

QUIZ

Zero to sustainability: Test your hybrid car IQ



How hip to hybrid cars are you?

Hybrid cars are more plentiful, advanced and efficient than ever, with dozens of options now available to consumers. These fuel-saving, emissions-cutting vehicles currently make up 3% of the total car and light truck market in the United States, helping to meet the government's tougher fuel-economy standards. But how much do you know about how hybrid cars work, and the benefits they can have for the environment? Take this quiz to find out.

Q: When was the first hybrid vehicle invented?

Options: 1900, 1926, 1959, 1982

A: 1900

Long before Toyota dreamed up the Prius, Professor Ferdinand Porsche developed the world's first fully-functional hybrid vehicle. In the year 1900, Porsche combined the battery-powered wheel hub drive from his electric car, the Lohner-Porsche, with a petrol engine. By 1902, the two-seat Lohner-Porsche Mixte became available to the public, though only eleven sold due to the high sales price.

Q: True or false: most hybrid vehicles get their power by plugging into the grid.

A: False

While some 'full hybrid' vehicles get all of their power from the grid, most capture kinetic energy through regenerative braking, which uses the electric motor to help stop the car. The motor acts as a generator, recovering some of the kinetic energy from the car's movement and storing it in the battery.

Q: How much fuel can hybrids save compared to conventional vehicles?

Options: 7%, 10%, 35%, 47%

A: 35%

Hybrids don't just save fuel thanks to their dual gasoline-electric engines; they're also lighter in weight and feature highly engineered computer-controlled parts like motors, generators and transmissions that are simply more efficient than those in conventional vehicles.

Q: True or false: the pollution created when building a hybrid car offsets the emissions-cutting benefits.

A: False

While it's true that [10 to 20 percent of a vehicle's total lifetime greenhouse gas emissions are released during the manufacturing stage](#), and hybrid cars sometimes require more energy during production than gas-only models due to more advanced components, these factors don't erase the other environmental benefits of owning a hybrid. Those advanced components last longer, resulting in less waste, and conventional cars [still require more energy input over the lifetime of the vehicle](#).

Q: Just how fast can hybrid cars go?

Options: 136 mph, 158 mph, 186 mph, 220 mph

A: 186 mph

The 2013 Volkswagen Jetta Hybrid became the world's fastest hybrid car during the Bonneville Speed Week in August 2012, clocking 186.313 mph over two runs to eclipse the previous record by 18.8 mph. The combined output of the 1.4-liter turbocharged, direct-injection four-cylinder TSI engine is 170 horsepower with 184 pound-feet of torque.

Q: True or false: the batteries of hybrid vehicles are prohibitively expensive and only last a couple years.

A: False

This pervasive myth leads potential buyers of hybrid cars to worry about high maintenance costs, but it's just not true. Automakers have extended the longevity of nickel metal hydride batteries by keeping the charge between 40 and 60 percent. Extended warranties cover the batteries for up to 100,000 miles, and some manufacturers offer lifetime warranties.

Q: In a parallel hybrid, the car gets its power from...

Options: A gas engine running an electric motor that acts as a generator, A gas engine with a separate generator connected to the engine, A gas engine and electric motor that can independently turn the wheels.

A: A gas engine and electric motor that can independently turn the wheels

Parallel hybrid cars use both the electric motor and the gas combustion engine to power the vehicle, with both connected to the transmission. Each can independently turn the car's wheels. A controller in the transmission determines when to use the electric motor, and when to switch to the gas engine.

Q: True or false: hybrid cars are the answer to our most pressing transportation- and energy-related environmental problems.

A: False

Hybrid technology saves energy and can produce less waste in the long run thanks to more durable parts, but it's only a partial solution to cutting greenhouse gas emissions and reducing energy consumption. Greener personal vehicles must be used in tandem with highly efficient, eco-friendly public transit, new renewable energy technologies and other initiatives to make a significant difference in tackling the world's most pressing environmental issues.

Scores:

1/8: Gas guzzler!

2/8: Not the greenest!

3/8: Close, but not quite!

4/8: Speed it up!

5/8: Getting good mileage!

6/8: Sustainability smarts!

7/8: Hip to hybrids!

8/8: Green car genius!

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