



Cellulose

- Click on the icon and listen to the recording.
Fill in the blanks with the missing words.



Cellulose makes up over half of the total organic carbon in the Earth's (1).
It is a long chain of linked sugar molecules that provides wood with its remarkable
(2). It is the main component of plant cell walls, and the basic building
block for many (3) and for paper. Cotton is the purest natural form of cel-
lulose. As a polymer of glucose, cellulose has the formula $(C_6H_{10}O_5)_n$. But the process of linking
sugar molecules is taken (4) with the formation of cellulose: it consists of
long chains of molecules linked by glycosidic bonds (which are covalent bonds that join a
carbohydrate to another functional group or molecule), with a length varying greatly, from a
few (5) sugar units in wood pulp to over 6,000 for cotton. The orientation
of the sugar molecules means that the -OH groups move (6) in all direc-
tions. These can form hydrogen bonds with adjacent chains, and therefore establish a kind of
three-dimensional (7). It is mainly used to produce paperboard and paper;
to a smaller extent it is converted into a wide variety of derivative (8) such
as cellophane, a thin transparent film, and rayon, an important fibre that has been used for
textiles since the beginning of the 20th century,

