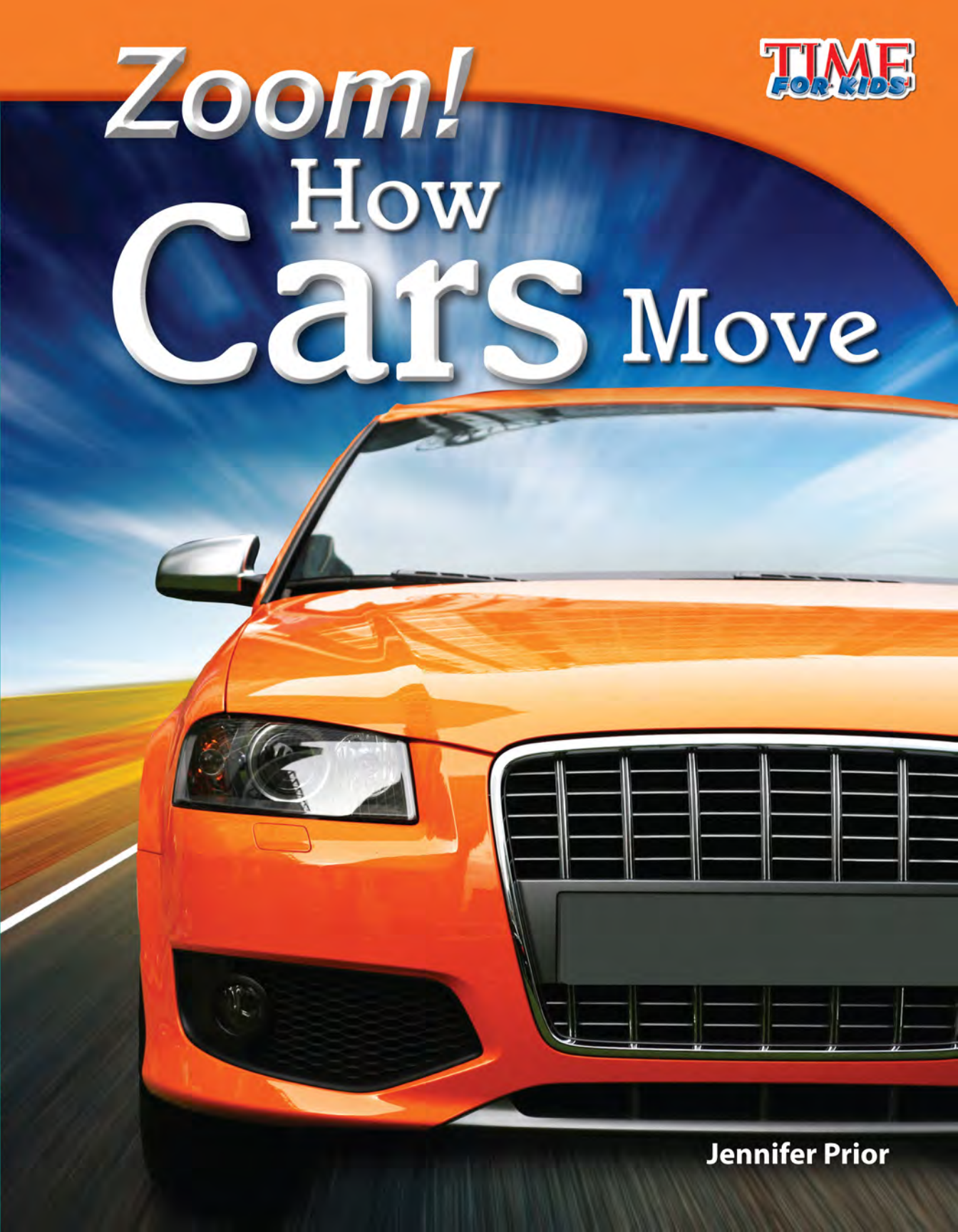
Zoom! How Cars Move



Jennifer Prior

For teachers' inspection ONLY

Consultants

Timothy Rasinski, Ph.D
Kent State University

Alan J. Cross
Automotive Engineer

Publishing Credits

Dona Herweck Rice, *Editor-in-Chief*
Robin Erickson, *Production Director*
Lee Aucoin, *Creative Director*
Conni Medina, M.A.Ed., *Editorial Director*
Jamey Acosta, *Editor*
Heidi Kellenberger, *Editor*
Lexa Hoang, *Designer*
Stephanie Reid, *Photo Editor*
Rachelle Cracchiolo, M.S.Ed., *Publisher*

Image Credits

Cover Dudarev Mikhail/Shutterstock; ben smith/Shutterstock; p.3 Alex Mit/Shutterstock; p.4 Jordan Tan/Shutterstock; p.5 top: joyfull/shutterstock; p.5 inset: mevans/iStockphoto; p.5 caption: kanate/Shutterstock; p.6 top: michaeljung/Shutterstock; p.6 bottom: jan kranendonk/Shutterstock; p.7 top: kirin_photo/iStockphoto; p.7 bottom: Elegeyda/Dreamstime; p.8 akg-images/Newscom; p.9 AFP/Getty Images; p.10 James Steidl/Shutterstock; p.11 top: LOC-LC-USZ62-111278; p.12 AP Photo/Library of Congress; p.13 top: Photolibrary; p.13 bottom: Kenneth William Caleno/Shutterstock; p.14 ArchMan/Shutterstock; p.15 top: Lutsan Pavlo/Shutterstock; p.15 bottom: Jason Swarr/Shutterstock; p.16-17 Andrea Danti/Shuttertstock; ; p.18 elwynn/Shutterstock; p.19 top: Jess Yu/Shutterstock; p.19 bottom: dpa/picture-alliance; p.20 gameanna/Shutterstock; p.20 inset: Alex Mit/Shutterstock; p.21 top: chungking/Shutterstock; p.21 bottom Igumnova Irina/Shutterstock; p.22 right: Calyx22/Dreamstime; p.24 Tyler Olson/Shutterstock; p.25 top: o44/ZUMA Press; p.25 bottom: Paul J. Richards/AFP/Getty Images/Newscom; p.26 top: Photoshot/Newscom; p.26 bottom: Solent News/Splash News; p.28 James Steidl/Shutterstock; background: alekup/Shutterstock; 3DDock/Shutterstock; back cover: mevans/iStockphoto

Based on writing from *TIME For Kids*.

TIME For Kids and the *TIME For Kids* logo are registered trademarks of TIME Inc. Used under license.

Teacher Created Materials
5301 Oceanus Drive
Huntington Beach, CA 92649-1030
http://www.tcmpub.com
ISBN 978-1-4333-3657-7
© 2012 Teacher Created Materials, Inc.

Table of Contents

Cars, Cars, Everywhere 4

Automobile History 8

How Car Engines Work 14

Pollution 18

Automobile Safety 20

Today and Tomorrow 24

Glossary 27

Index 28



Cars, Cars, Everywhere

Fast cars, race cars, cars that are slow,
Big cars, small cars, cars on the go,
Loud cars, quiet cars, cars that jerk and sputter,
When it comes to getting there, cars are like no other!



For teachers' inspection ONLY

Automobile is another word for *car*.

Imagine life without cars. How long would it take to walk to the grocery store? How would you get the groceries home? How far away is the movie theater or the mall?

Cars make our lives easier. They keep us warm and dry as we travel in storms. We can travel long distances in a short time. How many places have you gone in a car this week?





For teachers' inspection ONLY

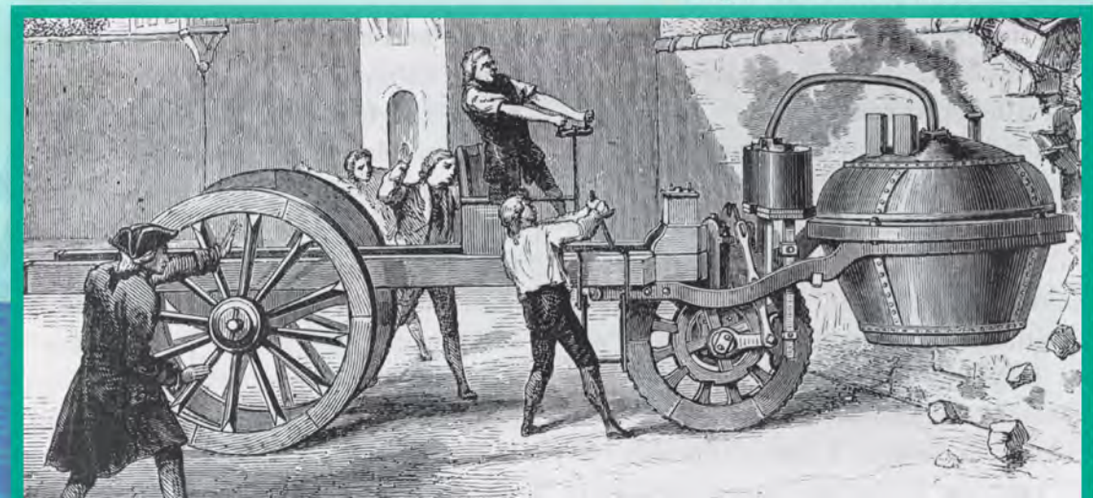
Automobile History

In 1769, Nicolas Cugnot (koon-YOH) made a tractor for the French army. It used steam to move. It had three wheels and went just over two miles per hour.

Sometime between 1832 and 1839, Robert Anderson built the first electric **vehicle** (VEE-ih-kuhl). More electric vehicles were built throughout the 1800s and early 1900s. An electric car built in 1902 could go 14 miles per hour.

But, electric vehicles could not go very far. So, in 1876, Nicolaus Otto invented a gasoline engine that could. In 1885, Gottlieb (GOT-leeb) Daimler (DAHYM-lur) made the engine even better. Then Henry Ford helped make gas-powered cars the car of the future.

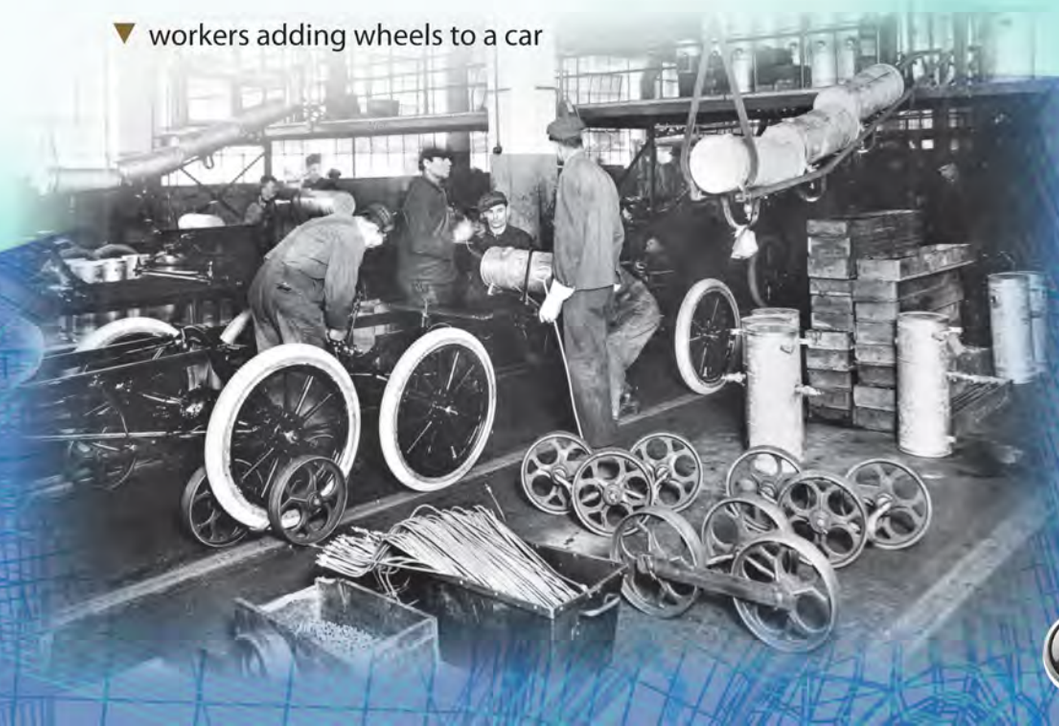
▼ Cugnot's steam vehicle



The Model T

In 1908, Henry Ford built a car called the *Model T*. Only one Model T was built at a time, so they were made very slowly. This made them expensive to buy. So, Ford thought of a different way to make them. He invented **assembly-line production**. That means a car is made by a line of people. Each person in line has a different job to do. They do the same work on every car. He also made the parts for each car the same size and shape, so the parts in one car would fit in another car, too. Cars could be made faster, and that saved money. With assembly lines, a basic Model T cost about $300.

▼ workers adding wheels to a car



For teachers' inspection ONLY