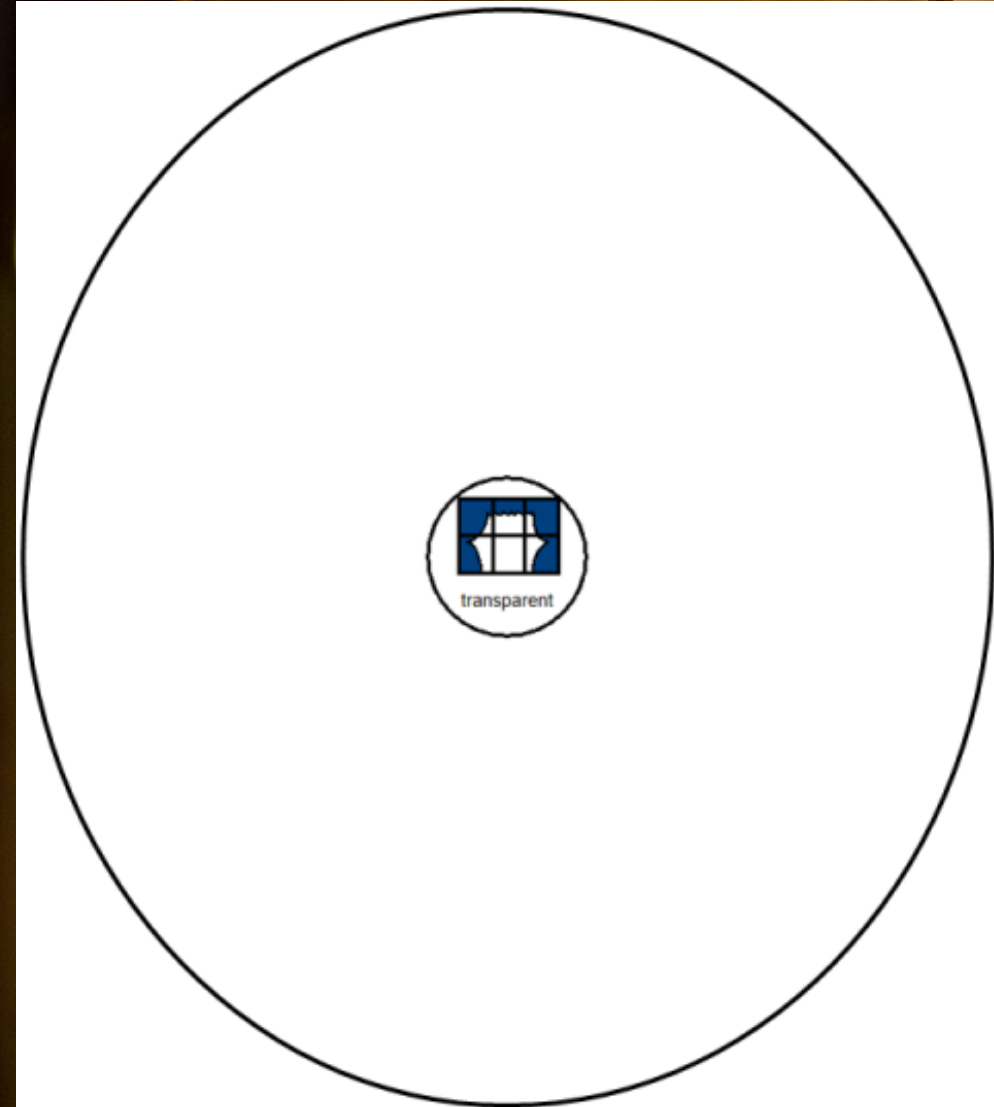
Objects that only let some of the  
light through are called translucent



2:55 / 10:07, Special Needs for Special Kids



This unit also has  
digital activities.  
There is a movie  
version of the  
books students  
can listen to read  
aloud.



Place the pictures in the circle map about objects that are transparent.



The digital activities have students click and drag their answers.



Sort the pictures into the correct column. If you are not sure, place it on the middle line.

 <p>orange</p>	 <p>window</p>	 <p>ocean</p>	 <p>boots</p>	 <p>teddy bear</p>
 <p>dog</p>	 <p>syrup</p>	 <p>pig</p>	 <p>lake</p>	 <p>jar</p>
 <p>tape</p>	 <p>magnifying glass</p>	 <p>light bulb</p>	 <p>honey</p>	 <p>soccer ball</p>
 <p>glass</p>	 <p>rocket</p>	 <p>oil</p>	 <p>glasses</p>	 <p>lemonade</p>

There are 2 sets of slides. One set has color-coding for more support.

## Opaque, Transparent, or Translucent

### What I learned

Objects that are  let  through.

Objects that are  let  through.

Objects that are  let  through.

Choose from the pictures below to complete each sentence about what you saw and learned.



There are also slides with the experiments laid out and ways for students to record their observations.



**[Click Here to read more!!](#)**

I realize there will be some students out there unable to do cutting activities. I have a blog post with ways to complete activities without a pair of scissors!!

*All of the activities (except the books and fact sheet) come in color and black and white.*