

PRISM WORKSHEET

Path of Light

Reflection · Beam splitters · Prism · Mixing light

Name _____

Class _____

Date _____

How to play

1. Light leaves each source (the square box) in the direction of its small arrow.
2. Each tap turns a mirror, beam splitter or prism 90 degrees clockwise. Crystals and sources never move.
3. The board is solved when every crystal (hexagon) receives light of the color drawn inside it.

Circle the pieces you would turn, then draw the path of the light in pencil.

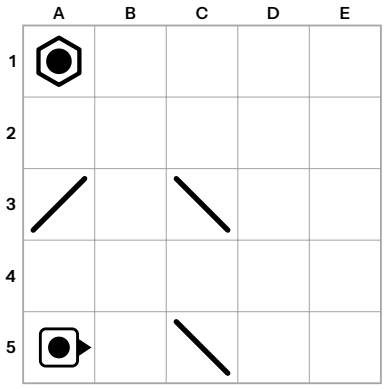
Key

Light source · White light source · Mirror · Beam splitter · Prism · Crystal

▲ red ■ green ● blue

1 Reflection

Send the blue light to the blue crystal. **It takes two taps.**

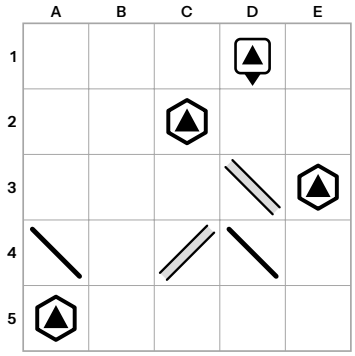


One mirror is already in the right position.

Pieces turned _____

2 Beam splitter Extension

Light all three red crystals with a single red beam. **It takes three taps.**

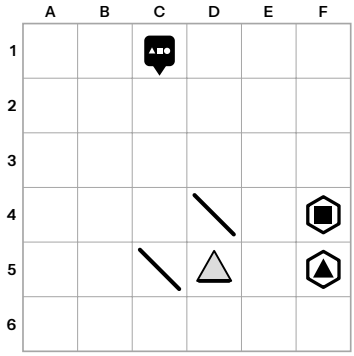


A beam splitter lets light through and reflects it at the same time.

Pieces turned _____

3 Prism

Split white light with the prism to light the green and red crystals. **It takes two taps.**

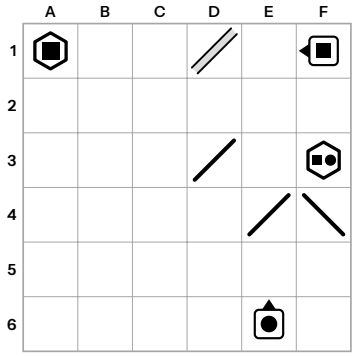


White light must enter through the prism's thick base to split.

Pieces turned _____

4 Mixing light

The cyan crystal (■●) needs green and blue light at the same time. **It takes two taps.**

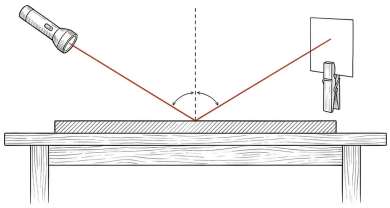


Do not forget the green crystal (■).

Pieces turned _____

These are levels 3, 22, 49 and 92 of the PRISM app.

The physics hidden in the boards

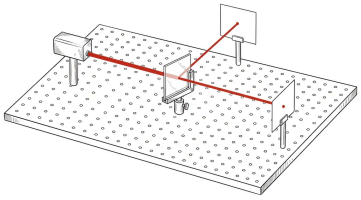


1 Reflection

Light that hits a mirror at a slant bounces off to the other side. A periscope uses two mirrors to turn the light twice, so you can see over a wall.

> **Going further** The angle between the incoming light and the line perpendicular to the mirror (the normal) equals the angle of the outgoing light. That is why a mirror at 45 degrees turns light through 90 degrees.

On board 1, how many times did the light turn before it reached the crystal? By how many degrees did it turn each time?

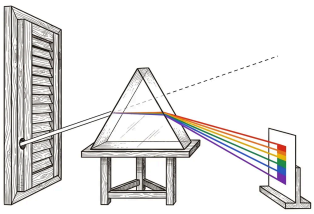


2 Beam splitter Extension

Coat glass with a very thin layer of silver and half the light passes through while half is reflected. Beam splitters are at the heart of LIGO, the instrument that first detected gravitational waves.

On board 2, what fraction of the original light reaches crystals E3, C2 and A5? (Ignore any light the glass absorbs.)

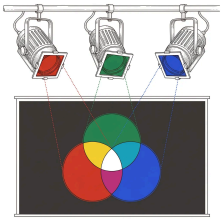
E3 _____ **C2** _____ **A5** _____



3 Prism

White light is a mixture of colors. A prism bends each color by a different amount, red the least and blue and violet the most, so the colors fan apart. Newton used this to show that white light is made of colors. The game simplifies the spread to red, green and blue.

On board 3, where did the blue light go? If there were a blue crystal too, which cell would it need to be on?



4 Mixing light

Paint gets darker as you mix it, but light gets brighter. Your phone screen makes every color from tiny red, green and blue dots.

What color do you get when these lights overlap?

red + green = _____

red + blue = _____

green + blue = _____

red + green + blue = _____

Yellow and blue paint make green. What do yellow and blue light make?

Try it without the app Scan with a phone camera to play chapter 1 (14 levels) in the browser.
prism.adriven.co/play

 CC BY-NC 4.0: share and adapt for non-commercial use, with credit to PRISM by A Driven.

© 2026 A Driven Inc. · PRISM