

**Forces in Fluids** ▪ *Enrich*

# Siphons

Like a hydraulic device, a siphon is an example of a device that functions because of fluid pressure. A *siphon* consists a liquid-filled tube in the shape of an upside-down *U*. Siphons can be used to move liquids from one container to another. For example, you might use a siphon to remove some of the water from an aquarium in order to clean it. Figure 1 shows a siphon moving water from container A to container B. The *intake end* of the siphon pulls water out of container A. The *discharge end* of the siphon delivers the water to container B.

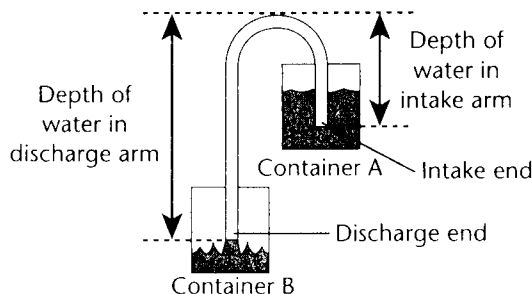


Figure 1

Remember that fluid pressure increases as the depth of the fluid increases. In Figure 1, the depth of water in the discharge arm of the siphon is twice the depth of water in the intake arm. As a result, the downward force of water pressure at the discharge end is twice the downward force of water pressure at the intake end. Because of this pressure difference, water flows from the intake end to the discharge end of the siphon.

*Answer the questions below on a separate sheet of paper.*

- At what point will the siphon in Figure 1 stop moving water from container A to container B? *when the level of water in container A falls to the level of the intake end of the siphon*
- Only one of the siphons shown in Figure 2 will function. Which one? only siphon 2 will function

*only siphon 2 will function*

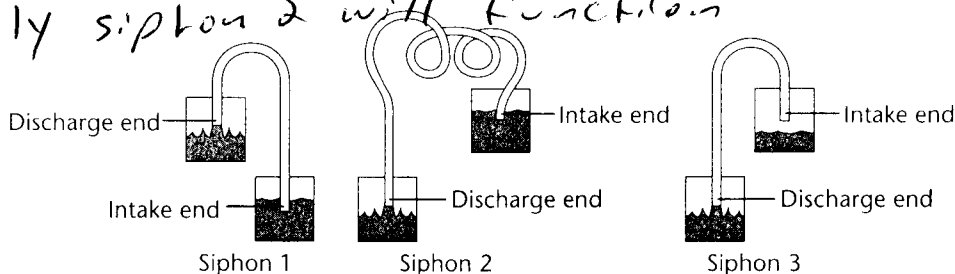


Figure 2

- State why each of the other two siphons in Figure 2 will not work.

*Siphon 1 will not work because the discharge end is higher than the intake end. This means that the water will flow back into the lower container. Siphon 3 will not work because the intake end is above the surface of the water in the upper container, so water from the upper container cannot be pulled into the siphon.*