- Helps to preserve shape
- Made of the carbohydrate *cellulose*
- What the cell wall is made of depends on the organism
  - Different for bacteria, yeast, fungi, algae and plants

➢ Chloroplasts

- Occur only in algae and plant cells
- Have a double membrane
- They have approximately the same size as bacteria
- Have their own DNA and ribosomes (70S)
  - Able to reproduce and make their own proteins
  - DNA is in form of a ring
- Contain grana, thylakoids and a stoma
  - *Grana* (sin. granum) are piles made of thylakoids
  - *Thylakoids* are flattened membrane sacs where photosynthesis takes place
    - The thylakoids absorb light and the process of photosynthesis is completed with the help of enzymes and chemicals that can be found in the stoma
  - *Stoma* is similar to cytosol, the fluid in the cytoplasm

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Page 6 of 8

Inside the nucleus

➢ Before division the DNA is tightly packed into chromosomes

- That's when we can see them

➢ *Chromosomes* carry all the information that is necessary for a cell to exist

➢ At other times the DNA is in form of chromatin

- *Chromatin* is formed by a strand of DNA and proteins called *histones*
  - This structure often forms *nucleosomes*

➢ A nucleosome consists of 8 spherical histones with a strand of DNA wrapped around them and secured with a 9th histone

- A chromosome is a highly coiled structure of many nucleosomes

➢ The DNA is never totally unpacked going around the nucleus like in a prokaryotic cell