

Honors Topic Assignment #4

Due Friday November 2nd

Please watch "[Most Amazing Materials of the Future](#)" on the Origins Channel and please read "[The Promise and Peril of Programmable Matter](#)", "[Breakthrough in Shape Changing Materials](#)", and "[Shape Memory Polymer Responds to Body Temperature and Lifts 1000 times in Own Weight](#)" from [Engineering.com](#). Please also read the article "New Artificial Spider Silk: stronger than steel and 98% water" from [Newsela](#).

After reviewing these resources please answer the following questions in a reflection. You can answer the questions individually or write them as a short reflection essay. Please make sure to use complete sentences as well as correct spelling and grammar.

Feel free to discuss your answers with others, but make sure that your reflection is in your own words and reflects the conclusions which you arrived at. If you do discuss this assignment with other students from the honors class, please list them at the top of your reflection.

Reflection Questions:

1. After watching the most amazing materials of the future, what questions do you have? Which material did you find the most remarkable and why? Which material would you like to work with on a project?
2. After reading the "promise and the peril of programmable matter" reflect on what the promise is. Also reflect on what the peril is.
3. To the best of your ability describe what programmable matter is, citing examples from the article.
4. After reading the remaining articles, reflect on what you learned about smart/advanced materials as a whole. What are smart materials? How are they different from regular materials? Where do you see smart materials really helping us take care of each other and our planet, as well as pushing us forward technologically?
5. Many of the materials you learned about are inspired by biological or naturally occurring systems and materials. Choose at least two examples of this and reflect on what you learned about them.