



# Biology Toolkit: Indicator 3.2.1

Student Handout: Biology: Indicator 3.2.1

## Goal 3.0 Concepts Of Biology

Expectation 3.2 The student will demonstrate an understanding that all organisms are composed of cells which can function independently or as part of multicellular organisms.

Indicator 3.2.1 The student will explain processes and the function of related structures found in unicellular and multicellular organisms.

### Assessment Limits:

transportation of materials (role of cellular membranes; role of vascular tissues in plants and animals; role of circulatory systems)

waste disposal (role of cellular membrane; role of excretory and circulatory systems)

movement (cellular – flagella, cilia, pseudopodia; interaction between skeletal and muscular systems)

feedback (maintaining cellular and organismal homeostasis - water balance, pH, temperature, role of endocrine system)

asexual (binary fission, budding, vegetative, mitosis: role in growth and repair, chromosome number remains the same) and sexual reproduction (angiosperms, mammals)

control of structures (cellular organelles and human systems) and related functions (role of nucleus, role of sensory organs and nervous system)

capture and release of energy (chloroplasts, mitochondria)

protein synthesis (ribosomes)

## Public Release - Selected Response Item - Released in 2009

### Biology Indicator 3.2.1

Use the information and diagram below to answer the following item.

Animal cells contain an organelle that helps release energy. A diagram of this organelle is shown below.

What is the organelle described?

- A. chloroplast
- B. mitochondrion
- C. nucleus
- D. ribosome

Correct Answer

B. mitochondrion

## Item

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