SCHOLASTIC

THREE Ds OF SPEED

DRAG • DOWNFORCE • DRAFTING

During a NASCAR race, racecars can reach speeds of more than 200 miles per hour! Races are won—and lost—by just fractions of a second. To be the first across the finish line, drivers rely on three key aerodynamic principles: drag, downforce, and drafting.

DOWNFORCE

Racecar drivers rely on downforce to help their cars grip the track. Downforce occurs as slow-moving air creates high-pressure areas above the car while fast-moving air creates low-pressure areas below the car. This combination of high and low air pressure pushes the car downward, providing more tire traction and giving the driver better steering control.

DRAG

As a racecar zips along the track, it experiences drag, or air resistance. Air pushing against the car as it moves causes it to lose speed. To fight this slowing force, designers work to create cars that are more streamlined so air flows easily around them.

DRAFTING

During a race, drivers can get a speed boost by lining up their racecars. This is a formation called drafting. When cars draft, the leading car blocks the movement of air, creating low pressure behind it. The low-pressure air creates a vacuum, tugging the trailing car forward while reducing the leading car's drag. As a result, both cars reach higher speeds.

SCHOLASTIC and associated logos are trademarks and/or registered trademarks of Scholastic Inc. All rights reserved. © 2016 NASCAR Inc. All Rights Reserved. NASCAR® and its marks, including NASCAR Acceleration Nation™ are trademarks for the National Association for Stock Car Auto Racing, Inc. All other trademarks are property of their respective owners.