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MICROSCOPES
 WITHIN ALL OBJECTS THERE is a hidden world, much too tiny for us to see. With the invention of the microscope in the 16th century, scientists were able to peer into this world and discover the intricate and marvelous life of the microscopic world. They discovered that animals and plants are made of millions of tiny cells, and have been able to understand how various organisms called bacteria cause disease. Early microscopes consisted of a single magnifying lens, today's microscopes have several lenses and can be used to see objects as small as...

MICROSCOPIC LIFE
 ALL AROUND US THERE are living things that we cannot see because they are so small. They float in the air. They move in ponds and oceans, and they grow on rocks, plants, and animals. Microscopic life includes bacteria and tiny, single-celled organisms called protozoa and algae. It also includes the microscopic stages in the development of plants and animals, such as the pollen grains of flowers and the embryos of mammals. All these microscopic organisms are so small that we can see them only through a microscope. Viruses, or the smallest and simplest of all organisms, cannot be magnified even ten times before we can see them. They have a crucial role to play in the lives of millions of organisms and can be so important that the water in a well may be treated with chlorine to kill them and help to prevent disease.

HOW LIVING THINGS ARE CLASSIFIED
 Scientists classify living things, or organisms, into groups called kingdoms. This chart shows the five main kingdoms and the major types of organisms that belong to each one. Within a kingdom, organisms are divided into groups called phyla (singular: phylum). Scientists divide phyla into subphyla, and again into classes. Classes are divided into orders, then into suborders. Orders and their suborders are divided into families, then into genera, singular: genus, and finally into species. The human species belongs to the animal kingdom, the primate order, and the mammalian class.

HOW TO USE THIS CHART
 The chart is divided into five main sections, one for each kingdom. Each section contains a list of the major groups of organisms in that kingdom, with small illustrations of representative organisms. The chart is designed to help you find the classification of a particular organism.

MONERANS
 The smallest and simplest organisms are the monerans. They are made of one cell and lack a nucleus. They are divided into two main groups: bacteria and archaea.

PROTISTS
 The protists are a diverse group of organisms. They are made of one cell and have a nucleus. They are divided into three main groups: algae, protozoa, and fungi.

FUNGI
 Fungi are organisms that lack chlorophyll and are unable to make their own food. They are made of one or more cells and have a nucleus. They are divided into three main groups: yeasts, molds, and mushrooms.

ANIMALS
 Animals are organisms that are able to move from one place to another. They are made of many cells and have a nucleus. They are divided into many different groups, including insects, fish, reptiles, birds, and mammals.

PLANTS
 Plants are organisms that are able to make their own food. They are made of many cells and have a nucleus. They are divided into two main groups: monocotyledons and dicotyledons.

MONOCOTYLEDONS
 Monocotyledons are plants that have one seed leaf. They are characterized by their long, narrow leaves and their fibrous root systems.

DICOTYLEDONS
 Dicotyledons are plants that have two seed leaves. They are characterized by their broad, flat leaves and their taproot systems.