

A. Fundamental forces

1. Arrange the fundamental forces from strongest to weakest:

Electrostatic/magnetic gravity strong nuclear force weak nuclear force

Fundamental force	Relative strength	Range of force
	1	~ 1 femtometer (10^{-15} m)
	10^{-2}	Proportional to $1/\text{radius}^2$
	10^{-13}	$< 10^{-3}$ femtometer
	10^{-38}	Proportional to $1/\text{radius}^2$

2. _____ is the short-range force responsible for holding nucleons together.
 3. _____ is the long-range force responsible for holding the planets together.

B. Subatomic particles

4. Every elementary particle has a corresponding _____.
5. All particles can be classified into two groups: _____ and _____.
6. Lepton is a particle that does not interact through _____ force.
7. Examples of leptons are: _____, _____, _____, _____.
8. Hadrons are made of 3 smaller particles called _____.
9. The six types of quarks are: _____, _____, _____, _____, _____, _____.
10. The three colors are: _____, _____, _____.
11. A proton can be written as _____ using quarks.
12. A neutron can be written as _____ using quarks.
13. Hadrons can be subdivided into _____ and _____.
14. Baryons are composed _____, while mesons are composed of a quark and an _____.
15. Two common baryons are known as _____ and _____.
16. _____ hold quarks together by exchanging particles, whereas _____ hold hadrons (nucleons) together to form atomic nuclei.
17. _____ are essentially massless leptons that occur during nuclear decay.
18. Annihilation is the "total destruction" of matter and occurs when a _____ collides with _____, such as an electron colliding with a _____.
19. On the back of this page design a hierarchal concept map which classifies the fundamental particles of matter.