

# **Heart Dissection**

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**Grade Level:** Designed for 7<sup>th</sup>, but can be adapted to other grade levels

**Subject Area:** Science, Computer Skills

**Hypermedia Tools:** Pinnacle Studio 10, Webpage Design, Virtual Heart Dissection,

**Master Instructor:** Dr. Bohle, Cardiology Surgeon at Forsyth Medical Center

**Time:** 2 day lab (60 minutes); 3-5 days for webpage design and assessment

**Goal:** The learner will conduct investigations, use models, simulations, and appropriate technologies and information systems to build an understanding of the complementary nature of the human body system such as the heart.

## **Standard Course of Study:**

### **Science:**

**Objective 4.01:** Analyze how human body systems interact to provide for the needs of the human organism.

**Objective 4.02:** Describe how systems within the human body are defined by the functions it performs.

**Objective 4.03:** Explain how the structure of an organ is adapted to perform specific functions within one or more systems.

### **Technology:**

**Objective 2.01:** Explore evidence that “technology” has many definitions

**Objective 2.02:** Use information systems to: identify scientific needs, human needs, or problems that are subject to technological solution

**Objective 2.03:** Evaluate technological designs for: Application of scientific principles, Risks and benefits, and constraints of design

**Objective 2.04:** Apply tenets of technological design to make informed consumer decisions about: product, processes and systems.

**Introduction:** Our team’s project will focus on a heart dissection unit, learning about the different parts of the heart, and how the heart functions in relation to the body. It centers around group work, dissection of pig hearts, and using technology to show student knowledge through website design. The students will be accessing hypermedia tools to be included in their web site, which they will later share with the class.

**Teacher's Role:** Schedule master instructor to lead a discussion, create hypermedia resources that students will access to provide research information to increase their knowledge base, provide directions, know how to import pictures and how to use the website design programs, have a pre-made example of what the students website should include, be a resource for students.

**Activity 1:**

**Materials:**

Dissecting pan, dissecting, dissecting kit, safety glasses, lab apron, pig heart, and gloves

**Objective:**

Using a pig heart, students will observe the major chambers, valves, and vessels of the heart and be able to describe the circulation of blood through the heart to the lungs and back out to the rest of the body.

**Procedure:**

The teacher will introduce how the pig heart is related to the human heart in size, structure, and function. The teacher will introduce the doctor and review with students their pre-knowledge of heart function.

The students will be divided into groups of 4 and will begin the dissection lab following the handouts and teacher led instruction. They will dissect the external structure and internal anatomy of the heart.

Each person in the group will take turns being the recorder and video tape the dissection and learning process, which will later be made into a movie.

\*\*\* Teacher will remind students that they will be comparing this dissection to a virtual dissection and will be taking an on-line quiz over what they learned.

**Activity 2:****Materials:**

Computer Lab, web site design programs

**Objective:**

After the heart dissection lab students will take their knowledge, journals, and video clips to create a website to share with other groups.

**Procedure:**

The teacher will show the example of the pre-made/example website. All students' websites will need to include a/an:

- electronic journal of the heart lab
- prevention, description, detection, and correction of heart disease knowledge
- heart related graphics
- resources used
- anything else they want to include to make a great website

They may use any one of the following programs: FrontPage, One Note, Learning Village, or Microsoft Word to create their websites.

A CD or DVD supplied by the teacher will contain video segments, digital pictures, web quest directions, and instructions to help direct web site construction.

The teacher will also include a rubric so the students will know their expectations of the entire learning project.