

THE HEIRARCHY OF STRUCTURE IN ANIMALS

(Nelson Science Perspectives, pg. 73-76)

_____ organisms, such as animals, are made up of many different _____ types of cells. Each cell is specialized to perform a particular _____. The _____ cells of jellyfish helps it capture its prey, whereas the light-emitting cells of female _____ can be used to attract a mate. Less unusual, but still highly specialized cells, include _____ and _____ cells, _____ cells and _____ cells responsible for detecting sights, sounds and odours.

Single-celled organisms, such as _____ and blue-green _____, function independently. They do not directly depend on any other _____. In contrast, specialized animal cells cannot survive on their _____. A single _____ cell, _____ cell, or _____ cell would quickly die if separated from its surrounding cells. These cells live and work as part of a much _____ group of cells that collectively make up the _____ of the animal. In fact, the body of a large animal may be made up of _____ of individual cells. It is this entire collection of cells working together as a whole _____ that is capable of survival and reproduction.

The _____ of animal bodies varies considerably. Some animals, such as _____, have a simple body structure. _____ and _____ are more complex. _____ (animals with _____), such as birds, have highly complex bodies.

To understand how specialized cells work together in complex organisms, consider the many major _____ that must be performed by entire organisms, such as _____, _____, moving and _____.

THE ANIMAL BODY – LEVELS OF ORGANIZATION

The bodies of animals look very different. Yet all animals are made up of _____ that are organized in a way that allows them to perform all of life's functions. There are levels of organization which each animal. These levels of organization form a _____, with the "most _____" at the top and the "least _____" at the bottom.

Consider the hierarchy of organization within a specific animal: a white tailed _____. The simplest level of hierarchy could be a _____ cell in the deer's heart. Each heart muscle cell is _____, allowing it to _____ to other heart muscle cells. Together, these muscle cells make up the muscle _____. The heart itself is at the _____ level of the hierarchy. An _____ is made up of two or more types of _____ that work together to perform a complex function. In addition to muscle tissue, the heart includes two other types of tissue: _____ tissue and _____ tissue. An

_____ system consists of one or more _____ and other structures that work together to perform a vital body function. The _____, _____ vessels, and _____ are all parts of the _____ system. The organism is made up of many different _____ working together.

The deer needs a circulatory system to deliver _____ and _____ to its entire body. This system requires a heart to pump the _____. It also needs a network of _____ and _____ to distribute the blood throughout the body. In turn, the heart is made up of _____ tissue, which _____, and _____ tissue, which keeps the heart _____ regularly. The tissues are groups of _____ cells.

ORGAN SYSTEMS

All animals accomplish the same basic functions regardless of their _____, _____ or where they _____. They all obtain _____ and _____ and eliminate _____. They all _____ and _____ to their environment, _____ and repair damage, and _____. The task of _____ systems is to perform these basic functions. Some well-known human systems from Figure 3 on pg. 75 include the _____ system which _____ the body and makes _____ possible. The _____ system produces _____ (in females) and _____ (in males). The _____ system takes oxygen from the air and removes _____ from the body. The _____ system transports substances around the body. The _____ system excretes waste and keeps the correct amount of _____ in the body. The _____ system sends _____ around the body. The _____ system breaks down the food you eat and makes it available to the body.

ORGANS

Each organ system is made up of highly specialized _____ and other structures that work together to perform the overall function of the system. The digestive system is made up of many organs, including the _____, small and large _____, _____, and pancreas. Most organs work within a _____ system. Some organs, however, play a role in more than one system. For example, the _____ is part of the digestive system and the _____ system (which makes hormones).

TISSUES

Animals have _____ major types of tissue: _____ tissue, _____ tissue, _____ tissue, and _____ tissue.

Each type of tissue contains many types of specialized _____ and each is found in most organ systems.

ANIMAL TISSUE TYPES

Complete this table by making a quick sketch of the tissue and adding the information from pg. 76.

TYPE	EXAMPLE	DESCRIPTION	FUNCTION
Epithelial			
Connective			
Muscle			
Nerve			