

NAME _____

⚡ UNDER THE HOOD ⚡

NASCAR race cars are superfast—but there’s a limiting factor to their speed. For safety reasons, NASCAR officials have reduced just how fast race cars can go. Read the passage below to find out how this happened. Then answer the associated questions.

SPEED LIMIT

In 1987, Bill Elliott set the NASCAR speed record. His race car reached 212 miles per hour while qualifying for the Winston 500 at the Talladega Superspeedway in Alabama. Why has no other racer topped this feat since?



BILL ELLIOTT

During the actual 1987 Winston 500, the car of another driver named Bobby Allison went airborne and crashed into a fence at 210 mph. After that, NASCAR put safety measures in place to prevent similar high-speed crashes.

In 1988, NASCAR began to require the use of restrictor plates on all race cars during superspeedway races. A restrictor plate is a square piece of aluminum with four holes drilled into it. Each hole is about the size of a quarter. The plate reduces the flow of air and fuel into a car’s engine. With less fuel to burn, the cars go slower.

All teams must have identical restrictor plates at the start of a race. NASCAR distributes them before the race and collects them when it is over. Some people believe that without restrictor plates, NASCAR racers could go more than 220 mph. In fact, one car tested at Talladega without a restrictor plate reached a speed of 228 mph, exceeding Bill Elliott’s record by 16 mph.

For each question, provide an answer and an explanation of how you arrived at your response.

1 What is the source of potential energy in a race car’s engine?

2 What happens to the source of potential energy when a restrictor plate is added to the race car?

3 How can you infer that restrictor plates work to slow race cars?

4 What prompted NASCAR to use restrictor plates at superspeedways?

5 Why do NASCAR officials give all teams identical restrictor plates at the start of a race and collect them at the end?
