SCIENCE · LIGHT AND SHADOWS · GRADES 1–2

Where Does Light Come From?

Sort eight light sources into natural light and light made by people, then answer a question about the dark.

Name: _____ **Date:** _____



Some light is **natural**: it comes from nature. Some light is **made by people** with electricity or fire.

Write each light source in the right column.

the stars · a firefly · a flashlight · lightning · a lamp · a candle · a TV screen · the sun

Natural light	Made by people

Circle True or False.

The moon makes its own light. **True** **False**

We need light to see. **True** **False**

What could you see in a room with no light at all?

_____

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SCIENCE · LIGHT AND SHADOWS · GRADES 2–4

Track a Shadow

Measure the shadow of one object four times in a day, draw it at noon and at three, and explain the change.



Name: _____ **Date:** _____

Set it up: on a sunny morning, stand a stick or a toy on the sidewalk and mark where it sits. Every two hours, trace its shadow with chalk and measure it.

Time	Shadow length (cm)	Which way does it point?	Long or short?
9:00			
11:00			
1:00			
3:00			

Draw the object and its shadow at noon.

Draw the object and its shadow at 3:00.

When was the shadow longest? Why do you think it changed?

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SCIENCE · LIGHT AND SHADOWS · GRADES 2–4

Transparent, Translucent or Opaque?

Sort nine materials by how much light gets through, then circle what makes a shadow.

Name: _____ **Date:** _____



Transparent: light goes right through and you can see clearly. **Translucent**: some light gets through, but things look blurry. **Opaque**: no light gets through.

Write each material in the right column.

a wooden door | a thin tissue | clear plastic wrap | wax paper | a brick wall | frosted glass | water in a glass | a book | a clear window

Transparent	Translucent	Opaque

Circle the answer.

A dark shadow forms when light is blocked by a — transparent / translucent / opaque

You can read a sign through a — transparent / translucent / opaque

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SCIENCE · LIGHT AND SHADOWS · GRADES 2–4

Mirrors and Reflections

Six facts about light and mirrors to mark true or false, then write your name the way a mirror shows it.

Name: _____ **Date:** _____



Light **reflects**, or bounces, off things. Smooth, shiny things like mirrors reflect light so well that you can see a picture in them.

1. Circle True or False.

A mirror reflects light.	True	False
Light travels in straight lines.	True	False
Rough, dark things reflect more light than shiny things.	True	False
We see the moon because it reflects sunlight.	True	False
A mirror image is flipped left to right.	True	False
Light bends a little when it goes from air into water.	True	False

2. Write your name. Then write it the way it looks in a mirror.

_____

_____

_____

3. Draw your face as you see it in a mirror.

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SCIENCE · LIGHT AND SHADOWS · GRADES 1–3

Colors of the Rainbow



Number the seven rainbow colors in order, fill in two sentences about prisms and raindrops, then draw a rainbow.

Name: _____ **Date:** _____

Sunlight looks white, but it is really all the colors mixed together. Raindrops and glass prisms split it into a rainbow, always in the same order.

1. Write 1 to 7 to put the colors in rainbow order, from the outside in.

- ☐ green
- ☐ violet
- ☐ blue
- ☐ indigo
- ☐ red
- ☐ yellow
- ☐ orange

Word bank

prism · bends · rain · seven

1. A _____ is a piece of glass that splits light into colors.
2. Light _____ when it passes through a raindrop.
3. A rainbow has _____ colors.

2. Draw a rainbow and color it in order.

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ANSWER KEY · LIGHT AND SHADOWS · GRADES 1–2

Answer Key: Where Does Light Come From?

Answers for grown-ups. Some questions have more than one good answer.



Some light is **natural**: it comes from nature. Some light is **made by people** with electricity or fire.

Write each light source in the right column.

the stars · a firefly · a flashlight · lightning · a lamp · a candle · a TV screen · the sun

Natural light	Made by people
the sun	a flashlight
lightning	a lamp
the stars	a candle
a firefly	a TV screen

Circle True or False.

The moon makes its own light. **True** / **False**

We need light to see. **True** / **False**

What could you see in a room with no light at all?

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ANSWER KEY · LIGHT AND SHADOWS · GRADES 2–4

Answer Key: Transparent, Translucent or Opaque?

Answers for grown-ups. Some questions have more than one good answer.



Transparent: light goes right through and you can see clearly. **Translucent**: some light gets through, but things look blurry. **Opaque**: no light gets through.

Write each material in the right column.

a wooden door · a thin tissue · clear plastic wrap · wax paper · a brick wall · frosted glass · water in a glass · a book · a clear window

Transparent	Translucent	Opaque
a clear window	wax paper	a brick wall
clear plastic wrap	frosted glass	a wooden door
water in a glass	a thin tissue	a book

Circle the answer.

A dark shadow forms when light is blocked by a — transparent · translucent · **opaque**

You can read a sign through a — **transparent** · translucent · opaque

Art © Kevin Coulston

ANSWER KEY · LIGHT AND SHADOWS · GRADES 2–4

Answer Key: Mirrors and Reflections

Answers for grown-ups. Some questions have more than one good answer.



Light **reflects**, or bounces, off things. Smooth, shiny things like mirrors reflect light so well that you can see a picture in them.

1. Circle True or False.

A mirror reflects light.	**True** / False
Light travels in straight lines.	**True** / False
Rough, dark things reflect more light than shiny things.	True / **False**
We see the moon because it reflects sunlight.	**True** / False
A mirror image is flipped left to right.	**True** / False
Light bends a little when it goes from air into water.	**True** / False

2. Write your name. Then write it the way it looks in a mirror.

3. Draw your face as you see it in a mirror.

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ANSWER KEY · LIGHT AND SHADOWS · GRADES 1–3

Answer Key: Colors of the Rainbow

Answers for grown-ups. Some questions have more than one good answer.



Sunlight looks white, but it is really all the colors mixed together. Raindrops and glass prisms split it into a rainbow, always in the same order.

1. Write 1 to 7 to put the colors in rainbow order, from the outside in.

- 4 green
- 7 violet
- 5 blue
- 6 indigo
- 1 red
- 3 yellow
- 2 orange

Word bank

prism · bends · rain · seven

1. A prism is a piece of glass that splits light into colors.
2. Light bends when it passes through a raindrop.
3. A rainbow has seven colors.

2. Draw a rainbow and color it in order.

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