

Practical 1 – Topic 6

Liquid flow and exponential decay

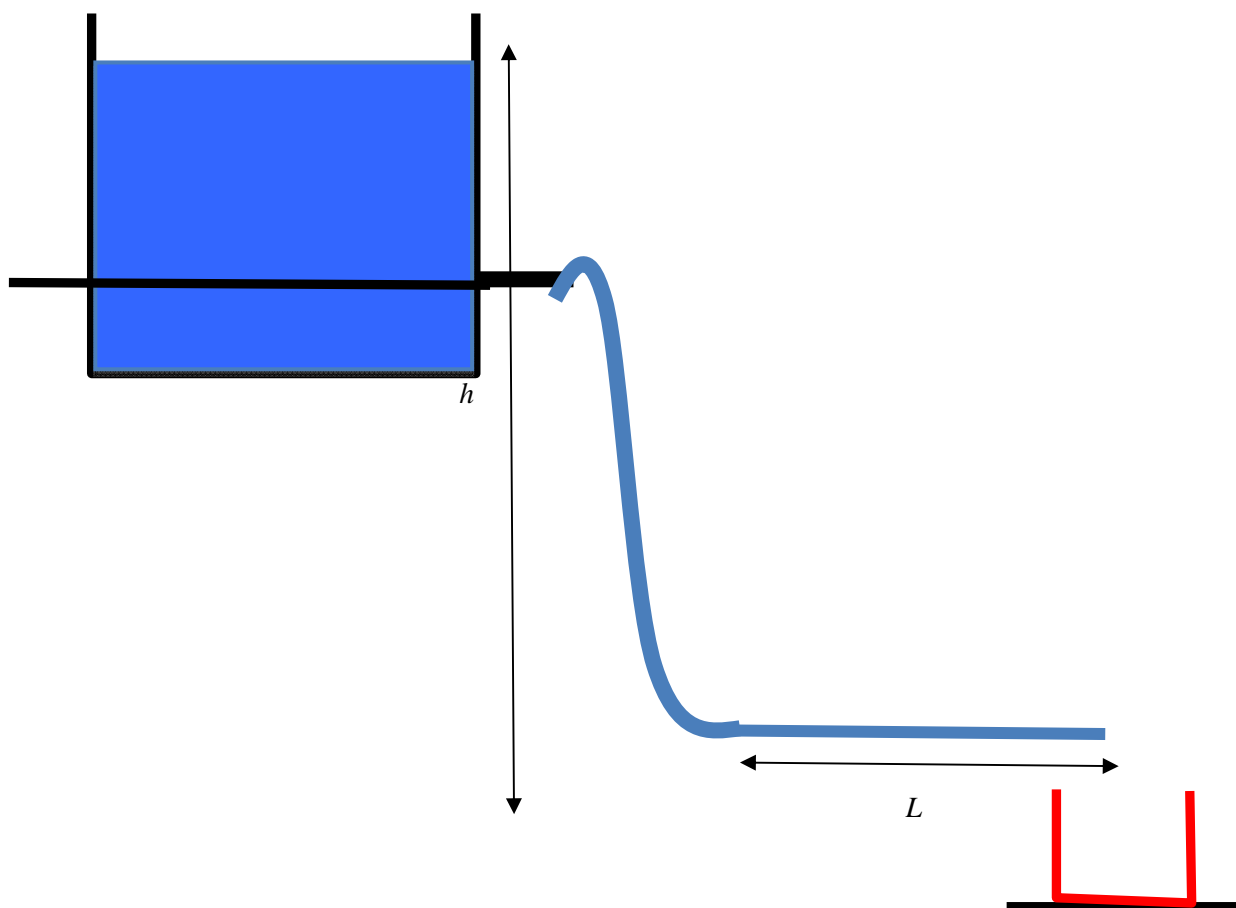
Criteria assessed

- DCP
- CE

Materials needed

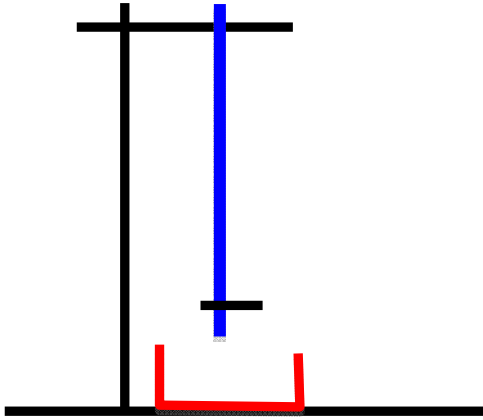
- Container of water
- Rubber tubing
- Capillary tube (burette)
- Stopwatch
- Stands and clamps
- Ruler

What to do



Set up the apparatus as above. The flow rate, i.e. the volume per unit time, Q , is related to the length, L , of the burette and the height, h , as $Q = \frac{\rho g h \pi r^4}{8 L \eta}$

- where ρ is the density of the water
- η its viscosity coefficient
- r is the radius of the burette.



If the burette is vertical and water drips from the bottom of the burette, the length of the column of water in the burette as a function of time is expected to be $l = l_0 e^{-at}$.

- Investigate these two relationships as much as you can.