

# The Future of Plastics

Name \_\_\_\_\_ Date \_\_\_\_\_

You have reviewed the history of polymer science as a class from its beginnings in atom research to its current use in growing “artificial skin.” Behind the development and use of plastic lies years of research by hundreds of scientists investigating basic questions in chemistry. To answer these questions, scientists were faced with the need for new technology. For example, in 1920 German chemist, Hermann Staudinger, suggested that polymers are long chains of small chemical units. His proposal could not be tested until the invention of the ultracentrifuge. Just as science depends on technology to collect data, measure, and observe, technology also relies on science. For example, the technology of growing “artificial skin” on polymer scaffolds lies in research in biology and medicine. Polymer technology can only be used in medical treatment when scientists know how cells divide and skin grows. Science and technology are thus interdependent—advances in both will hopefully lead to benefit for all of humanity.

You will research one out of eight topics about the future of plastics.

The eight topics are:

- 1) Plastic superconductors  
[http://www.businessweek.com/bwdaily/dnflash/mar2001/nf20010315\\_424.htm](http://www.businessweek.com/bwdaily/dnflash/mar2001/nf20010315_424.htm)
- 2) Plastic building materials  
[http://www.monash.edu.au/pubs/eureka/Eureka\\_95/plastic.html](http://www.monash.edu.au/pubs/eureka/Eureka_95/plastic.html)
- 3) Plastic fuel tanks  
[http://www.americanplasticscouncil.org/apcorg/newsroom/articles/fuel\\_tanks.html](http://www.americanplasticscouncil.org/apcorg/newsroom/articles/fuel_tanks.html)
- 4) Plastic lasers <http://www.science.utah.edu/vardeny.html>
- 5) Plastic lumber  
[http://www.plasticsresource.com/recycling/other\\_resources/NewYork.html](http://www.plasticsresource.com/recycling/other_resources/NewYork.html)
- 6) Plastic muscles for robots  
[http://news.bbc.co.uk/hi/english/sci/tech/newsid\\_284000/284766.stm](http://news.bbc.co.uk/hi/english/sci/tech/newsid_284000/284766.stm)
- 7) Nanotechnology Meets Nature in the Future of Drug Delivery  
<http://researchnews.osu.edu/archive/plastpart.htm>
- 8) Fireproof plastics for airplane cabins  
[http://www.findarticles.com/cf\\_0/m1200/3\\_155/53705987/p1/article.jhtml](http://www.findarticles.com/cf_0/m1200/3_155/53705987/p1/article.jhtml)

The topic I have chosen is \_\_\_\_\_.

The assignment is due on \_\_\_\_\_.

As you read the short article of your choosing, answer the following questions.

1. What is the article about?
2. How are plastics being used? Where are plastics being used?
3. Why is plastic being used as the building material?
4. Describe the types of technology needed in using plastic as the building material.
5. What are the benefits of using plastic as the building material?