

# Exploring Nanotechnology

Science · Answer Key · 20 Questions

---

**1. What does the prefix 'nano' mean when we talk about nanotechnology?**

- A) Very big
- B) One billionth of a meter**
- C) One millionth of a meter
- D) As big as a mountain

**2. Nanotechnology deals with things that are smaller than what?**

- A) A dog
- B) A grain of sand
- C) A single hair on your head**
- D) A car

**3. What is a common example of something that uses nanotechnology to make it stronger or lighter?**

- A) Wooden blocks
- B) Plastic toys
- C) Carbon fiber in sports equipment**
- D) Paper drawings

**4. How small are nanoparticles compared to a red blood cell?**

- A) Much larger
- B) About the same size
- C) Many times smaller**
- D) Invisible to the same microscopes

**5. Scientists use special tools called microscopes to see things at the nanoscale. What is a very powerful type of microscope used for this?**

- A) Magnifying glass
- B) Telescope
- C) Scanning Electron Microscope (SEM)**
- D) Binoculars

**6. Some sunscreens use nanoparticles. What do these nanoparticles help to do?**

- A) Make the sunscreen taste sweet
- B) Block harmful ultraviolet (UV) rays from the sun**
- C) Make the sunscreen glow in the dark
- D) Keep mosquitoes away

**7. What is a material that is very commonly studied in nanotechnology because of its unique properties?**

- A) Water
- B) Gold
- C) Carbon**
- D) Oxygen

**8. When materials are made at the nanoscale, they can behave differently. For example, what can happen to the color of gold when it's made into nanoparticles?**

- A) It always stays bright yellow
- B) It can change to red or blue**
- C) It becomes invisible
- D) It turns to silver

**9. In medicine, nanotechnology can be used to deliver drugs directly to sick cells. What is this called?**

- A) Drug delivery**
- B) Cell painting
- C) Doctor's visit
- D) Medicine mixing

**10. Why is it important for scientists to study nanotechnology?**

- A) To build bigger buildings
- B) To invent new toys
- C) To create new materials and technologies**
- D) To learn about dinosaurs

**11. Which of these is NOT a size that nanotechnology typically works with?**

- A) 1 nanometer
- B) 10 nanometers
- C) 100 nanometers
- D) 1000 nanometers**

**12. Some smart fabrics use nanotechnology to make them do special things. What might these fabrics be able to do?**

- A) Change their own shape
- B) Become invisible
- C) Repel water or stains**
- D) Fly

**13. What is one advantage of using smaller particles in some materials?**

- A) They take up more space
- B) They can be more reactive or stronger**
- C) They are harder to mix
- D) They make the material heavier

**14. When we say a material has 'nanoscale properties,' it means its behavior is different because of its:**

- A) Color
- B) Size**
- C) Shape
- D) Temperature

**15. Nanotechnology can help make things more efficient. For example, what can it do for electronic devices?**

- A) Make them bigger
- B) Make them use more power
- C) Make them smaller and faster**
- D) Make them slower

**16. What is a common example of a material that can be made much stronger using nanotechnology?**

- A) Paper
- B) Wood
- C) Concrete**
- D) Glass

**17. The study of nanotechnology is part of what larger field of science?**

- A) History
- B) Geography
- C) Physics and Chemistry**
- D) Art

**18. If a scientist is working on 'nanomaterials,' what are they likely creating or studying?**

- A) Very large structures
- B) Materials at the atomic and molecular level**
- C) New types of animals
- D) Ancient artifacts

**19. What is a very famous nanomaterial that is incredibly strong and thin, made of a single layer of carbon atoms?**

A) Plastic

**B) Graphene**

C) Aluminum

D) Rubber

**20. Nanotechnology can be used to make surfaces self-cleaning. How might this work?**

A) The surface magically cleans itself

B) Tiny machines scrub the surface

**C) Special nanoparticles repel dirt and water**

D) The surface changes color when dirty