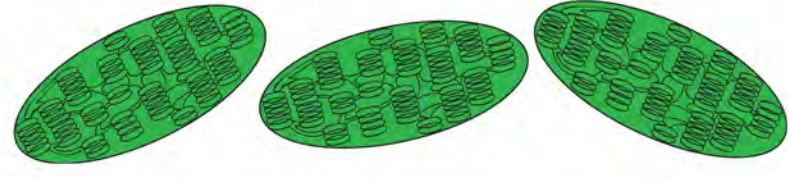


Plant Cells and Molecules

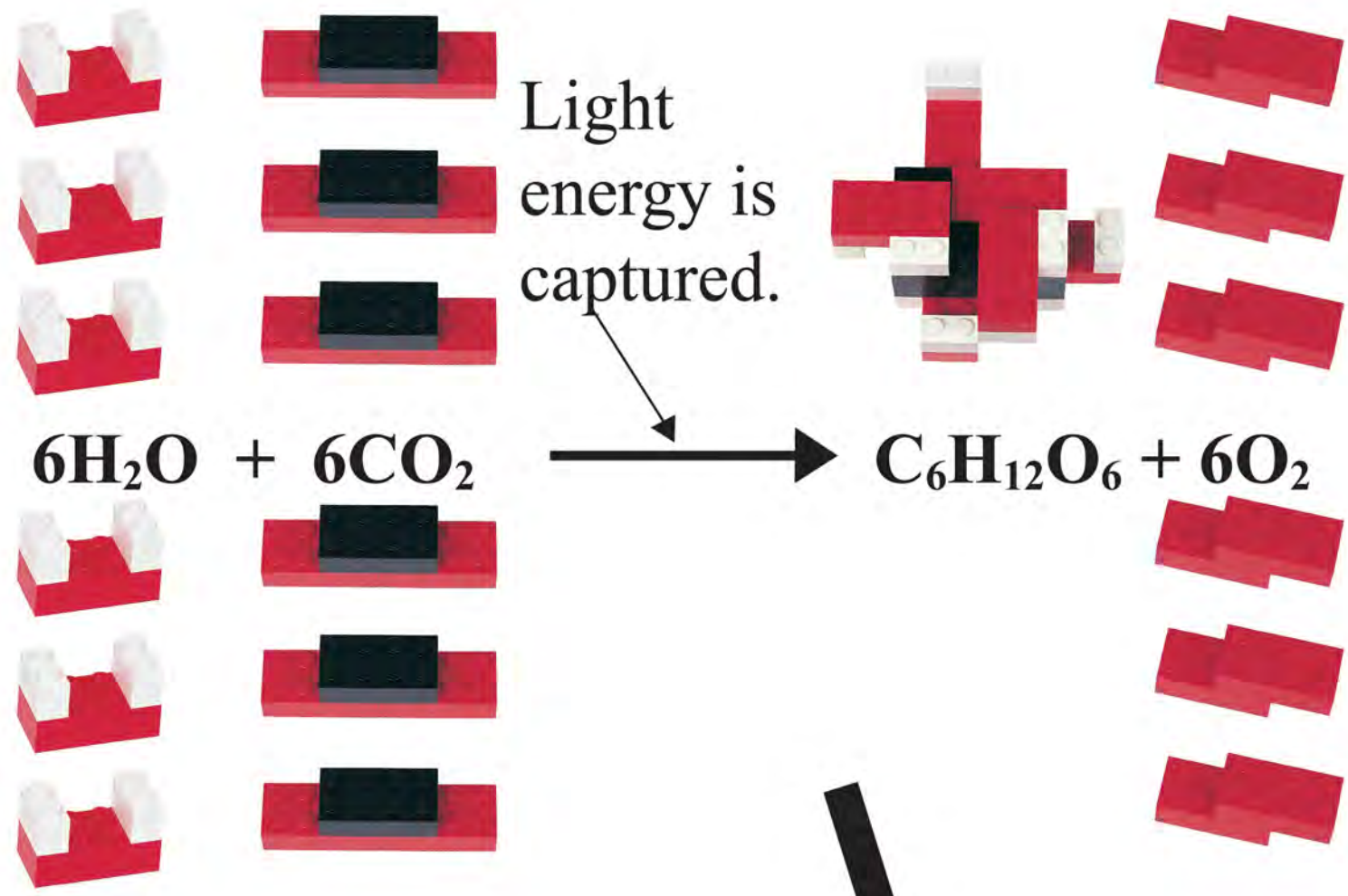
Chloroplasts



Photosynthesis

“Building with light”

Plants make their own food called glucose. To make glucose, plant cells use chloroplasts, which take H_2O and CO_2 molecules and create glucose ($C_6H_{12}O_6$). Some oxygen molecules are always left over. Green chlorophyll molecules inside the chloroplasts help capture the Sun’s energy.

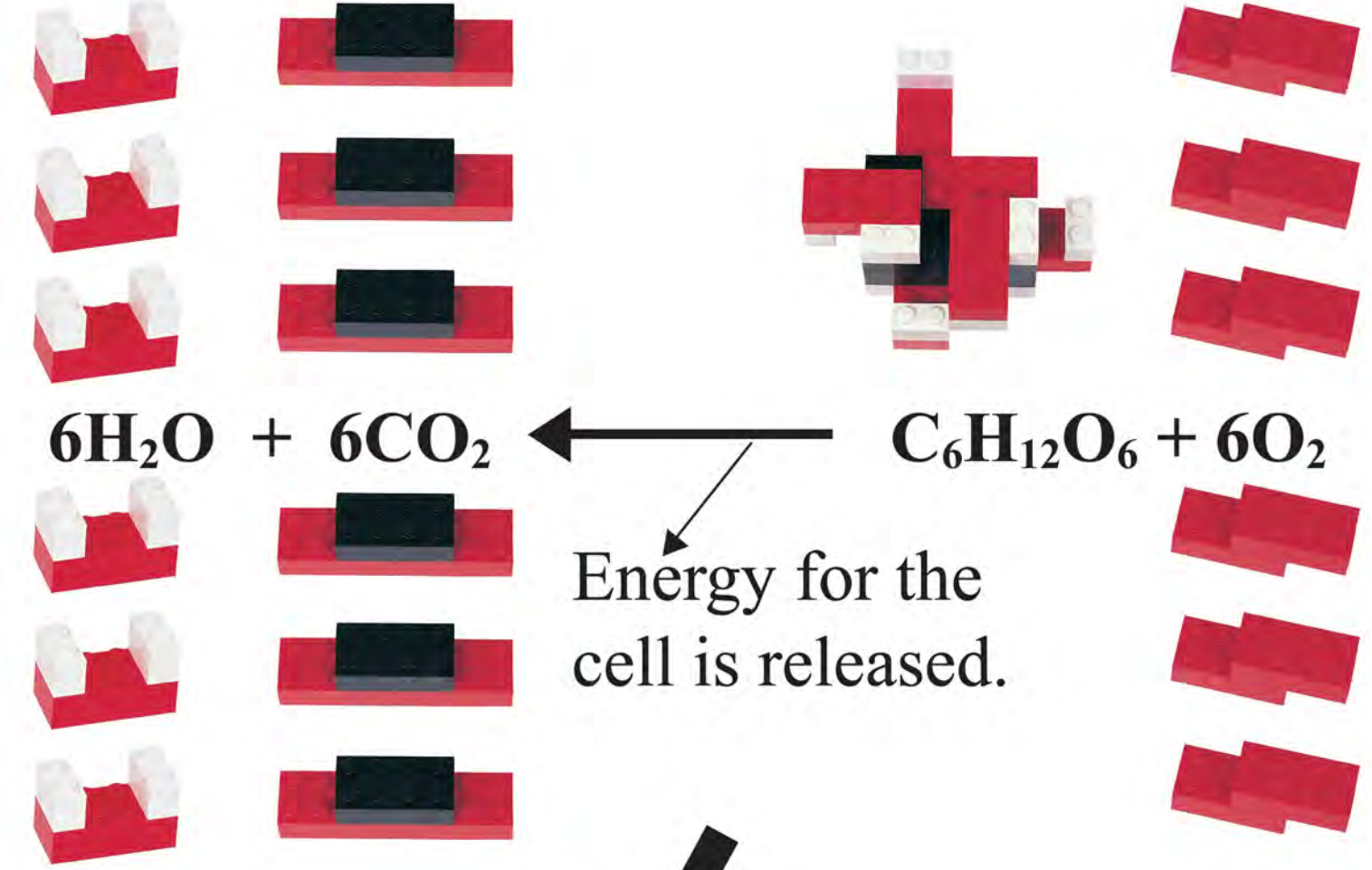


Mitochondria



Cellular Respiration

Mitochondria can get the energy out of sugar molecules for the cell. They combine oxygen and glucose molecules and produce energy. H_2O and CO_2 are given off. This process is called **cellular respiration**. Both plant and animal cells use sugar molecules (glucose) as food. Cellular respiration is the reverse of photosynthesis.



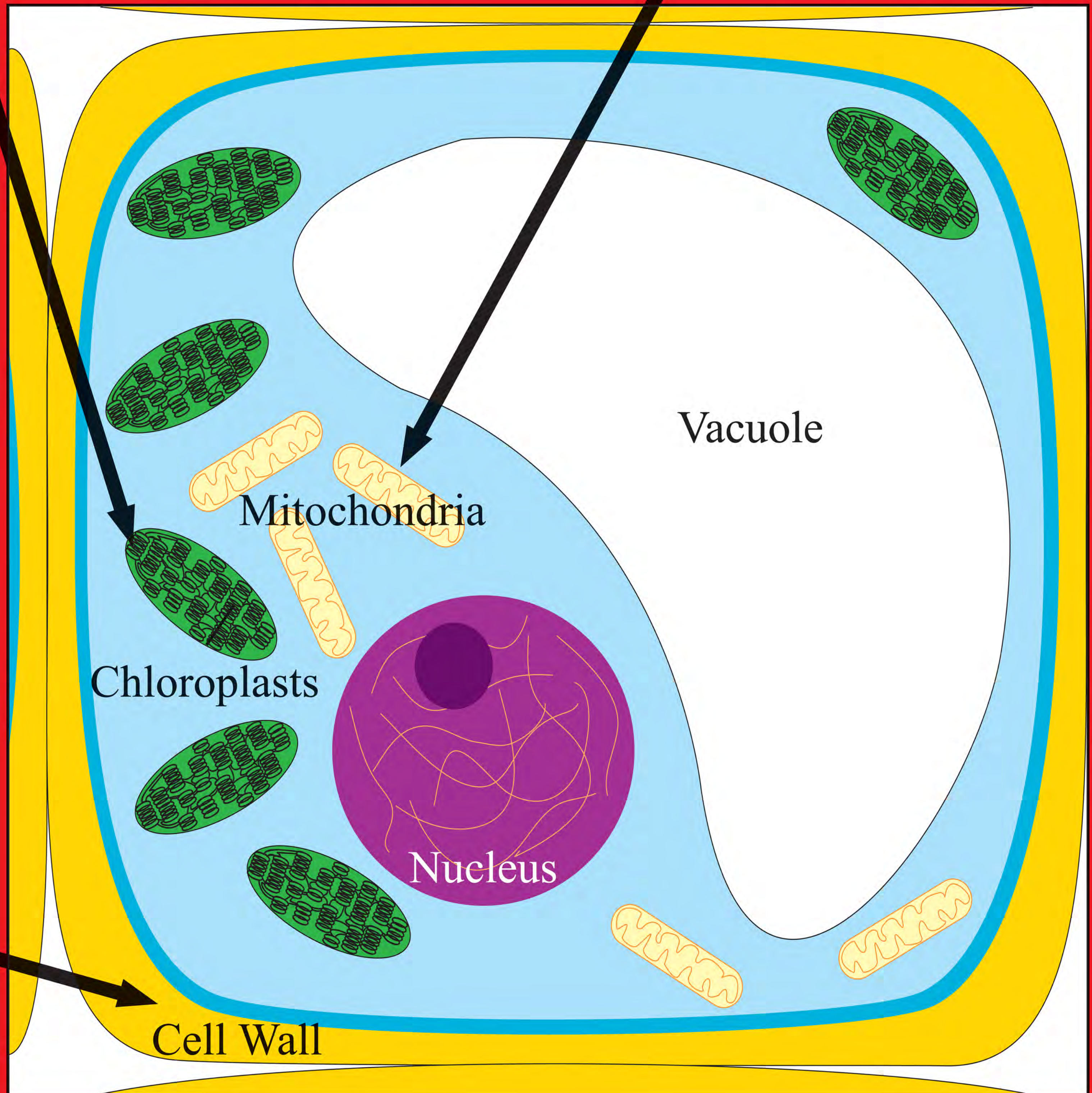
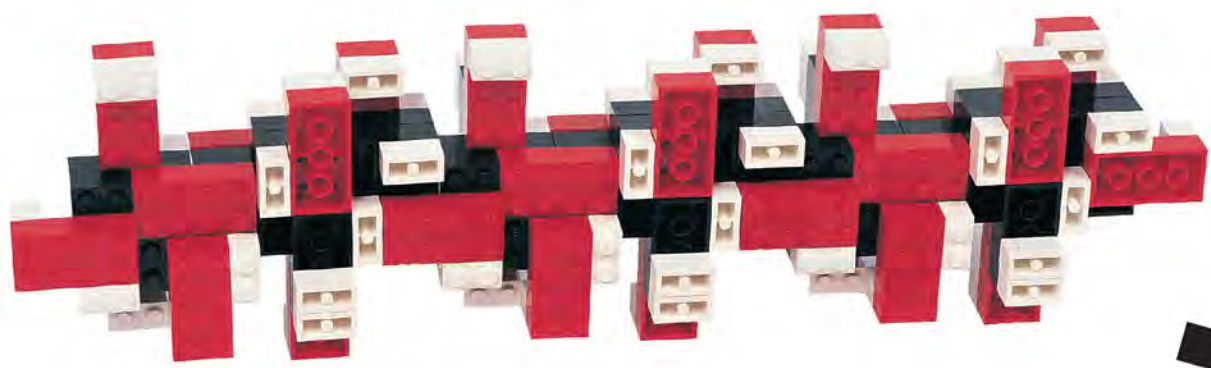
Cellulose

The **cell wall** is made of **cellulose** molecules. The cell wall is found outside of the cell membrane.

In cellulose, glucose molecules are connected so that every other glucose molecule is upside down.

Cellulose molecules can be found in the cell walls of plants. The glucose came from photosynthesis.

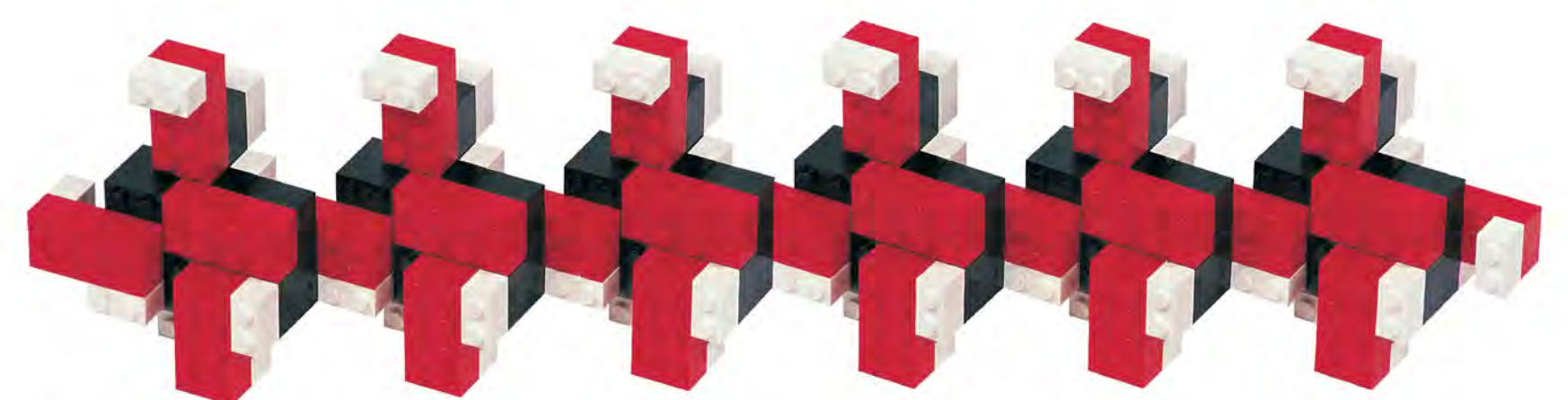
Cellulose - a long chain of glucose molecules



Starch

Starch molecules may be found in chloroplasts. If a plant cell has a lot of extra starch molecules, then the starch gets stored in a separate structure known as a leucoplast.

In starch, all glucose molecules are connected to each other in the same way. Both plant and animal cells store the energy of glucose in these starch molecules for later use.



Starch - a long chain of glucose molecules