Reflection of light

1 You can have a view of yourself if you look into

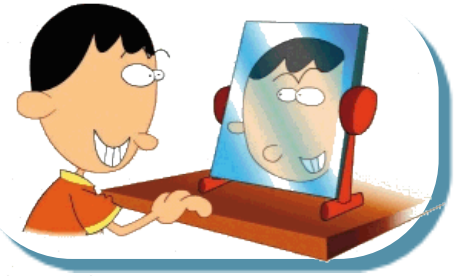
- [x] a mirror.
- [x] calm water surface.
- [x] a piece of shiny metal wall.
- [x] a piece of window glass.

2 Now you look into a mirror and see the image of yourself.

- [ ] In front of the mirror.
- [ ] On the surface of the mirror.
- [x] Behind the mirror.

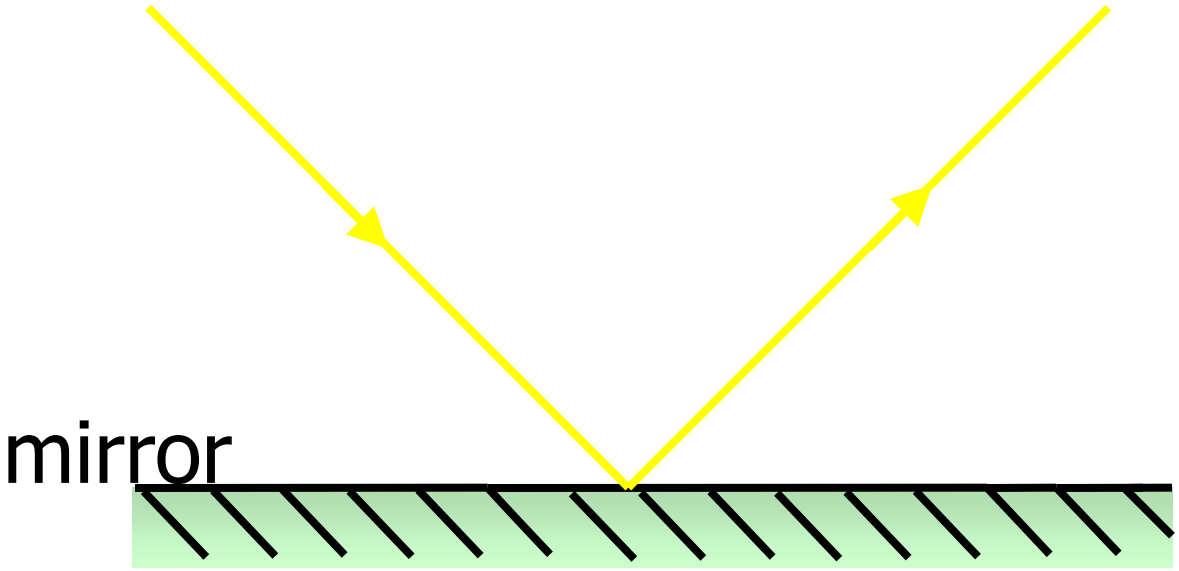
3 Alex says, 'Your mirror image is smaller than yourself'. Do you agree?

- ☐ Yes, the image is really smaller.
- ☑ No, your image and you are always of the same size. It looks smaller just because it is far from you.
- ☐ No, it depends on how far you stand from the mirror.
- ☐ Others: _____.



1 Laws of reflection

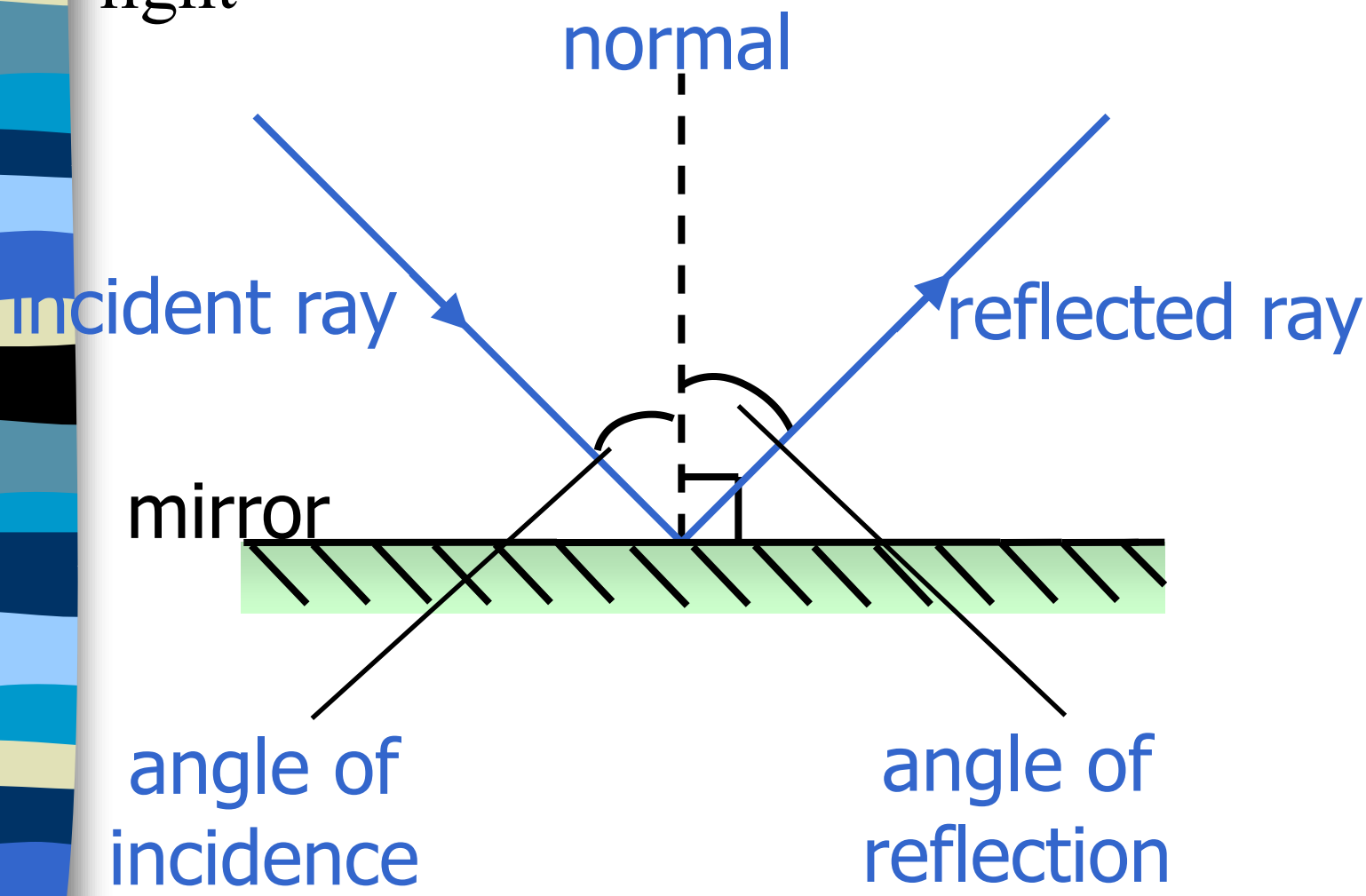
- A ray of light **bounces off** a plane mirror.



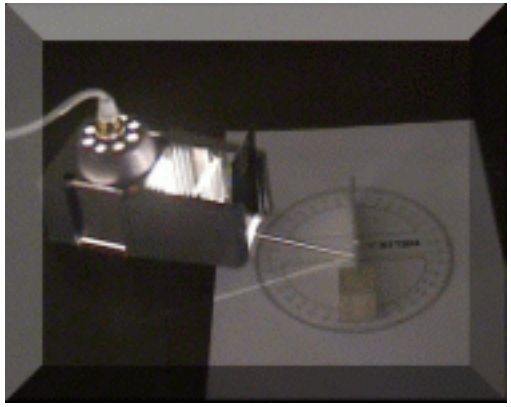
This is an example of reflection of light.

1 Laws of reflection

- useful words to describe the reflection of light



Laws of reflection

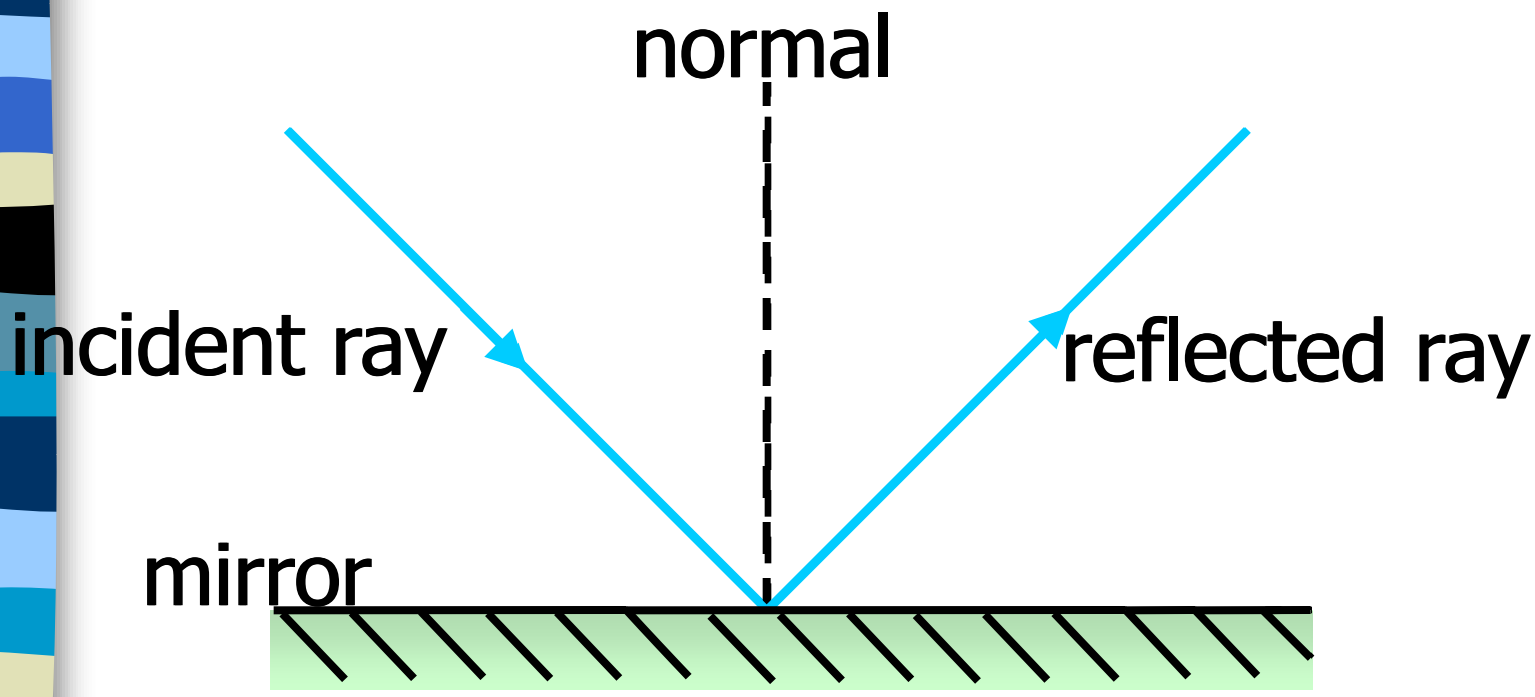


Video

Simulation

Laws of reflection

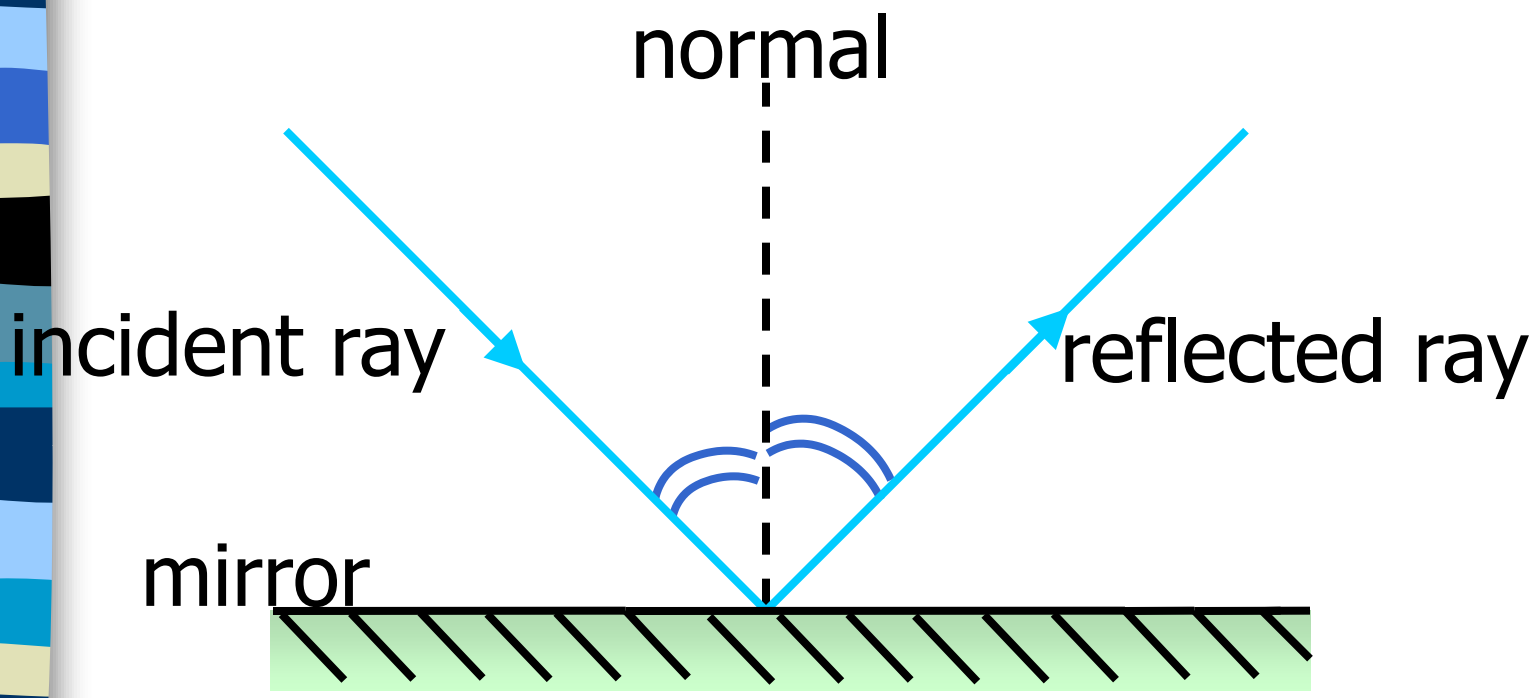
- The incident ray, the reflected ray and the normal all lie in the same plane.



Laws of reflection

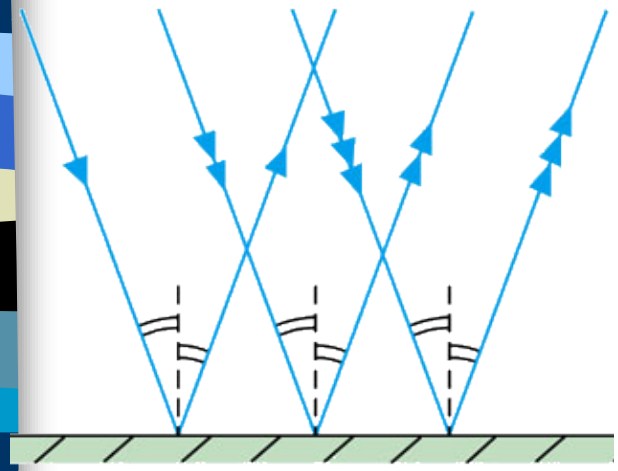
- angle of incidence

= angle of reflection



2 Regular and diffuse reflection

Regular reflection



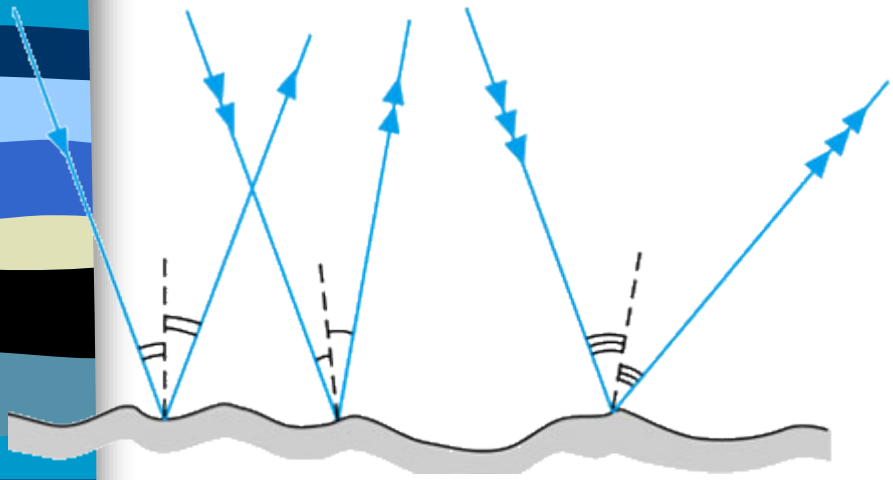
- on a flat, smooth surface
- e.g. mirror

parallel incident rays

parallel reflected rays

2 Regular and diffuse reflection

Diffuse reflection



- on a rough, not perfectly smooth surface
- e.g. cover of a book

parallel incident rays

reflected rays in different directions

Q1 The angle between the…

The angle between the incident ray and the normal is called the angle of incidence.

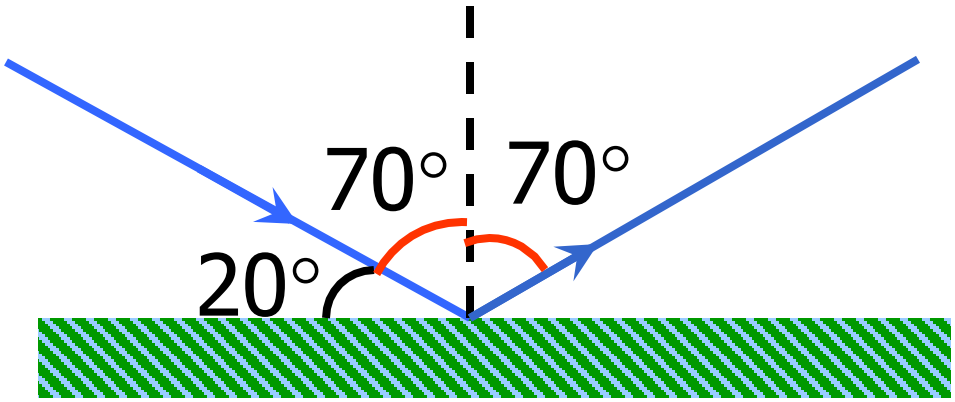
The laws of reflection state that it is equal to the angle of reflection.

Q2 The angle between an…

The angle between an incident ray and the mirror is 20°.

The angles of incidence and reflection are 70 ° and 70 °.

The mirror turns the ray by 140 °.

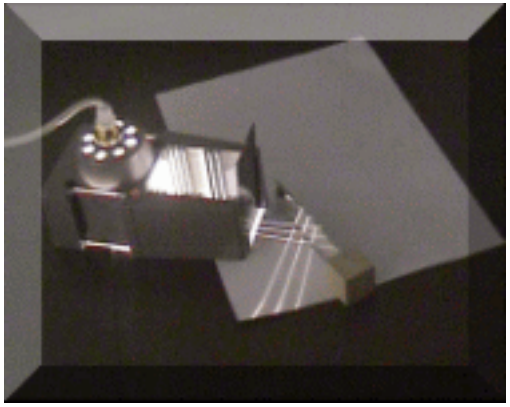


Q3 True or false: Reflection of…

True of false: Reflection of light by a rough surface does not obey the laws of reflection.

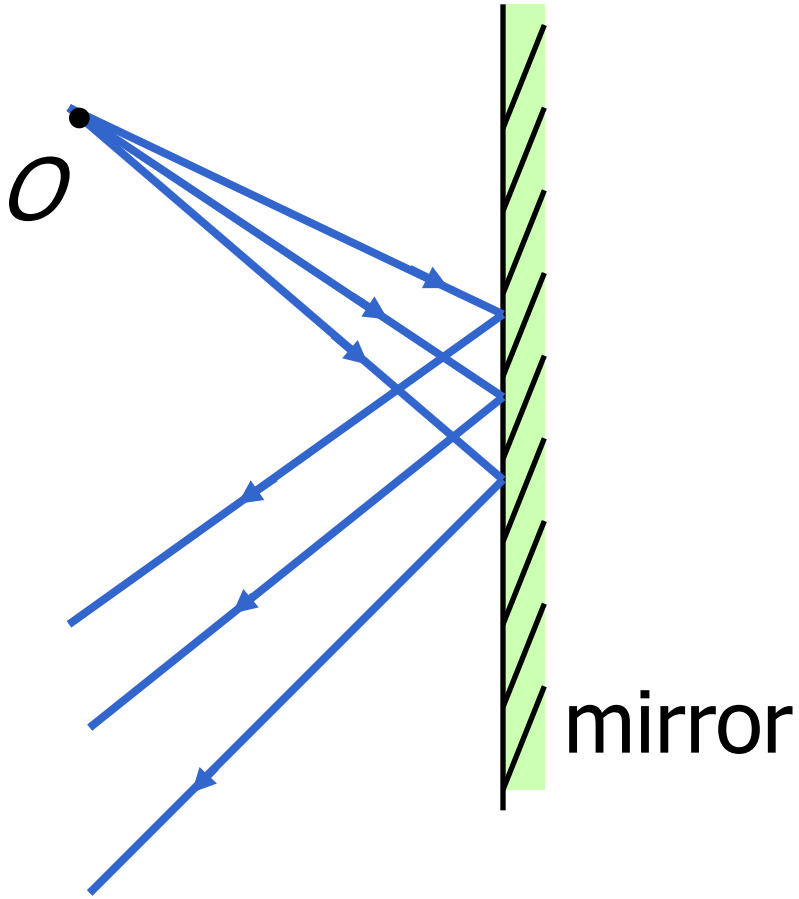
(T/F)

Images formed by a plane mirror



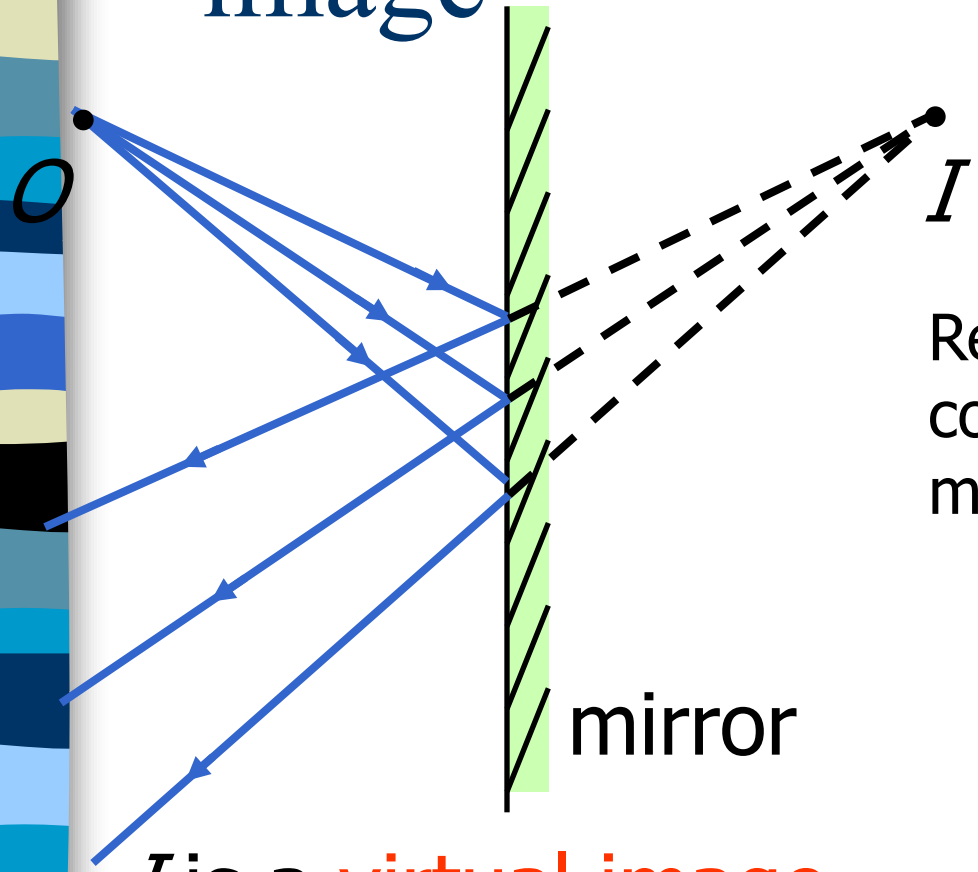
Video

How a plane mirror forms an image



- Rays from object *O* become divergent after reflection.

How a plane mirror forms an image



Reflected rays appear to come from *I* behind the mirror.

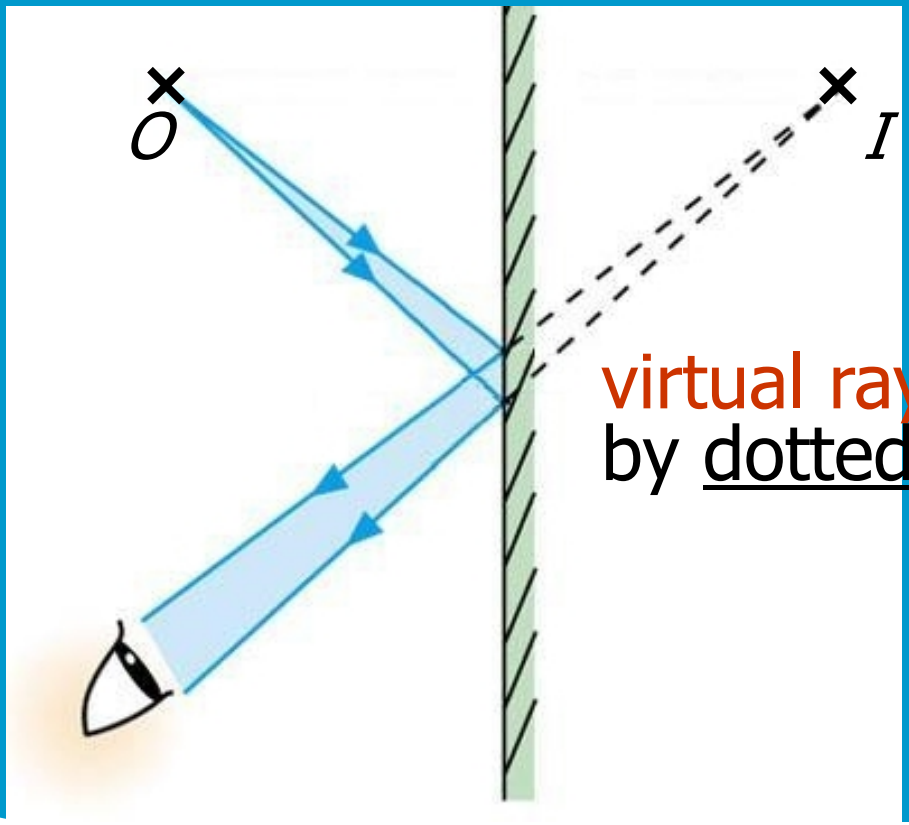
I is a virtual image.

– cannot be picked up on a screen

How a plane mirror forms an image

Locating the position of the image

- by geometric construction



virtual rays shown by dotted lines