SN IN HIGH SCHOOLS
March 4, 2017

Built for Speed

Quest Through the Archives

Directions: After reading the article "Built for speed," use the archives at www.sciencenews.org to answer these questions:

1. **Search for an article that discusses the use of catalysts in developing new energy technologies. Explain the article.**

2. **Search for an article that discusses alternatives to platinum in catalytic converters. Describe the alternative and how it works.**

3. **Search for the earliest published article about catalytic action. What anecdotal story demonstrates catalytic action?**

SN EDUCATOR GUIDE

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Responses to Quest Through the Archive

1. **Search for an article that discusses the use of catalysts in developing new energy technologies. Explain the article.** Possible student response: "Hydrogen made using sunlight, cheap materials," published 9/16/2014, discusses the use of chemical catalysts to produce hydrogen and oxygen from water and energy derived from sunlight. Using sunlight to produce hydrogen as a fuel source would be a clean, efficient way to store the sun's energy.

2. **Search for an article that discusses alternatives to platinum in catalytic converters. Describe the alternative and how it works.** Possible student response: "Building a cheaper catalyst," published on 4/24/2010, discusses using perovskite as an alternative to platinum catalytic converters in diesel vehicles. Wei Li at General Motors' Global Research and Development branch replaced a platinum-based catalyst with one made of manganese-based perovskite. The resulting reaction rate was faster than the rate using platinum.

3. **Search for the earliest published article about catalytic action. What anecdotal story demonstrates catalytic action?** Possible student response: "A table trick and what it teaches," published on 6/28/1924, tells the story of a dinner trick explained by the science of "catalysis." The story describes the end of a dinner where someone remarks that you can't light sugar on fire with a match. Attempts are made, without success. A guest takes the challenge and succeeds by using the ash from a cigar, which lowers the ignition point of sugar. The chemicals in the ash act as catalysts.