1.During prophase of mitosis有丝分裂, chromatin染色质 fibers become coiled into chromosomes with each chromosome having two chromatids染色单体 joined at a centromere着丝点.

2.A centromere is a region of DNA typically found near the middle of a chromosome where two identical sister chromatids come in contact. It is involved in cell division as the point of mitotic spindle纺锤体.

1. A telomere端粒 is a region of repetitive DNA（重复DNA） at the end of a chromosome, which protects the end of the chromosome from deterioration解体
2. **Difference about chromosome in Prokaryotic原核 and Eukaryotic真核?**

**Prokaryotic:** circular, very small, 1chromosome per cell, some enzymes and proteins are associated with the DNA, not housed in a nucleus

**Eukaryotic:** linear, fairly long, several chromosomes per cell, histone 组蛋白proteins spools缠绕 same in all eukaryotes, housed in a nucleus,2 loops of DNA wrapped around 8 histone proteins in nucleosome核小体, unity theme

**Functions of chromatin**

The functions of chromatin are to package DNA into a smaller volume to fit in the cell, to strengthen the DNA to allow mitosis and meiosis减数分裂, and to serve as a mechanism to control expression and DNA replication(DNA复制和表达).

**Difference about Heterochromatin异染色体 and euchromatin常染色体?**