

Nanotechnology Reflection

1. Last name
First name
Your Purdue login (the one you use to get in to Blackboard)
2. My bachelor's field of study is or will likely be: ABE / AERO/ BME / CEM / CHE / CIVL / ECE / EEE / IDE or MDE / IE / ME / MSE / NE / Undecided Engineering / Other

<NEW PAGE>

3. What is your awareness of nanotechnology?

I can:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Name a nanoscale-sized object.	<input type="radio"/>				
Describe one way nanotechnology directly impacts my life.	<input type="radio"/>				
Name a field of study that currently conducts nanotechnology research.	<input type="radio"/>				
Describe one way nanotechnology may benefit society/humankind.	<input type="radio"/>				
Name an application of nanotechnology.	<input type="radio"/>				
Describe a process to manufacture objects at the nanoscale.	<input type="radio"/>				
Name an instrument used to make measurements at the nanoscale.	<input type="radio"/>				
Describe one way nanotechnology may directly impact my life in the future.	<input type="radio"/>				

<NEW PAGE>

4. What is your exposure to nanotechnology?

I have:	Not at All/ Never	Very Little	Sometimes/ Occasionally	A Fair Amount	A Great Deal
Heard the term nanotechnology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read [something] about nanotechnology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watched a program about nanotechnology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had one [or more] instructors/teachers talk about nanotechnology in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in an activity involving nanotechnology [lab, project, research].	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taken a class about nanotechnology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Nanotechnology Reflection

<NEW PAGE>

5. What is your motivation to investigate nanotechnology?

I plan to:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Read a fiction story about nanotechnology	<input type="radio"/>				
Formally teach nanotechnology concepts (e.g. as a teaching assistant)	<input type="radio"/>				
Investigate the implications of nanotechnology	<input type="radio"/>				
Informally/Casually teach someone something about nanotechnology.	<input type="radio"/>				
Seek information about internships or Coop experiences with companies engaged in nanotechnology.	<input type="radio"/>				
Read a news story or popular magazine article about nanotechnology.	<input type="radio"/>				
Give a presentation related to nanotechnology to an audience I perceived as having more experience with nanotechnology than I.	<input type="radio"/>				
Explore nanotechnology as part of this course.	<input type="radio"/>				
Read a research journal article about nanotechnology.	<input type="radio"/>				
Enroll in a course about nanotechnology	<input type="radio"/>				
Attend a non-course related seminar about nanotechnology.	<input type="radio"/>				
Visit an industry or business that specializes in nanotechnology.	<input type="radio"/>				
Give a presentation related to nanotechnology to an audience I perceived as having less experience with nanotechnology than I.	<input type="radio"/>				
Watch a program about nanotechnology.	<input type="radio"/>				
Apply or interview for a nanotechnology related work or research experience.	<input type="radio"/>				
Investigate fields of study in which I can learn more about nanotechnology.	<input type="radio"/>				
Obtain a work experience or undergraduate research opportunity related to nanotechnology.	<input type="radio"/>				

Nanotechnology Reflection

<NEW PAGE>

7. Describe five (5) things you know about nanotechnology.

<NEW PAGE>

8. List five (5) questions you have about nanotechnology.

<NEW PAGE>

For each question, select the response that best answers the question.

9. When you hear the term nanotechnology, what length-scale "typically" comes to your mind?

- a. 10^9 meters
- b. 10^6 meters
- c. 10^3 meters
- d. 10^1 meters
- e. 10^{-1} meters
- f. 10^{-3} meters
- g. 10^{-6} meters
- h. 10^{-9} meters
- i. None of the above

10. Which of the following products contain nanoscale manufactured parts or materials?

- a. Sunscreen
- b. Khaki pants
- c. Tennis balls
- d. Devices that read computer hard drives
- e. All of the above

11. What is a "self-assembled monolayer"?

- a. Atoms or molecules that spontaneously form uniform, single layers.
- b. A type of clothing that gets thicker in response to colder temperatures.
- c. An optical device that puts itself together.
- d. A fuzzy logic circuit.

12. If a nanometer were as big as the width of a pin head, about how long would a meter be?

- a. As long as the pin shaft.
- b. As long as a ladder
- c. As long as a blue whale.
- d. As long as a trip between Washington, D.C. and Atlanta, GA.

13. Which instruments are "typically" used to make measurements at the nanoscale?

- a. Scanning Electron Microscope (SEM)
- b. Transmission Electron Microscope
- c. Atomic Force Microscope (AFM)
- d. All of the above

14. How many hydrogen atoms lined up "shoulder-to-shoulder" would fit in a one nanometer space?

- a. Less than one
- b. Ten
- c. One thousand
- d. One billion

Nanotechnology Reflection

15. Do you think nanotechnology will improve our way of life in the next 20 years, it will have no effect, or it will make things worse?

- a. Improve
- b. Have no effect
- c. Make worse
- d. Depends on what it is used for

<NEW PAGE>

16. Have you used an online simulation tool to understand NANOTECHNOLOGY concepts?

- a. I have no idea what a simulation tool is
- b. Used it as part of a course
- c. Played around informally with one or two tools (not part of my classes)
- d. I have built online simulation tools for nanotechnology.
- e. I have not used an online simulation tool but I know what a simulation tool is

17. Have you used an online simulation tool to understand ENGINEERING concepts?

- a. I have no idea what a simulation tool is
- b. Used it as part of a course
- c. Played around informally with one or two tools (not part of my classes)
- d. I have built online simulation tools for engineering.
- e. I have not used an online simulation tool but I know what a simulation tool is

18. Have you used online materials (for example, video seminars, lectures, and animations) to learn NANOTECHNOLOGY concepts?

- a. I have never had the need to do this
- b. I have done this only as part of my ENGR 131 class
- c. I do this all the time in my courses
- d. I do this informally but not in my classes

19. Have you used online materials (for example, video seminars, lectures, and animations) to learn ENGINEERING concepts?

- a. I have never had the need to do this
- b. I have done this only as part of my ENGR 131 class
- c. I do this all the time in my courses
- d. I do this informally but not in my classes

20. Have you downloaded podcasts (from iTunes or other Internet sources) to learn NANOTECHNOLOGY concepts?

- a. I have never done this
- b. I usually only download podcasts for my classes
- c. I would love to do this – but not many courses offer this feature
- d. I do this informally when I want to learn some new concepts.
- e. I do this regularly in many of my classes

Nanotechnology Reflection

21. Have you download podcasts (from iTunes or other Internet sources) to learn ENGINEERING concepts?

- a. I have never done this
- b. I usually only download podcasts for my classes
- c. I would love to do this – but not many courses offer this feature
- d. I do this informally when I want to learn some new engineering concepts.
- e. I do this regularly in many of my classes

22. Have you heard of nanoHUB.org?

- a. This is the first time I am hearing about this
- b. I have heard about it – but have never visited it.
- c. I already have an account on nanoHUB
- d. I have done research using nanoHUB.org.