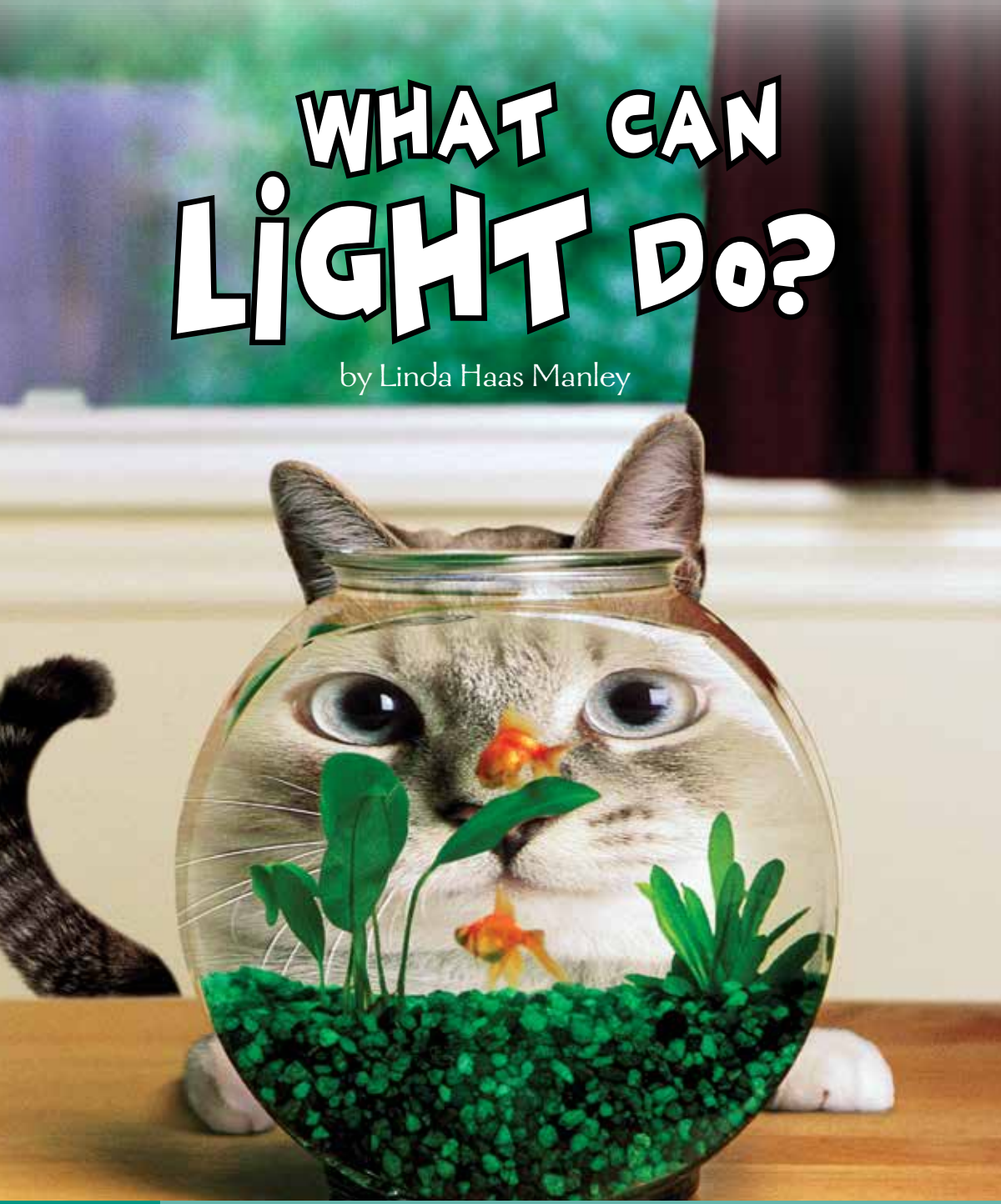
What Can Light Do?

by Linda Haas Manley



P

Amplify Atlas™

Amplify Atlas™

Amplify Education, Inc.
55 Washington Street
Suite 800
Brooklyn, NY 11201
www.amplify.com

What Can Light Do?
Level P
Author: Linda Haas Manley

Image Credits
Cover: Cydney Conger/Corbis/Image Library; p. 1: sbayram/E+/Getty Images; p. 4: Southern Illinois University/Photo Researchers/Getty Images

ISBN: 978-1-941554-50-0

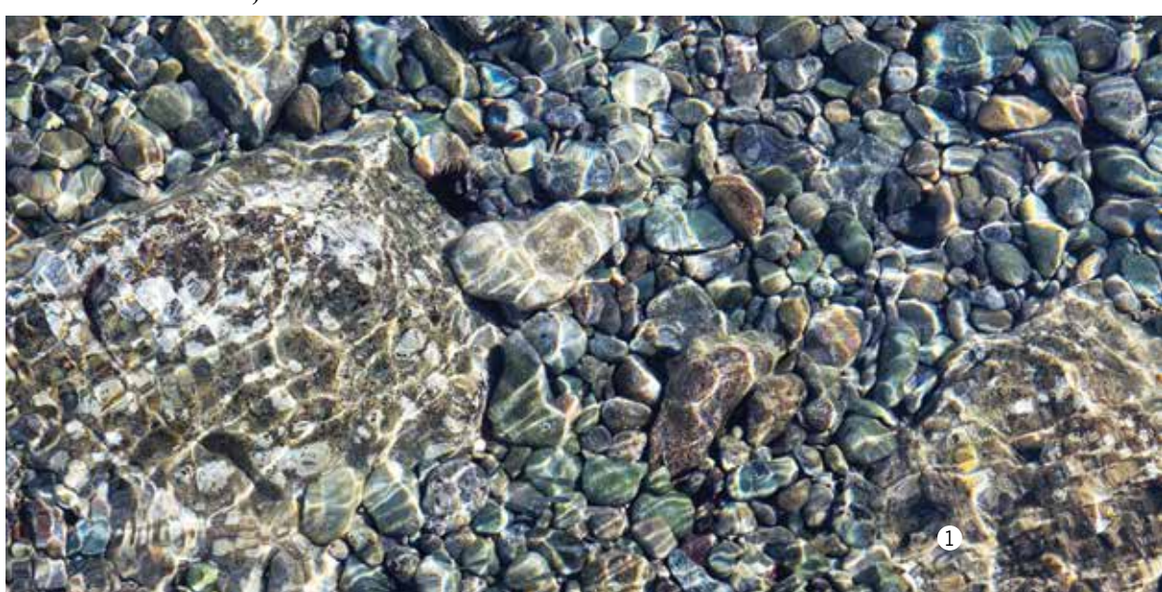
Printed in the United States of America

WHAT CAN LIGHT DO?

by Linda Haas Manley

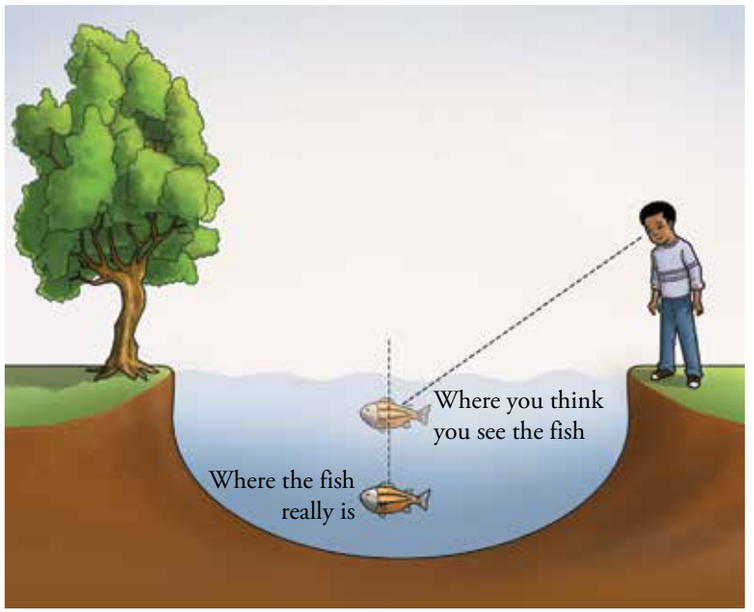
Have you ever put your hand in lake or ocean water to pick up a stone or shell? Did you reach it on the first try? If you missed the object, there is a reason. Objects can look different when they are under water. They can look closer than they really are, and their shape can seem to change. But why does that happen?

Objects look different under water.



Objects in water look different because light travels at different speeds. Its speed depends on the **medium** through which light passes. Air, water, and glass are **transparent**, or see-through, and each can act as a medium. Light changes direction as it moves through one transparent medium into another.

Light travels faster through air than it travels through water. This is because water is more **dense** than air. To understand density, picture a glass full of water. It would be heavier than the same glass full of air. When light travels through water, the denser water changes the light's direction. As the light changes direction, it actually bends! This bending of light can make an object underwater look closer to the **surface**, or top, than it really is.



When light passes through water, objects such as the fish in this picture look closer than they really are.

The bending of light is called **refraction**. You can see how light refracts, or bends, by trying a simple experiment. First, find a clear drinking glass and fill part of it with water. Second, place a pencil in the water. Look at the pencil from the top of the glass. You will see that it looks straight.

The part of the pencil in the water shows refraction.

Next, look at the same pencil from the side. You will notice that the pencil's size and position seem to have changed. In fact, from this new **viewpoint**, the pencil looks bent.

The pencil appears to change because light travels more slowly through water than through air. As light passes through the glass of water, it slows down, changing direction. It is this change in direction that makes the pencil look bent. It is not a trick. It's what light can do!

Glossary

dense (adj.): thick

medium (n.): a material through which light can be seen

refraction (n.): the bending of light as it passes from one material to another

surface (n.): top

transparent (adj.): clear, allowing light to pass through

viewpoint (n.): the place from which a person looks at something

Level P
Informational
What Can Light Do?
Total Running Words: **331**
Lexile: **680L**

Published and distributed by Amplify.

ISBN 978-1-941554-50-0
90000>