What is an Amino Acid?

R = 20 possible different side chains

The R group may be as simple as a hydrogen atom or as complex as a carbon chain with functional groups. The physical and chemical properties of the R sidechains determine the unique characteristics and functions of each particular amino acid and thus the entire protein.

Linking amino acids to form polypeptides - a few definitions

You've just made a polymer! (A chain of monomers linked together)

Peptide bond - a covalent bond that is rigid and cannot turn

The covalent bonds between adjacent carbons can turn, which is important in the formation of a protein's secondary and tertiary structures

Continue the process adding one amino acid at a time...

Notice any patterns?

The peptide bonds create a repetitive "backbone"

R groups can be large or small molecules, and will effect the shape the polypeptide will take