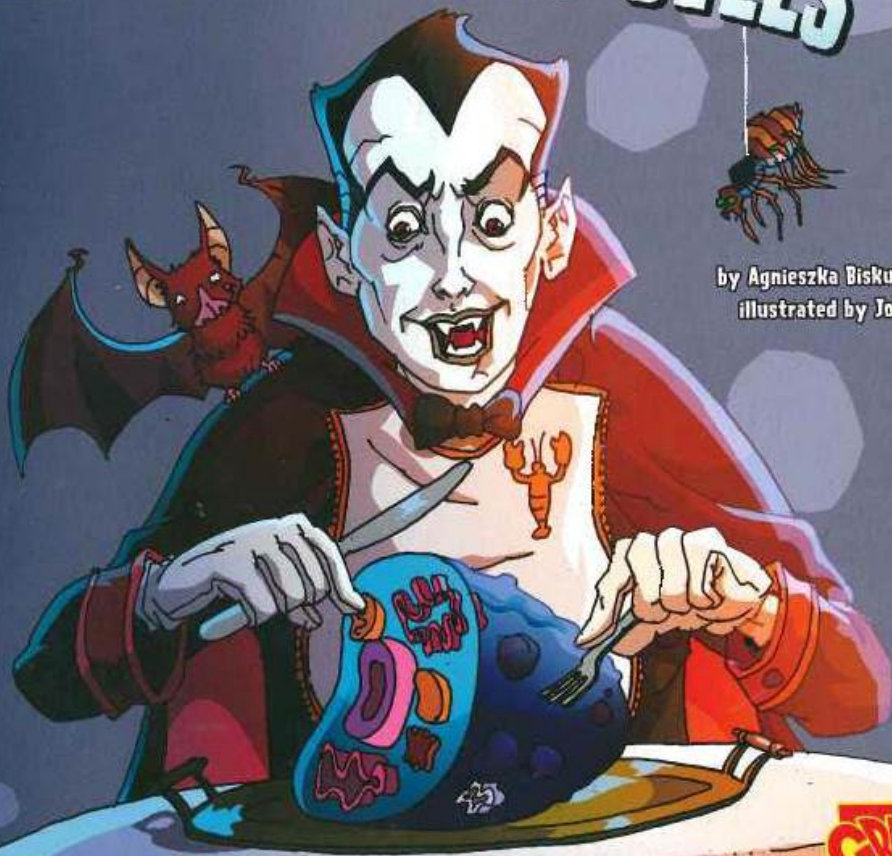


VAMPIRES AND CELLS

by Agnieszka Biskup
illustrated by Jok



Cells need energy to carry out their activities. They also need energy to create more cells.

The human body produces millions of new cells every few seconds. Producing new cells allows you to replace injured cells and cells that have died.

MILLIONS OF RED BLOOD CELLS EVERY FEW SECONDS? YUM!



All new cells come from existing cells. The process is different for prokaryotic cells and eukaryotic cells.

Prokaryotic cells reproduce by a process called binary fission. They copy their DNA and then divide into two identical cells. They can multiply very quickly.



binary fission form of reproduction where the DNA is copied and the cell splits into two cells

Eukaryotic cells are more complex than prokaryotic cells. With eukaryotic cells, two identical cells are also created from a single cell. But the process takes place in six steps:

1. Interphase: Each extended chromosome in the nucleus makes an exact copy of itself.

2. Prophase: Mitosis begins. Each chromosome and its copy are joined at their centers and shorten to form an X. The nuclear membrane breaks down at this stage.

3. Metaphase: The chromosomes line up in the middle of the cell. There is no nuclear membrane at this stage.

4. Anaphase: The sets of chromosomes separate, with one complete copy going to each end of the cell.

5. Telophase: New nuclear membranes form around each complete set of chromosomes. The chromosomes extend in the nucleus. Mitosis is completed.

6. Cytokinesis: The cytoplasm splits in two, creating two identical cells. The cell membrane forms around each cell.

mitosis the process by which the genetic material copied during interphase is separated

How to Copy a Cell in Six Easy Steps

FWAP
FWAP

It's amazing to think that huge plants and animals start out as single cells. Cell division makes tiny calves grow into gigantic giraffes and little tree seedlings into huge redwoods.

WHAT A NECK!



Cell division makes babies grow into adults. And people have cells that allow them to see, think, hear, and run.



If there's life, there are cells. Every living thing is made of them. And then there are all the cells you can't see.

HEY, DON'T FORGET UNDEAD THINGS! VAMPIRES ARE MADE OF CELLS TOO ... I THINK ...

Wahoo
Wahoo

We're surrounded by an incredible variety of cells of all sorts of shapes and sizes.

I LOVE YOU, RED BLOOD CELLS!

Cells are the building blocks of the most complex living things on Earth. You wouldn't be you without them!

THE END