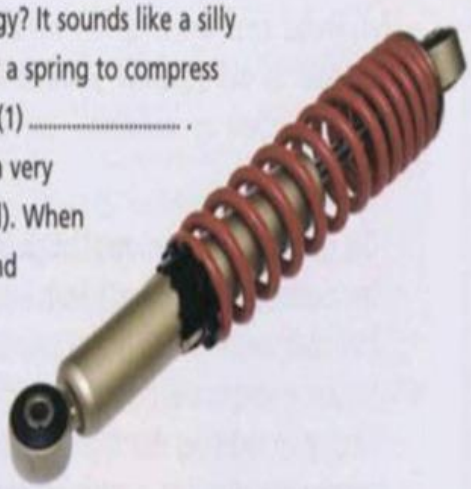
18.3 Complete the magazine article about springs using words from A, B and C opposite.

How are the springs used in car suspension made springy? It sounds like a silly question, but think about it for a moment. In order for a spring to compress or extend, then return to its original shape, it must be (1) ..... .



But springs are made from wire, and wire is made from very (2) ..... metal (often cold drawn carbon steel). When the wire is manufactured, it is not only stretched beyond its (3) .... – meaning it will no longer return to its original length – but also beyond its (4) .... , where significant, irreversible (5) ..... occurs. The metal from which springs are made has therefore been (6) ..... deformed and, consequently, needs to have its springiness put back.

To do this, once a spring has been formed into a coil, it is tempered – a process in which it is heated and kept at a high temperature for a sustained period. This 'resets' the atomic structure of the metal (partly, at least), so that after tempering, the spring will behave as it should – it can be (7) ..... deformed and will subsequently return to its original shape.