

THREE Ds OF SPEED

LESSON PLAN 3: DRAFTING

GAME CHANGER

TIME REQUIRED: 40 minutes

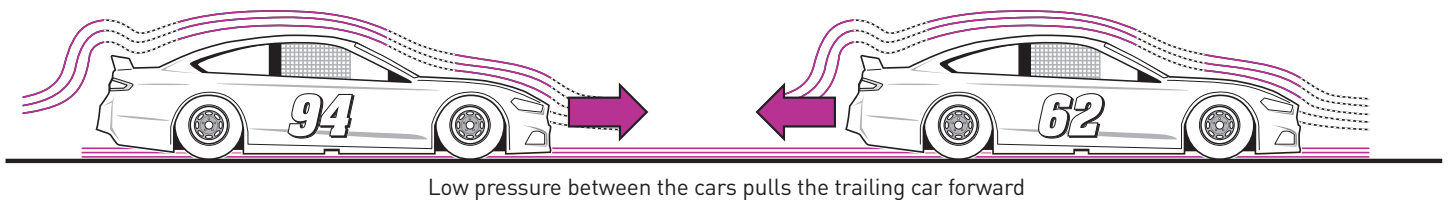
MATERIALS: Recycled or reused drawing paper, poster board or butcher paper, tape, scissors, markers

ACTIVITY AND RESOURCE SHEETS: Lesson Plan 3 (to project Drafting diagram), Drafting Activity Sheet, Resource Sheet A.

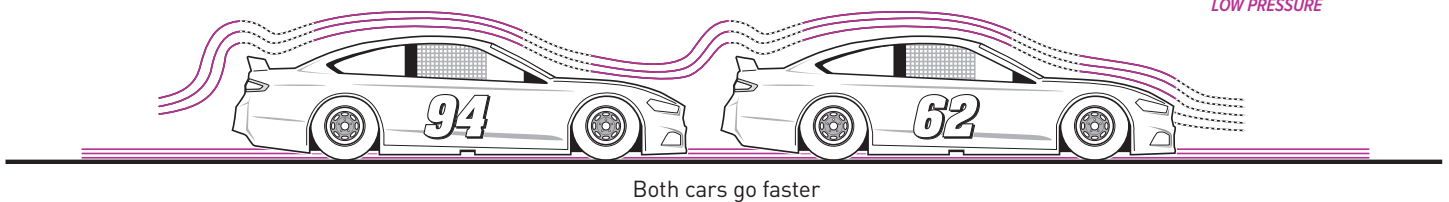
Download additional sheets as needed at scholastic.com/nascarspeed.

VIDEO: View the *The Art of Drafting* video at scholastic.com/nascarspeed.

DRAFTING STAGE 1:



DRAFTING STAGE 2:



Central question:
What is drafting?

1. In addition to the NASCAR racecar adaptations we've discussed, drivers use a technique called **drafting** to gain a boost in speed on the track. Drafting is a driving strategy where racecars improve the performance of their vehicles by closely lining up one behind the other.

Video Connection

Show students the drafting video at: scholastic.com/nascarspeed.

2. Explain that the science behind drafting relies on **Bernoulli's principle**. When racecars draft, the leading car blocks the air, creating an area of low pressure behind it. The low pressure pulls the trailing car forward toward the leading car. This pushes the high-pressure air over the lead car's spoiler, reducing its drag. The result allows both

cars to go a few miles per hour faster. Project the above diagram to demonstrate the aerodynamics of drafting to students.

3. Hand out the *Drafting Activity Sheet*, where students will read a passage about the history of drafting, followed by questions to assess their reading comprehension. (Answers: 1. C; 2. A; 3. D; 4. It looks like two or more cars trailing each other with just inches between them; 5. "The more cars that are grouped in a drafting formation, the faster they all will go.")



Central question:
How does drafting help cars travel faster?

PIT CREW CHALLENGE

1. Provide pit crews with poster board or butcher paper, tape, scissors, markers, and *Resource Sheet A*.

2. Instruct them to draw and cut out racecars to make a poster that includes:
 - a racetrack with three or more racecars
 - examples of drag, downforce, and drafting
 - arrows that show how air pressure acts on racecars
 - labels demonstrating spoilers, splitters, and other adaptations

AFTER THE UNIT: Once you have finished all three lessons, have students complete the post-assessment and compare their responses to the pre-assessment.

POST-ASSESSMENT ANSWER KEY:
1. B; 2. D; 3. A; 4. C; 5. B; 6. A; 7. B; 8. B; 9. D; 10. A