

Visualize Processes

Introduction

Processes describe *How Things Work*. Research (Merrill, et. al.) provides us with effective ways to teach processes. This Skill Card builds on the Skill Card *Teach Processes* by illustrating ways the instructor or designer can increase the level of visualization in teaching processes.

Historical



In 1489, Leonardo da Vinci made this sketch of a section of the human skull. This sketch represents the desire of humans to understand how things work—or how they are put together.

Types

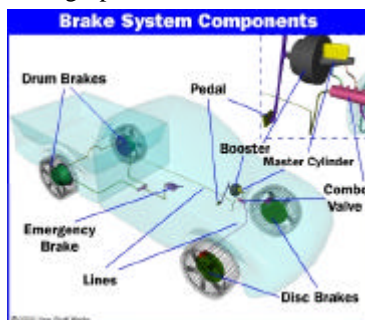
There are two basic types of processes:

- Technical or natural
- Business

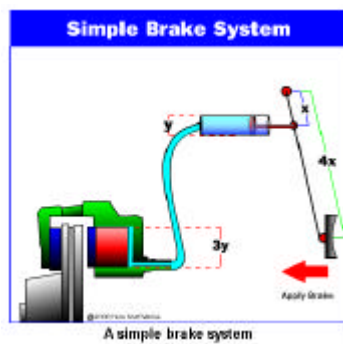
Since the key to teaching and learning processes is a visual or diagram, this Skill Card will provide many various examples of process visualizations from different subject areas.

Automotive

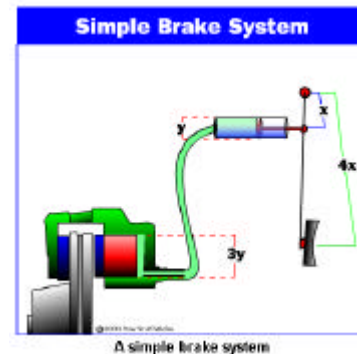
In a lesson on brakes, as an advanced organizer, the below overview graphic could be used:



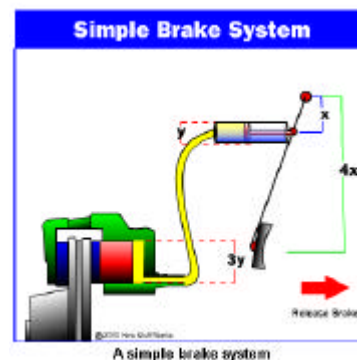
Eventually, the discussion must shift to how a brake works. The following *time-series* could help understanding:



Above, no pressure has been applied to the brake pedal. Below the pedal is pushed halfway down.



The diagram below shows full pressure applied to the brake pedal.



Critique and production

The diagrams are very simple with little extra detail (noise). Colors are used effectively—especially the changing color of the brake fluid as the pressure increases.

The brake diagrams were obtained from the wonderful website How Stuff Works (howstuffworks.com) The images were part of a Macromedia Flash

presentation (animated) so first had to be captured with a screen capture utility and then cropped with Adobe Photoshop.

Health

In this example, the lesson focuses on the flow of blood through the heart. If you were the learner, which of the visuals below would best help you to learn?

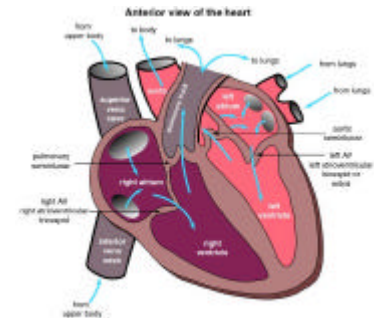


Diagram A – Nice use of color—minimum graphic detail—arrows and text could have been larger—arrows could use more contrast.

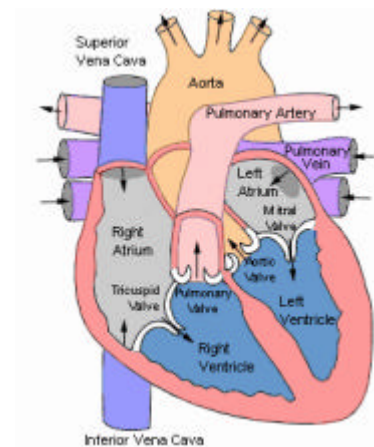


Diagram B. More color separating the various parts of the heart—arrows could be larger and of a greater contrast.

Critique and production

Both of these diagrams share the same fault—they are static. A *time-series* of diagrams (animation) would make the point much clearer. Both images were obtained using Google Image Database and imported directly.

