BLOOD FLOWS THROUGH ARTERIES, VEINS AND CAPILLARIES

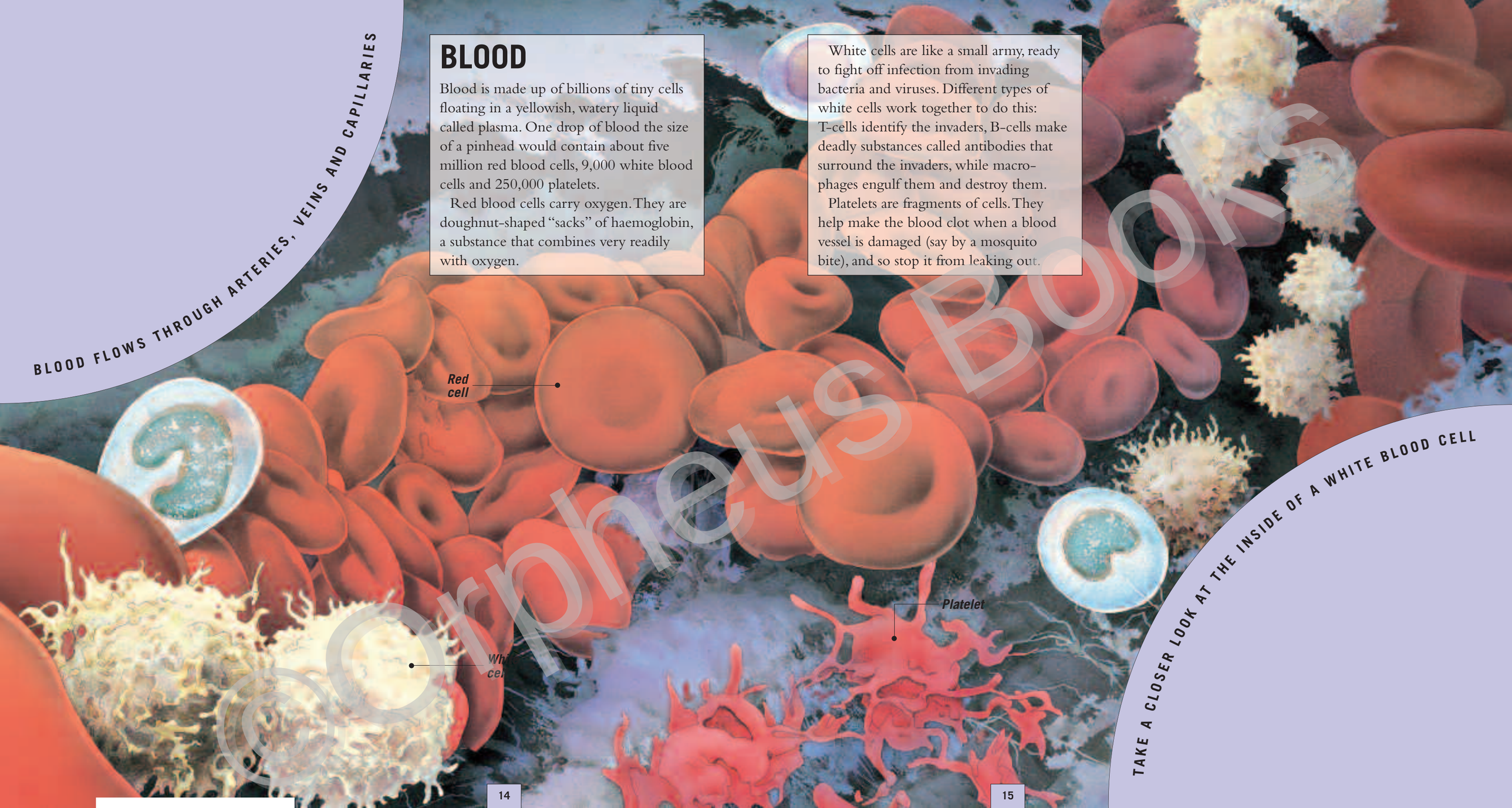
BLOOD

Blood is made up of billions of tiny cells floating in a yellowish, watery liquid called plasma. One drop of blood the size of a pinhead would contain about five million red blood cells, 9,000 white blood cells and 250,000 platelets.

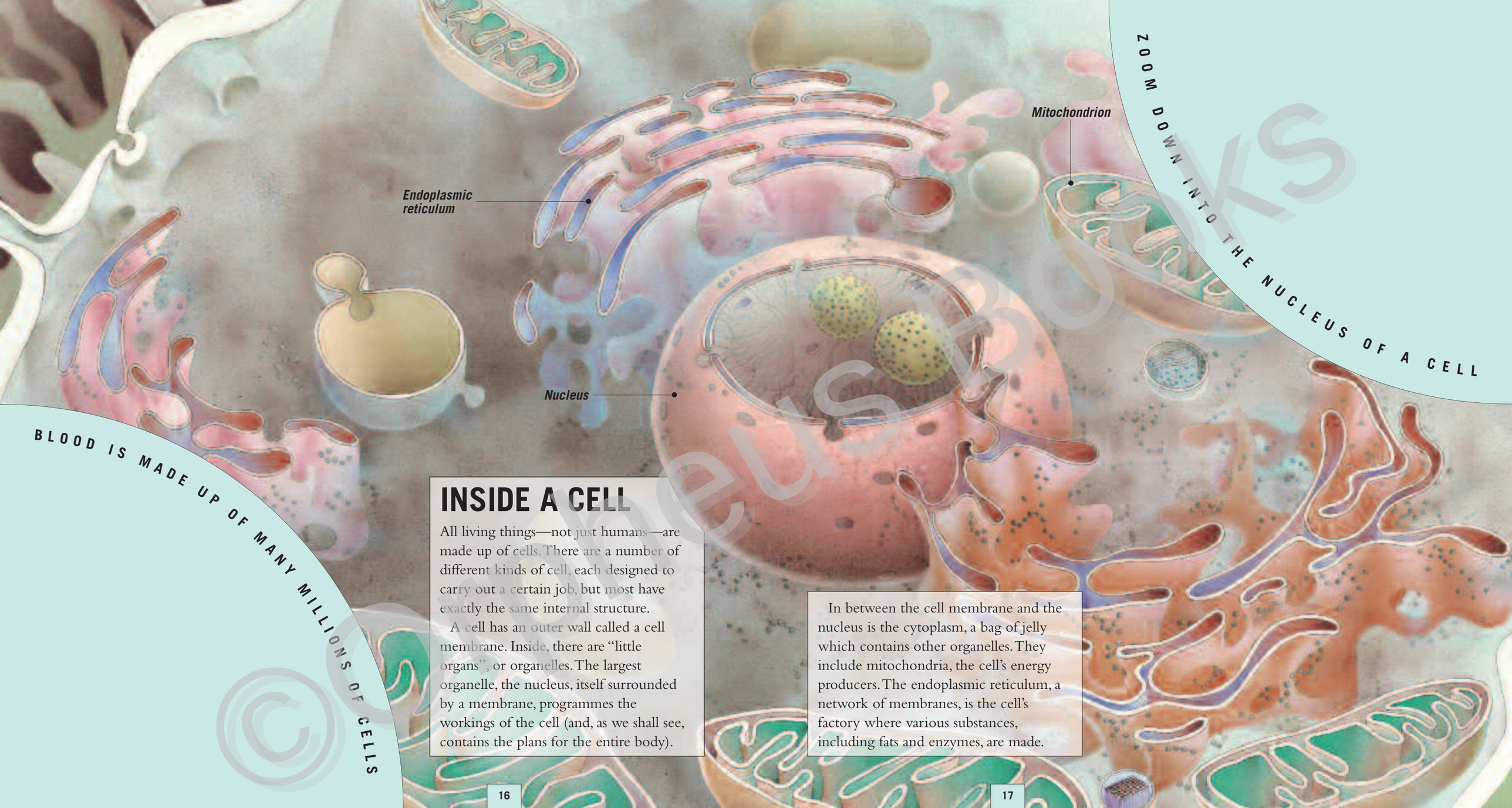
Red blood cells carry oxygen. They are doughnut-shaped "sacks" of haemoglobin, a substance that combines very readily with oxygen.

White cells are like a small army, ready to fight off infection from invading bacteria and viruses. Different types of white cells work together to do this: T-cells identify the invaders, B-cells make deadly substances called antibodies that surround the invaders, while macrophages engulf them and destroy them.

Platelets are fragments of cells. They help make the blood clot when a blood vessel is damaged (say by a mosquito bite), and so stop it from leaking out.



TAKE A CLOSER LOOK AT THE INSIDE OF A WHITE BLOOD CELL



BLOOD IS MADE UP OF MANY MILLIONS OF CELLS

ZOOM DOWN INTO THE NUCLEUS OF A CELL

INSIDE A CELL

All living things—not just humans—are made up of cells. There are a number of different kinds of cell, each designed to carry out a certain job, but most have exactly the same internal structure.

A cell has an outer wall called a cell membrane. Inside, there are "little organs", or organelles. The largest organelle, the nucleus, itself surrounded by a membrane, programmes the workings of the cell (and, as we shall see, contains the plans for the entire body).

In between the cell membrane and the nucleus is the cytoplasm, a bag of jelly which contains other organelles. They include mitochondria, the cell's energy producers. The endoplasmic reticulum, a network of membranes, is the cell's factory where various substances, including fats and enzymes, are made.