

# 6th Grade Science 10/14/19

Essential Question: How does light scatter and reflect?

CW: Lesson 7.3 and 7.4

HW: No HW

# Agenda

1. Question of the day
2. Wrap up Lesson 7.2
3. Lesson 7.3 with collaborative study groups

# Open Ended Question

**Write silently for three minutes: Who is someone you consider a friend? What do you like most about them?**

# Open Ended Question

**In Lesson 7.2, what similarities or differences did you see between the sensor readings taken with the mirror and those taken with the paper?**

How would you summarize sensor readings taken with



**Collaborate!**

**How would you summarize the sensor readings taken with the**

How would you summarize sensor readings taken with



**Collaborate!**

**How would you summarize the sensor readings taken with the**



# Poll

## How did the data you collected compare with your predictions?

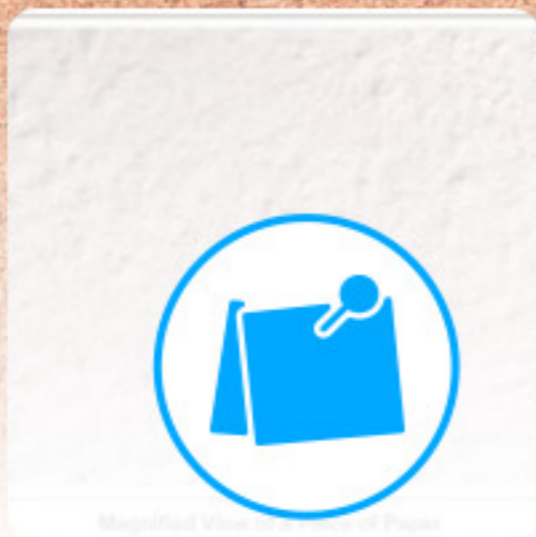
- My data matched my prediction
- My data did not match my prediction, but I understand why
- My data did not match my prediction and I don't know why

# Draw It

**Why do you think we see different patterns in the light reflected off a mirror and the light reflected off a paper? You may draw a picture if it helps explain your answer.**



**Magnified View of a Piece of Paper**



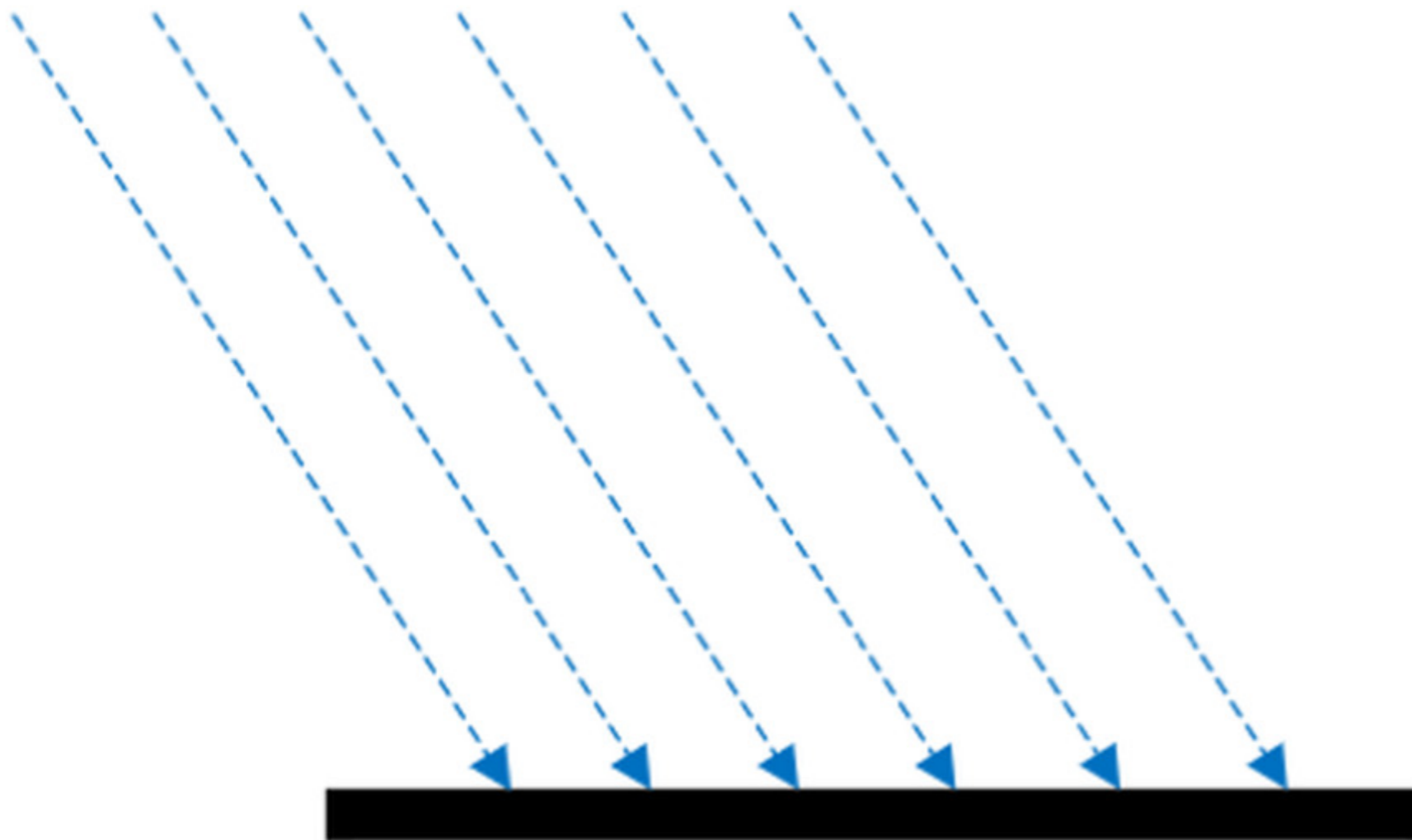
**Collaborate!**

**Given that this is what paper looks like close up, how**

# Draw It

Draw the light rays as they leave the mirror

Light hitting a smooth surface

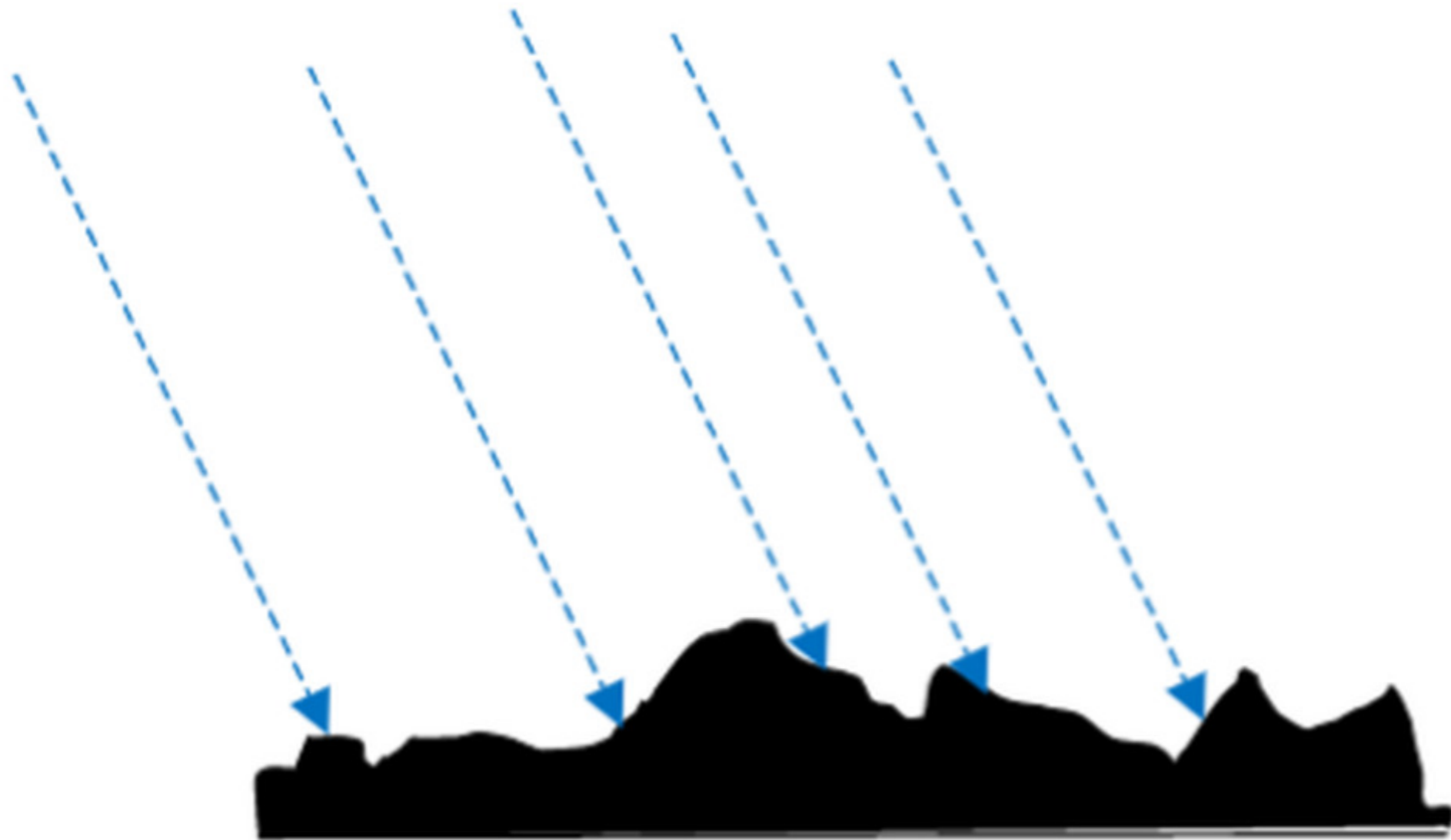




# Draw It

Draw the light rays after they hit a rough surface (such as the paper)

## Light hitting a rough surface



# Lesson 7.3 pg. 64

Green Card - I'm the artist - I can ask and answer questions.  
Everyone else- I can only ask questions and give guiding comments

Possible questions:

How can you show...

Could you add...

... ..

# Lesson 7.3 pg. 65

Green Card - I'm the artist - I can ask and answer questions.

Pink Card - I can only ask questions and give guiding comments

Possible questions:

How can you show...

Could you add...

...

# Academic Words

Reflection

Scattering

# Open Ended Question



**Why can you see an image of yourself in the mirror, but not in the paper?**

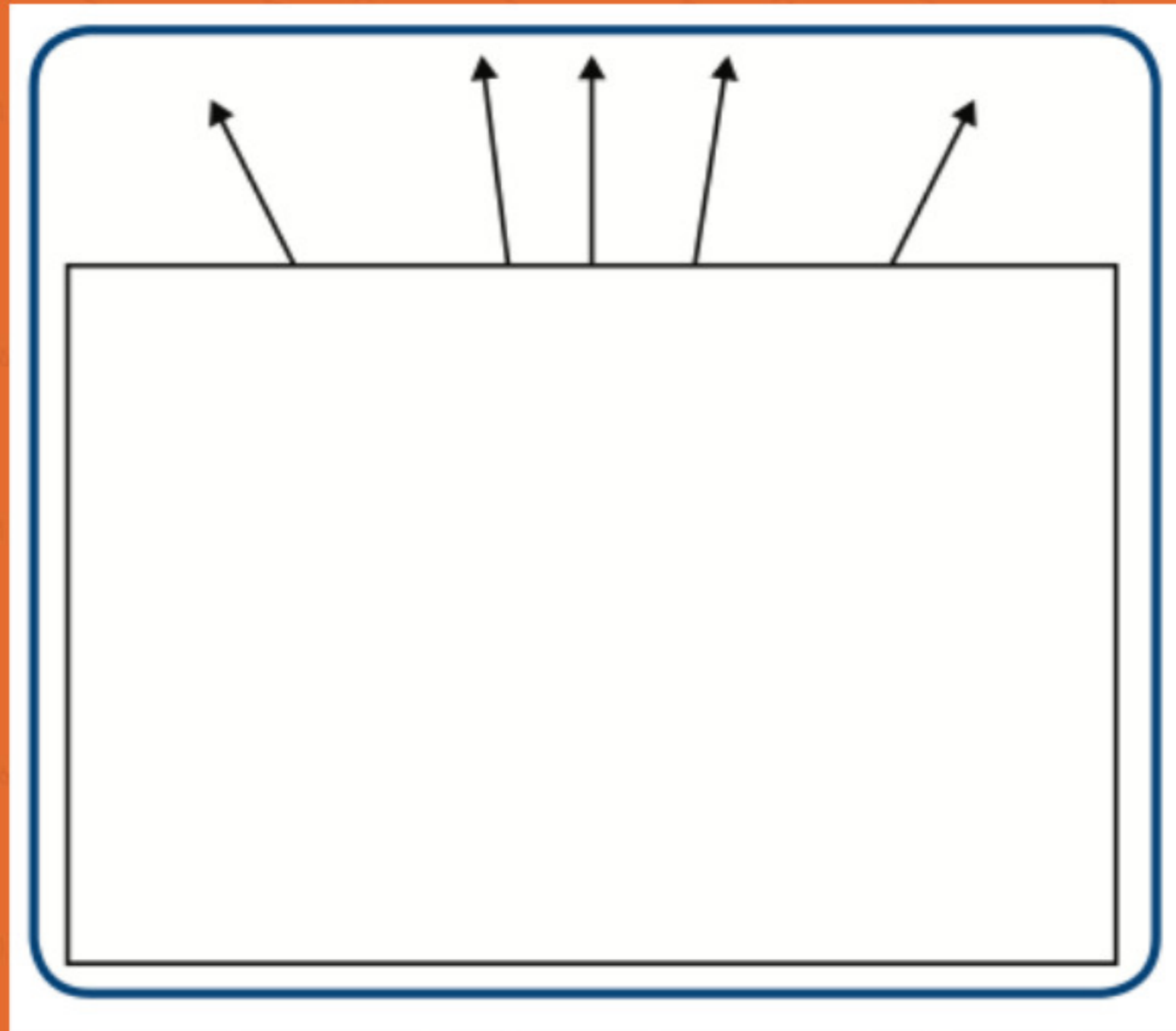
# Lesson 7.4 pg. 66

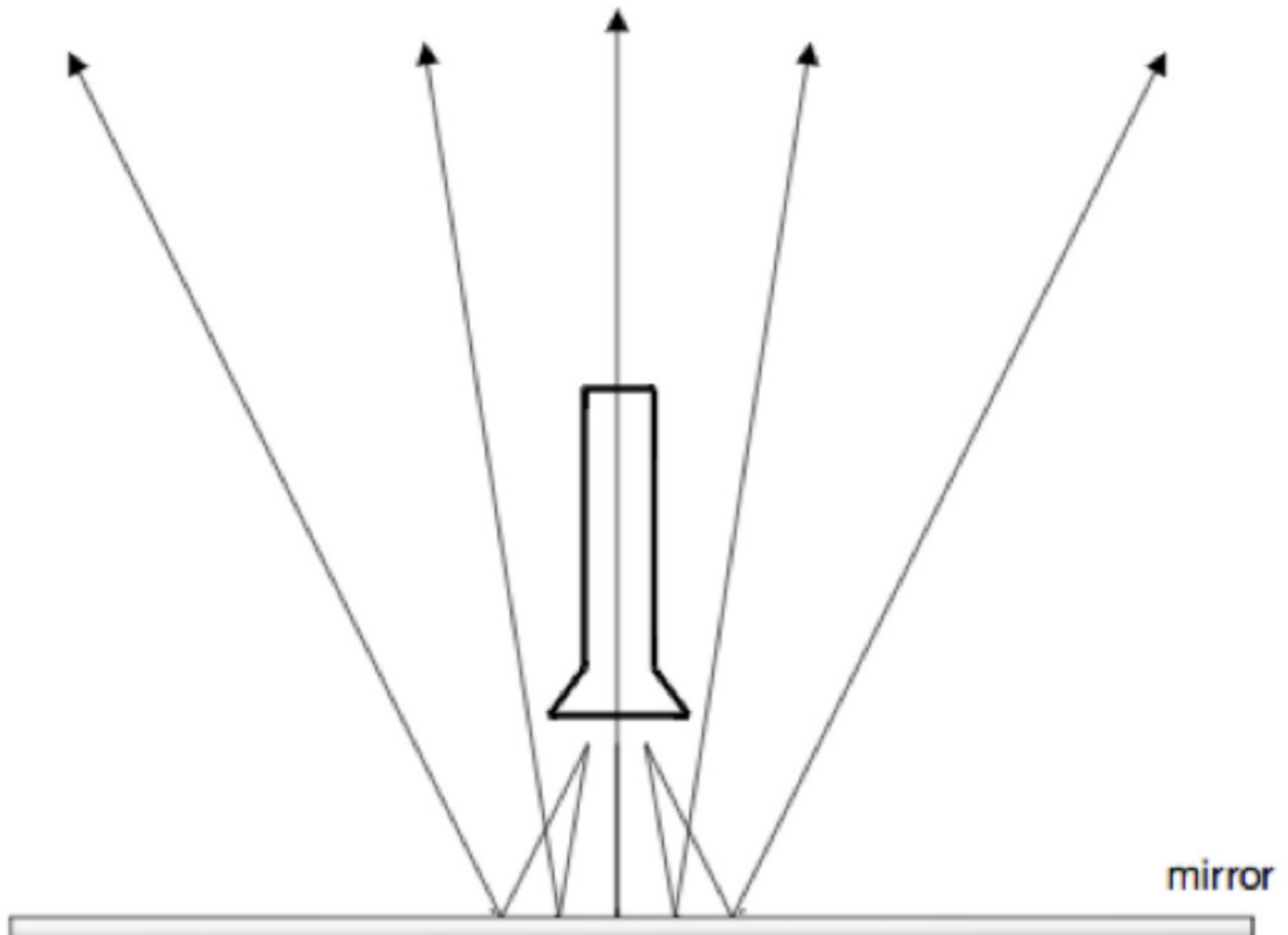
## What Will We Do?

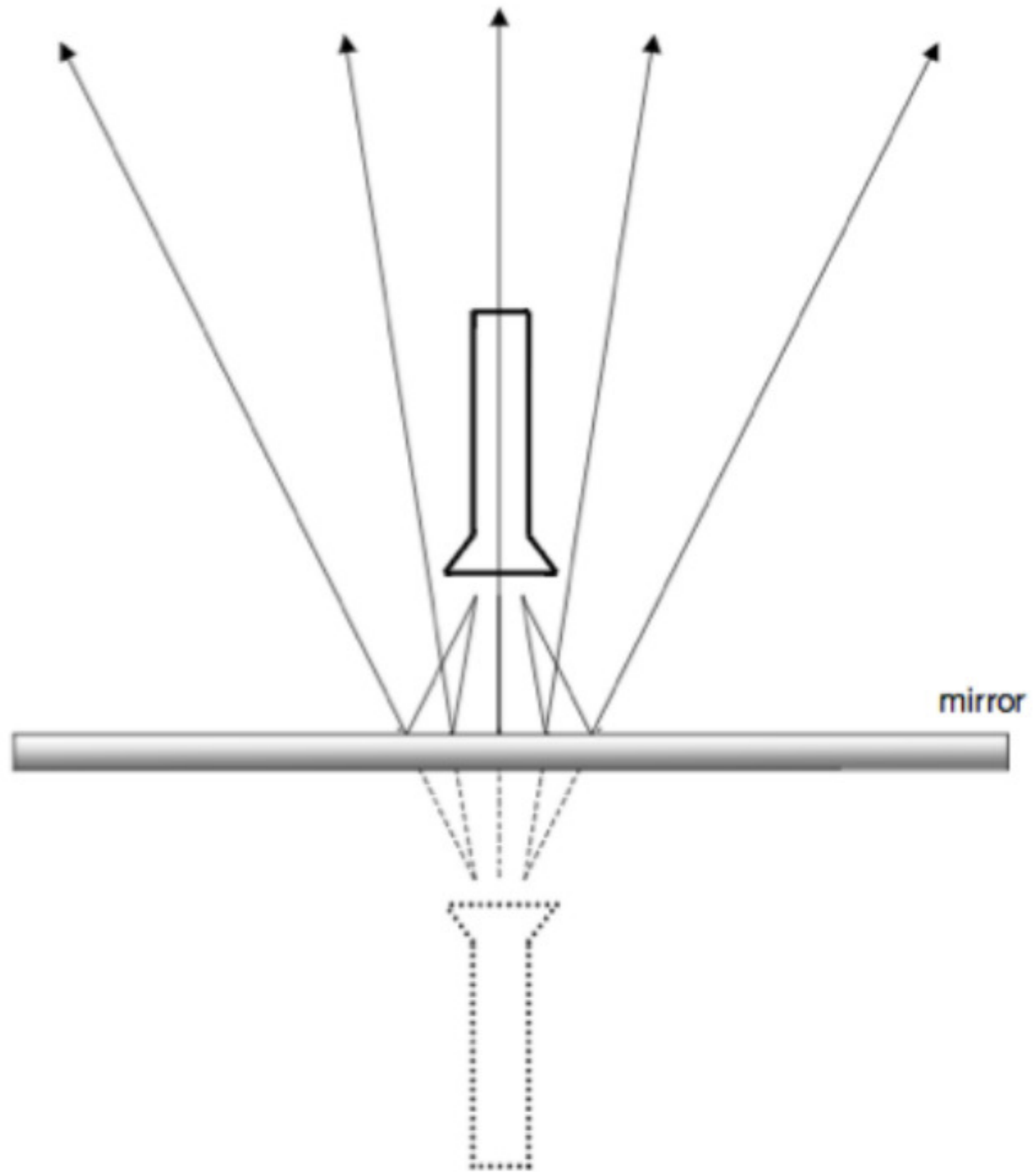
We will use our light model to explain why we can see an image of ourselves in a mirror but we cannot see ourselves in a sheet of paper or wood.



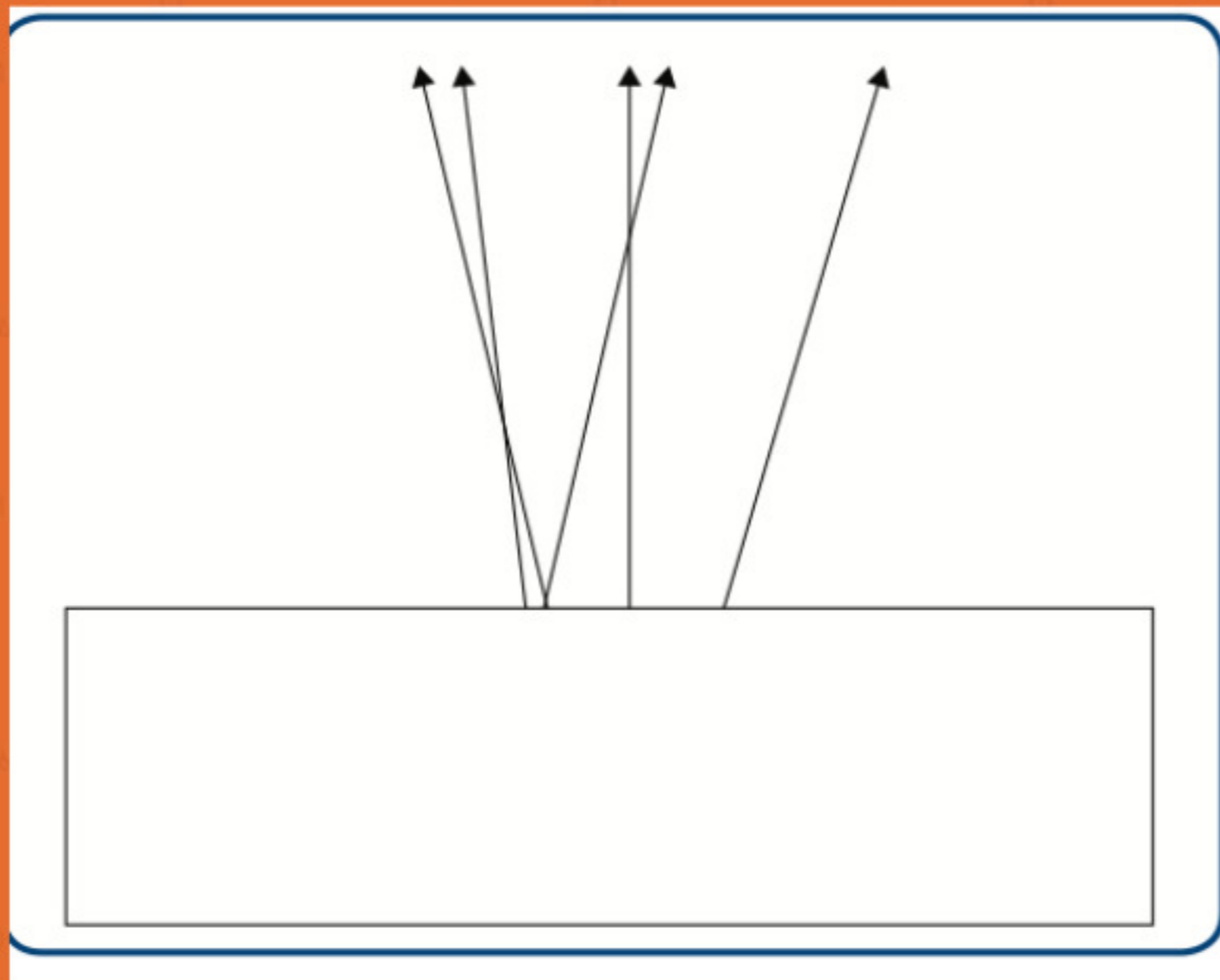
**Based upon the light rays you can see, draw where you think the flashlight is located.**



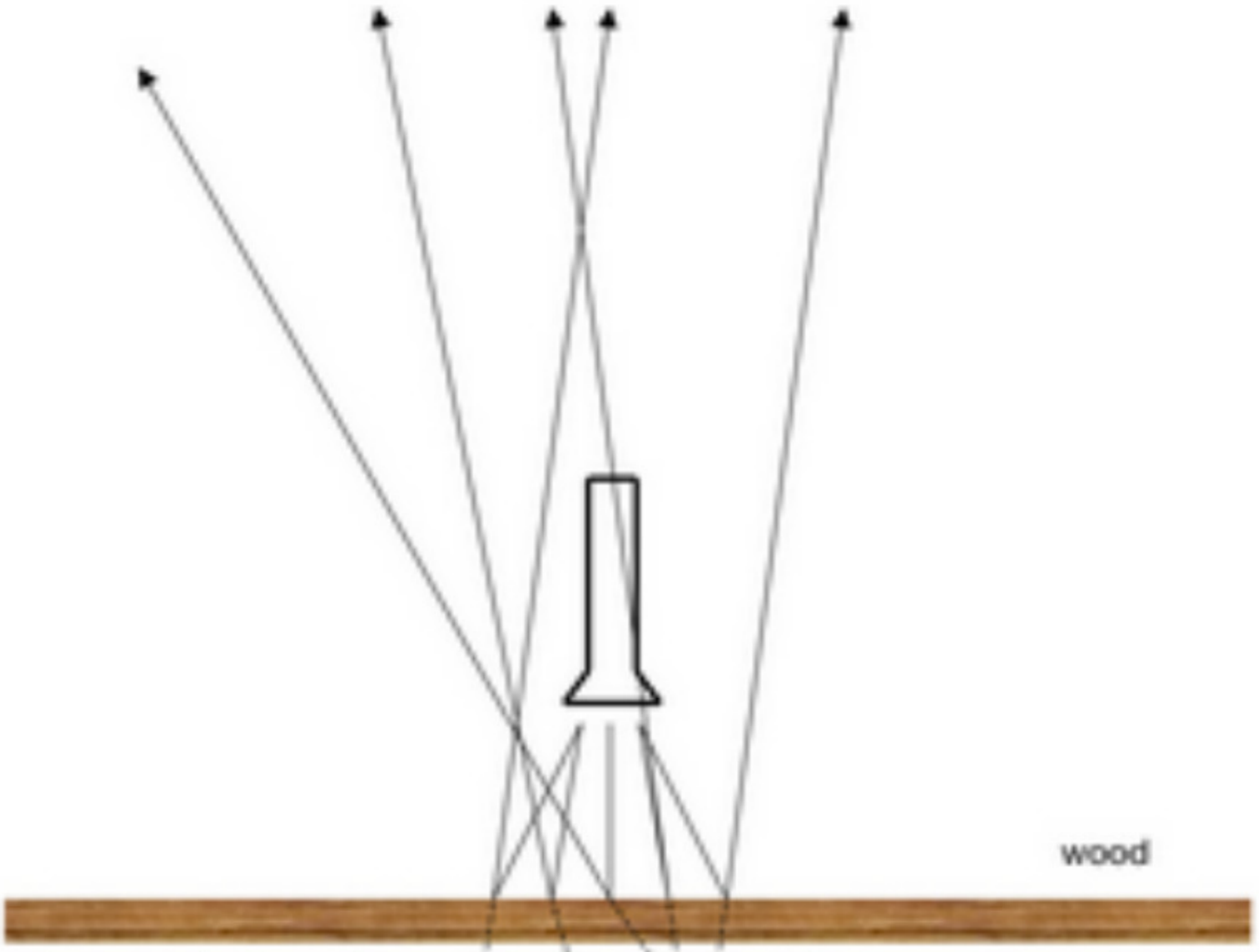




Based upon the light rays you can see, draw where you think the flashlight is located.



# PI: Flashlight Bouncing off wood





This is the back of an iPod music player.  
Notice that you can see a reflection of the camera taking the picture.



This is the back of an iPod music player after the owner has scratched it with steel wool.  
Notice you cannot see a reflection of the camera taking the photograph.

# Open Ended Question

**Explain why you can see your reflection in a mirror but not in a sheet of paper.**



# Quiz

**What are the two ways that light can bounce off an object (that we talked about today)?**

- Reflecting and Scattering
- Transmitting and Heating
- Shining and Sharpening

## What determines whether a surface will reflect light or scatter it?

- A smooth surface scatters, a rough surface reflects
- A smooth surface reflects, a rough surface scatters

## Why can a person see their reflection in a mirror, but not in wood?

- They can see themselves in both
- The wood is smooth, so reflects light back to our eyes letting us see the wood
- The wood is rough, so it scatters light back to our eyes in different directions, which bounces light to our eyes, but changes the pattern so we do not see an image.

# Scientific Principles

4. Scattering - Occurs when light bounces off rough surfaces in all directions

5. Reflection - Occurs when light bounces off smooth surfaces in certain directions