

## Questions for The Particle Adventure

<http://www.particleadventure.org/>

Go to the second page and select LBNL: Particle Adventure. Select The Standard Model and start at the beginning, "What is Fundamental?" Read this section and the section titled "What is the World Made of?" Answer these questions as you are reading.

1. What does the word "fundamental" mean?
2. What are protons and neutrons made of?
3. Describe the Standard Model (the three bullet points)
  - \*
  - \*
  - \*
4. What is the opposite of matter?
5. What are the 6 types of quarks?
6. What is a hadron?
7. What is a baryon?
8. What is a meson?
9. What are the 6 types of leptons?
10. Try the lepton decay quiz online. You do not need to write it on this page!
11. When are neutrinos usually produced?
12. Try the "what are particles made of" quiz online. You do not need to write it on this page!

Skip the “What Holds It Together “section and go to “Particle Decays and Annihilations.”  
Answer these questions as you are reading.

13. What does “particle decay” mean?
14. What are the three types of radiation?
15. What do the gluon particles create?
16. Decay happens when particles \_\_\_\_\_ outside the nucleus.
17. What happens to the “missing mass” in decay?
18. What are “virtual particles?”
19. What are the 3 interactions that cause particle decays?
20. What happens during annihilation?
21. What happens to the quarks when a neutron decays into a proton?
22. When an electron and a positron collide, what quark can they create?
23. What creates a “top quark?”