

Proteins

1. Proteins are composed of long chains of _____ bonded together.

Draw a diagram of one (generalized):

The reason we add the ___ group is that there are _____ different _____ used by most living organisms. It would be far too complex to learn all of them.

2. These basic units, _____, are linked together in cells by _____, which is why these sub-cellular structures are referred to as the site of protein _____. The sequence of the _____ is coded for by our _____. Everyone has a unique _____, which is the name for all the proteins in your body, because the code on our _____ is not entirely the same.
3. Proteins are formed by _____ reactions, which are named this way because they release _____. When two _____ are bonded together, the new molecule is called a _____. Draw the process here:

When 3 or more are connected, they are called _____. This is because the bond between them is called a _____ bond. Label it on your diagram.

4. There are 4 levels to protein structure:

- i. _____ structure is simply the sequence of the _____ based on the code of our _____.
- ii. _____ structure is the formation of _____ bonds leading to _____ helices and _____ pleated sheets. The latter are represented by an _____ on diagrams.
- iii. _____ structure is the three-dimensional structure which is due to the interactions between the _____ - groups that impact the structure, such as _____ bridges.
- iv. _____ structure, the final form, which can consist of one or more _____ and _____ groups, such as Fe⁺ in the _____ molecule.

5. Proteins can be _____ by changes in _____ and in _____. They function best at their _____, because outside of that range, _____ in the proteins can break, resulting in a change in the 3D shape. _____ can be used in experiments to demonstrate this phenomenon. It can be found in _____.

6. Proteins have a range of functions. Complete the table:

Function	Named Example	Explanation
		Lower the activation energy of reactions, in this case, those required for _____ in plants
		Have an impact on one or more organs. This example is produced by the _____ and _____ blood glucose by acting on _____ and _____ tissue.
		Essential for immunity. This is the general term for this type of protein.
		These absorb certain _____ of light, helping in chemical reactions. This example is found in the _____ cells of the _____.
		Essential for strength. The human example is used to strengthen _____. The other example is used by _____ to make strong _____.