Needs of Cells Strand from *Benchmarks* 5C Cells

Magnifiers help people see things they could not see without them. *(K-2)*

Most living things need water, food, and air. *(K-2)*

Some living things consist of a single cell. Like familiar organisms, **they need food, water, and air; a way to dispose of waste; and an environment they can live in**. *(3-5)*

Microscopes make it possible to see that living things are made mostly of cells. Some organisms are made of a collection of similar cells that benefit from cooperating. Some organisms' cells vary greatly in appearance and perform very different roles in the organism. *(3-5)*

All living things are composed of cells, from just one to many millions, whose details usually are visible only through a microscope. Different body tissues and organs are made up of different kinds of cells. The cells in similar tissues and organs in other animals are similar to those in human beings but differ somewhat from cells found in plants. *(6-8)*

Cells continually divide to make more cells for growth and repair. **Various organs and tissues function to serve the needs of cells for food, air, and waste removal**. *(6-8)*

Within cells, many of the basic functions of organisms—such as extracting energy from food and getting rid of waste—are carried out. The way in which cells function is similar in all living organisms. *(6-8)*

About two thirds of the weight of cells is accounted for by water, which gives cells many of their properties. *(6-8)*

Every cell is covered by a membrane that controls what can enter and leave the cell. In all but quite primitive cells, a complex network of proteins provides organization and shape and, for animal cells, movement. *(9-12)*

Within the cell are specialized parts for the transport of materials, energy capture and release, protein building, waste disposal, information feedback, and even movement. In addition to these basic cellular functions common to all cells, most cells in multicellular organisms perform some special functions that others do not. *(9-12)*