



## INTERNAL SYSTEMS UNIT IDEAS BIOLOGY - SBI 3U

This unit plan incorporates the use of the Smart Board in the classroom using a software package from [www.dissectibles.com](http://www.dissectibles.com) and made available through the company Teacher's Discovery.

### UNIT INTRODUCTION

Provide students with a large sheet of chart paper or roll paper cut to body size. Using markers have students work in pairs to trace the outline of one partner. Then ask students to draw in the major components of the digestive system, circulatory and respiratory systems. The teacher can call out the organs involved in each system as students draw them on the chart paper. Students should try to place the organs in the correct locations and size them accordingly.

### LESSONS (3 systems x 5 classes = 15 classes)

Use the Smart Board and dissectibles software as an aid to teach the anatomy and physiology of each system (digestive, circulatory & respiratory). This takes about two-75 minute classes per system. With the dissectibles software you can rotate the body, zoom in, and dissect the system as you teach. Follow up each system with a lesson on disorders of the system and then comparative anatomy of other organisms. The Smart Board can also be used as an online tool to access information from various organizations (such as the Canadian Diabetes Association, the Lung Association, or the Heart and Stroke Society) when discussing disorders. Include lab activities for each system such as an investigation into enzyme activity, the effects of exercise on heart rate, and measuring lung capacity.

## **CASE STUDIES**

Have students work in small groups to solve a medical case for an unidentified patient based on the lessons that they have already completed. Computers and internet access will be required for research. Have students present their case, all possible related conditions and a final diagnosis for their case, with reasoning as to why the other possible conditions were ruled out. Allow each group to use 5 PowerPoint slides to support their case study and use the Smart Board to present their findings to the class.

## **DISSECTION**

Smart Board can be used to assist with dissections that support the concepts in this unit. Online frog dissections are readily available. Some dissections may have been completed during the grade 10 course or during the Diversity unit of this course. If this is the case consider a rat or fetal pig dissection and use the Smart Board to display dissection diagrams.

## **UNIT PROJECT**

Using plasticine or modelling clay, in at least five different colours, have students make a model of a torso with all the components of the three organ systems discussed in the unit. The proper size, appearance, texture, and labels can be included in the evaluation of the project.

## **UNIT TEST (or Final Exam)**

As a question on the unit test, once again provide the outline of a body and have students draw on structures from the organ systems studied.