

Refraction: Light Changes Direction

Goal • Use this page to review how light bends when it travels from one material to another.

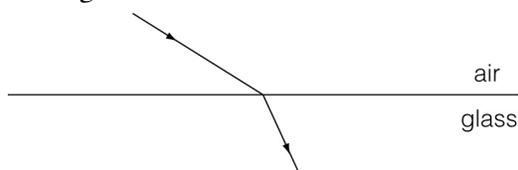
Introduction

When light moves from one medium (such as air) to another (such as water), the light bends. This is called refraction. The light bends because it changes speed when it moves between materials that have different densities.

What to Do

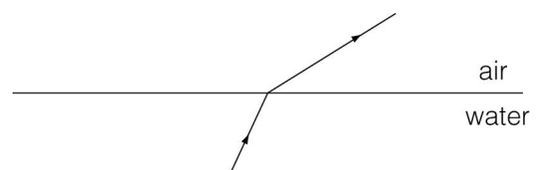
For each diagram, draw the normal at the point of contact. Measure the incident angle and the angle of refraction. Then complete the sentences using *greater*, *less*, *toward*, or *away from*.

1. Air to glass



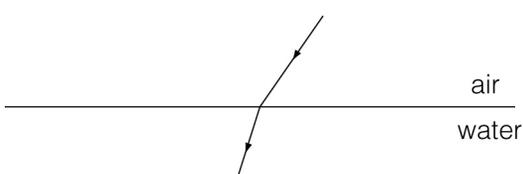
- (a) The angle in air is _____ than the angle in the glass.
- (b) The light entering the glass bends _____ the normal.

2. Water to air



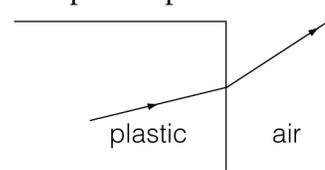
- (a) The angle in air is _____ than the angle in the water.
- (b) The light entering the air bends _____ the normal.

3. Air to water



- (a) The angle in air is _____ than the angle in the water.
- (b) The light entering the water bends _____ the normal.

4. Transparent plastic to air



- (a) The angle in air is _____ than the angle in the plastic.
- (b) The light entering the air bends _____ the normal.

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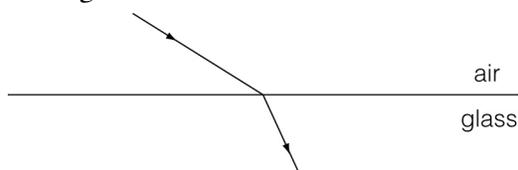
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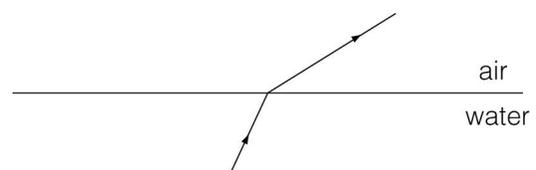
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1. Air to glass



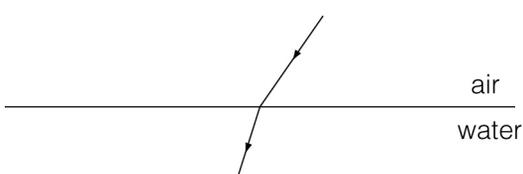
- (a) The angle in air is _____ than the angle in the glass.
- (b) The light entering the glass bends _____ the normal.

2. Water to air



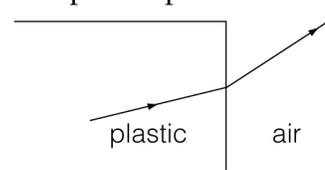
- (a) The angle in air is _____ than the angle in the water.
- (b) The light entering the air bends _____ the normal.

3. Air to water



- (a) The angle in air is _____ than the angle in the water.
- (b) The light entering the water bends _____ the normal.

4. Transparent plastic to air



- (a) The angle in air is _____ than the angle in the plastic.
- (b) The light entering the air bends _____ the normal.