



H2 and You *Hydrogen Basics* Quiz

1. What is the only by-product of hydrogen fuel-cells?
 - a. Carbon Dioxide (CO₂, which is a greenhouse gas)
 - b. Nothing
 - c. Water vapor
 - d. Helium

2. What is the most common element in the world?
 - a. Hydrogen
 - b. Oxygen
 - c. Helium
 - d. Carbon

3. You can use a hydrogen fuel cell to power _____
 - a. Cars/Busses
 - b. Fork-lifts
 - c. Cell phones
 - d. Buildings
 - e. All of the above

4. A hydrogen fuel cell is _____ times more efficient than an engine
 - a. 1
 - b. 2-3
 - c. 7-8
 - d. 10

5. How many hydrogen fueling stations are operational in the U.S.?
 - a. 8
 - b. 100
 - c. 12
 - d. 68

6. True or false: hydrogen is an energy source.
 - a. True
 - b. False

7. What can you produce hydrogen from?
 - a. Water
 - b. Plants
 - c. Natural gas
 - d. Coal

e. All of the above and more

8. In what form can you store hydrogen?

- a. Gas
- b. Liquid
- c. Solid
- d. All of the above

9. True/False: hydrogen fuel cell vehicles are electric vehicles

- a. False
- b. True

10. How long does it take to fill your car's hydrogen tank at a fueling station?

- a. 3-5 minutes
- b. 8 minutes
- c. 15 minutes
- d. about 60 minutes

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Answer Sheet

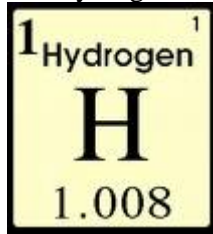
1. C. Water vapor

- Water vapor is the only by-product of a hydrogen fuel-cell. In fact, water vapor is the only thing that comes out of the exhaust of a hydrogen fuel cell vehicle.



2. a. Hydrogen

- Hydrogen is the most common element in the world



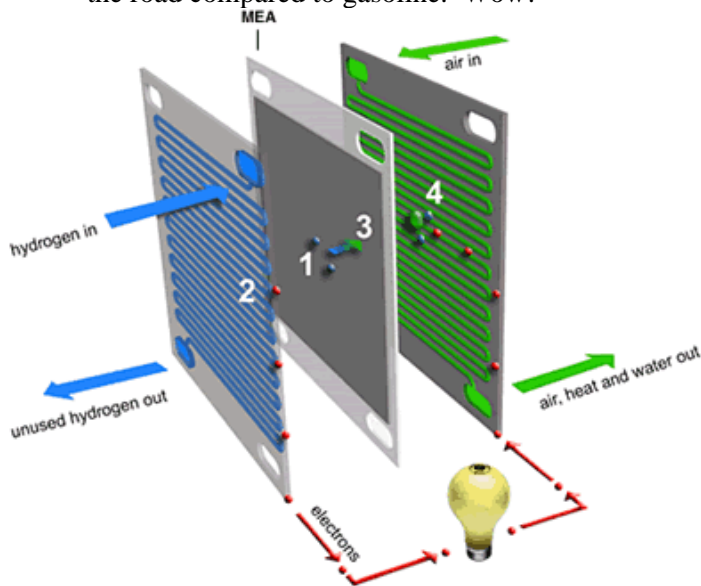
3. e. All of the above.

- Hydrogen Fuel Cells can be used to power cars and busses, fork-lifts, cell phones, cell phone towers, buildings, and so much more!



4. b. 2-3

- A hydrogen fuel cell is 2-3 times more efficient than a traditional gasoline engine. This means that for the same amount of fuel (like a gallon of gasoline or a kilogram of hydrogen), with hydrogen, you'd go 2-3 times more miles down the road compared to gasoline. Wow!



5. d. 68

- There are 68 hydrogen fueling stations in the United States and 9 in Canada.



6. b. false

- Hydrogen is an energy *carrier*. That means you use energy to make hydrogen just like electricity. Why use energy to make hydrogen? Because it's worth it. More flexibility, longer, lighter storage of energy.

7. e. All of the above

- i. Hydrogen can be made from water (using electricity) and plants, natural gas, coal, and more using heat! And people are working on even more ways to make hydrogen, like from algae, food waste and sewage!

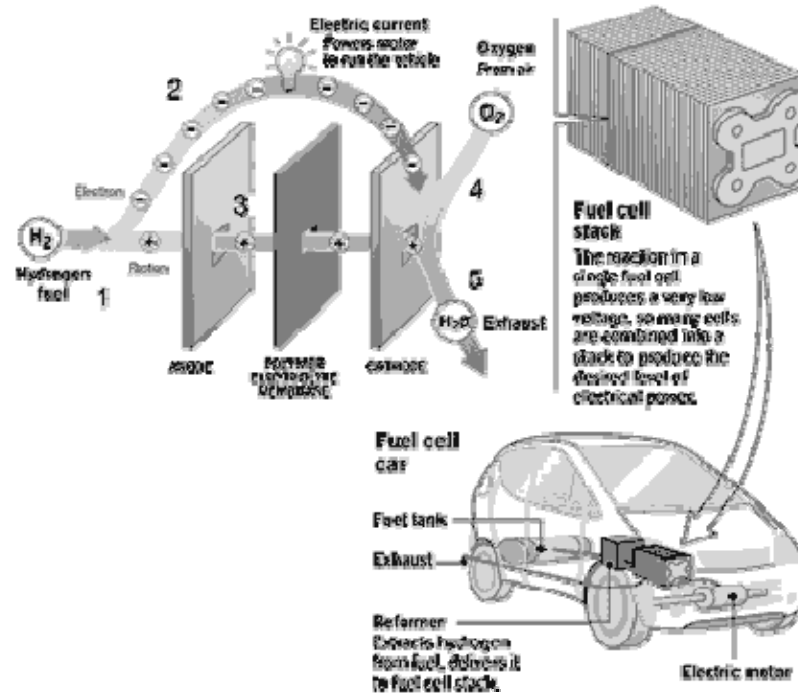


8. d. All of the above

- Presently hydrogen can be stored as a gas, liquid, or solid combined with a metal hydride.

9. b. True

- Fuel cells produce electricity using hydrogen from the car's fuel tank and oxygen from the air. Then that electricity powers the electric motor that makes the wheels turn. It's all electricity all the time. PLUS, all fuel cell vehicles have batteries too to capture the energy from braking and slowing down. So they're all electric and all hybrids!



10. a. 3-5 minutes

- Just 3-5 minutes! Just like a gasoline car. Hydrogen fueling will be fast and there's no pollution to groundwater from drips and spills like there is with gasoline. Hydrogen is an environmentally friendly gas that doesn't leak because when you fuel, the nozzle makes an air-tight unbreakable seal with your vehicle.

