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Science

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# An Adventure with Simple Machines

By Renée Carver



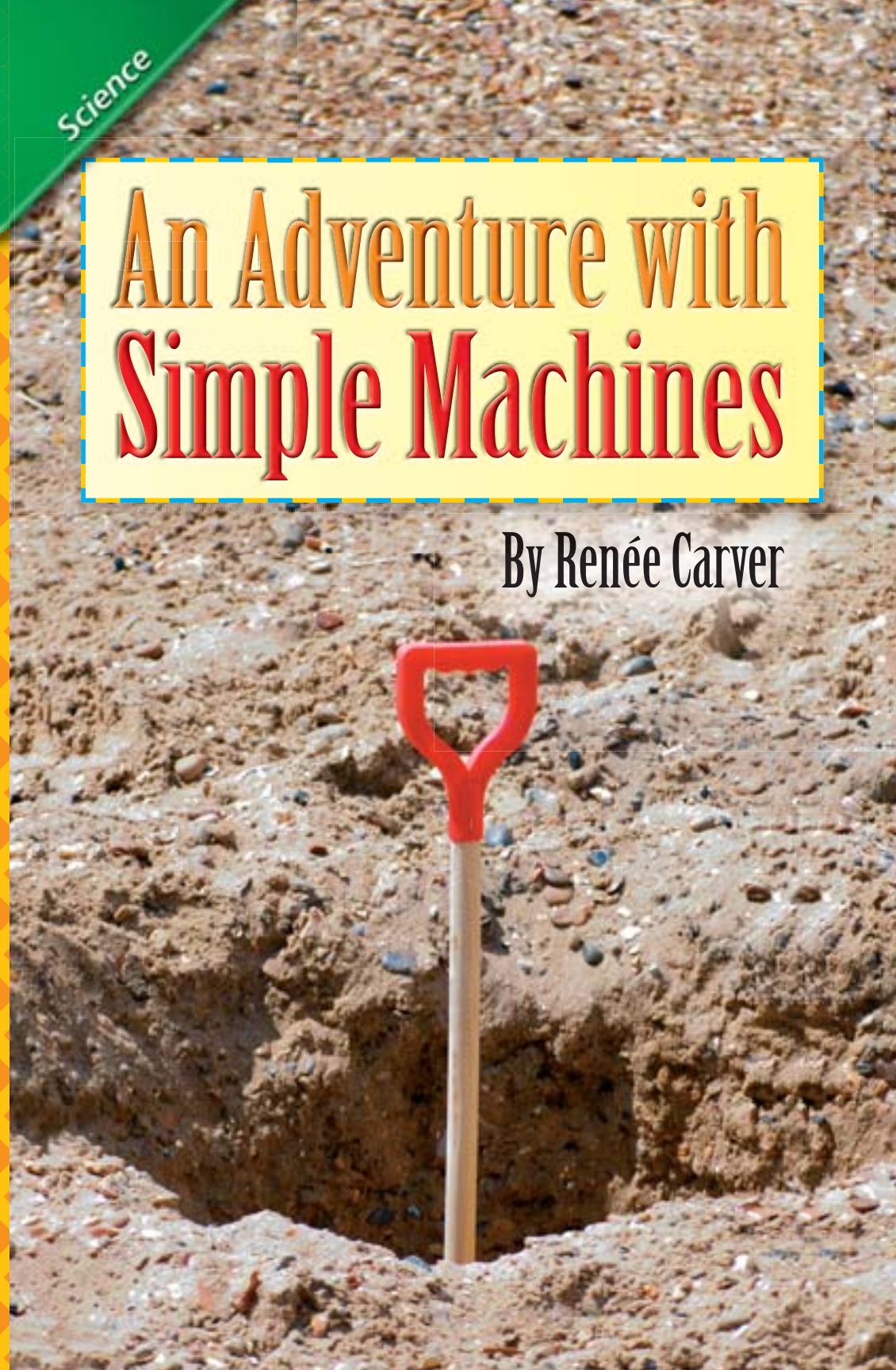
Genre	Concept
Nonfiction	Adventurers

Scott Foresman Reading Street 5.5.1

Scott Foresman  
is an imprint of

PEARSON

ISBN-13: 978-0-328-47262-8  
ISBN-10: 0-328-47262-X



## Concept Words

gravity

inclined plane

lever

machine

pulley

screw

wheel and axle

Word count: 415

Note: The total word count includes words in the running text and headings only. Numerals and words in chapter titles, captions, labels, diagrams, charts, graphs, sidebars, and extra features are not included.

# An Adventure with Simple Machines



By Renée Carver

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Glenview, Illinois • Boston, Massachusetts • Chandler, Arizona •  
Upper Saddle River, New Jersey

Suppose it's an ordinary summer day, and you want to go to the beach. You ask your mom if you can go. Let's also suppose that your big brother, the science nerd, decides to come along. The two of you start off.

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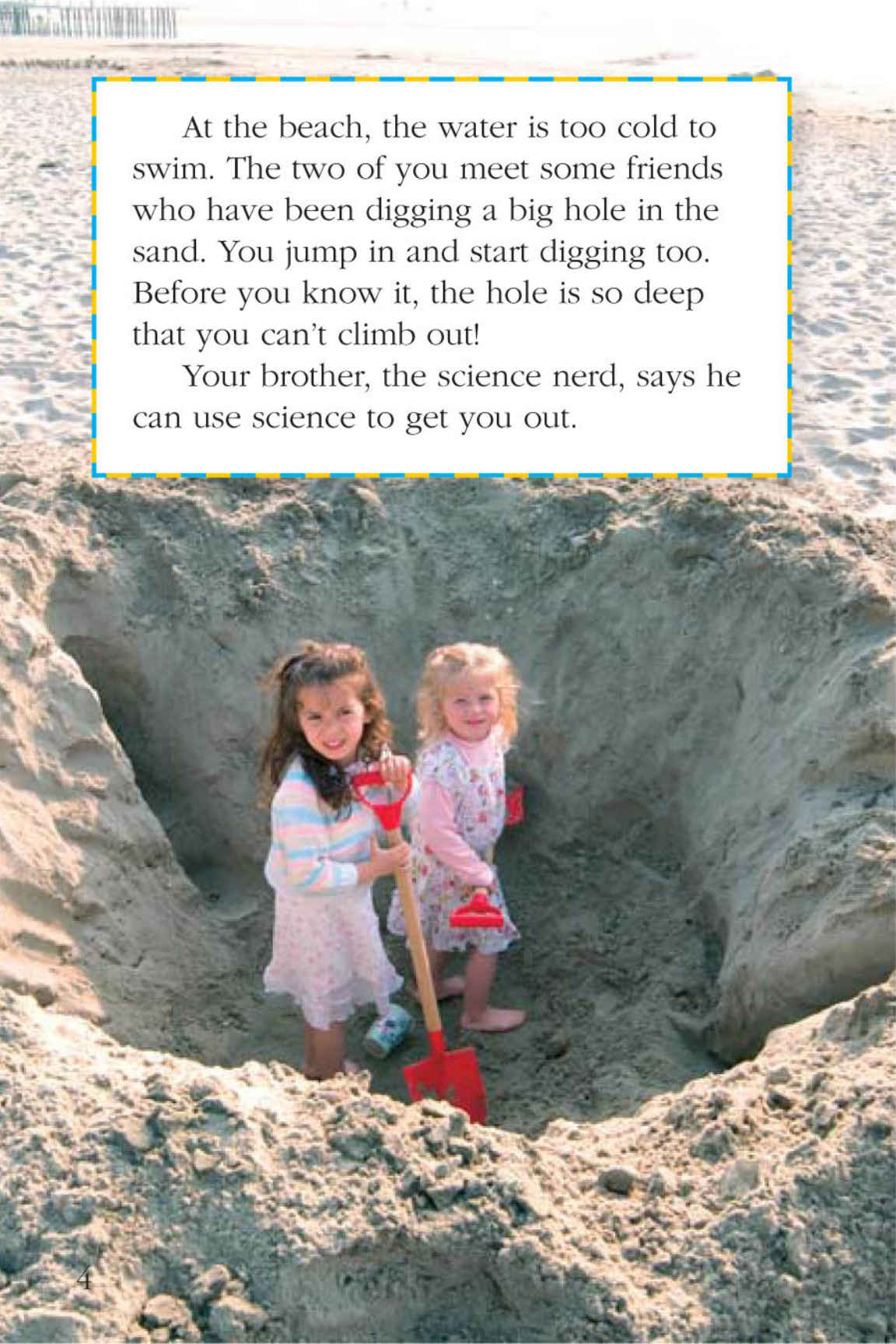
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At the beach, the water is too cold to swim. The two of you meet some friends who have been digging a big hole in the sand. You jump in and start digging too. Before you know it, the hole is so deep that you can't climb out!

Your brother, the science nerd, says he can use science to get you out.



When there is almost no gravity, you can float!

He tells you that gravity pulls everything toward the center of Earth. To get out of the hole, you'll have to overcome gravity. *How do I do that?* you wonder.

There are six simple machines that can help you. When you use these machines, they do a lot of the work for you. They lift or move heavy objects—like you!

Simple machines don't have many moving parts. Some don't have any. Your brother knows all about them. He says he could build something to help you climb out of the hole.

**inclined plane**



**screw**



**pulley**



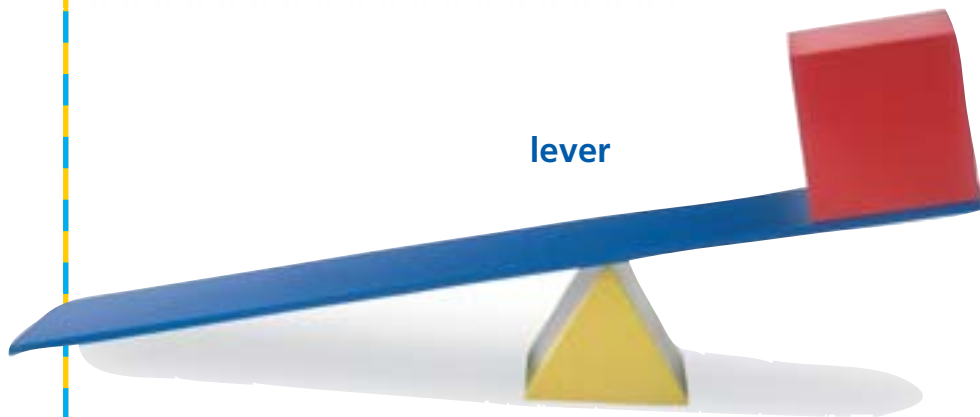
**wheel and axle**



**wedge**



**lever**



He says he could build a ramp to get you out. A ramp is a simple machine called an inclined plane. An inclined plane connects a higher place with a lower place. You know what a ramp is—you use one at the skateboard park to do tricks!



This ramp is a simple machine. What other ramps do you know about?

A ladder is an inclined plane too. You use this machine to get to the top of the slide at the park. A ladder helps you overcome gravity as you go up.



A ladder is an inclined plane.

But your brother is a science nerd, so he says that would be too easy. He says he could build you a spiral staircase instead. Look closely at the lines on this screw. They go around and around a center rod, just like the steps on this staircase.



Then he thinks about a compound machine. A compound machine uses more than one simple machine to do the work. He could use a crane and a pulley to get you out of the hole, he says.

This crane uses wheels and axles to lift things.



# Reader Response

Read Together

But you know a few things about machines too. Sure, he can build all those fancy machines, but you already have one at the beach with you. Remember that shovel? It's a simple machine called a lever. When you push down on one end, the other end lifts up. You can dig yourself out in no time!

1. Tell how one of the simple machines helps overcome gravity.
2. What are some other examples of each kind of simple machine?
3. Describe an ordinary day from your past that turned into an adventure.