



Activity 3 – Exercises

Answers to all questions are provided at the end of the worksheet.

Q1

In the table below, describe what the following elements or compounds are used for at the macroscale, and think about what they could be used for at the nanoscale.

	Macro	vs	Nano
Gold (Au)			
Sugar			
Silver (Ag)			
Titanium Oxide (TiO ₂)			
Cadmium (Cd)			

Q2

Given what you have learnt about the surface area to volume ratio, why is it an advantage for polar bears to be large?

Q3

Think about the implications of nanotechnology, specifically in a biomedical application. What might some of the drawbacks or problems be?

Write a 200-word essay on some of the safety concerns surrounding the field.



Q4¹

Which of the following are currently or could soon be possible with nanotechnology?

- A) Location and destruction of cancerous cells
- B) Antibacterial food containers
- C) Rigid, lightweight building materials
- D) All of the above

Q5

Which statement about nanoparticles is correct?

- A) They have a large surface area compared to their volume.
- B) They cannot be used as catalysts.
- C) They are always 'inorganic' compounds such as titanium dioxide.

Q6

Which of the following is used to see molecules at the nanoscale?

- A) Hydrophobicity Microscopes
- B) Magnetos
- C) Atomic Force Tunnelers
- D) Scanning Tunneling Microscopes

¹ Adapted from <https://www.proprofs.com/quiz-school/story.php?title=practice-quiz-nanoscience>, Accessed 27/11/2018.