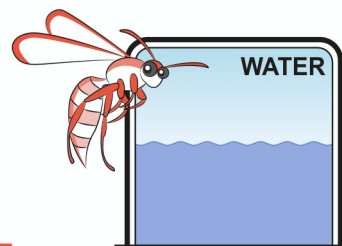


## Decanting – Teacher Notes



Water collected from wells, dams, rivers and the water table underground often contains contaminating solids. **Mixtures such as this can be separated using physical methods.**

**Decanting involves pouring the liquid portion away from the insoluble solid portion.**

Common examples of decantation are:

- Water is decanted (poured off) from cooked potatoes, carrots and peas.
- Wine develops sediment if left for a few years. This is particularly true of fortified wines such as port. In the past it was poured from the cask into a glass decanter and left to permit gravity to separate the clear wine from the denser “lees”. The clear wine was decanted into the glass and the lees were given to the gods.
- Mint tea, a favoured refreshing drink in many Arab countries, is made by pouring boiling water over mint leaves and sugar in a pot or glass. The mixture is left for a little time to infuse before the tea is decanted into a glass, leaving behind wilted mint leaves. (Traditionally it is returned to the pot twice before its third and final decantation).



- In farm dams and tanks, muddy water is left to settle to the bottom before clear water is drawn from the upper levels. As a child I was taught to let the water from the well stand for a while before decanting the clearer upper portion into another bucket for washing whites and crockery. Decanted water will be clearer but not necessarily any cleaner as bacteria and any dissolved solids will remain.

**NB** If the dirty water source contains colloidal mud particles it is almost impossible to produce clear water in the short term. However if it is left to stand for some days before decanting, the water poured off will be clearer than the original sludge.

If however the water contains soluble substances such as salt or tea, these cannot be separated by decantation.

If you have measuring cylinders students may compare the volumes of original dirty water and decanted clear water. Students should be encouraged to lower their eyes to the level of the top of the water and read the base of the water’s meniscus (slightly downward curved top) to get accurate measurements.

### Extension

Competitions to find the best decanters are fun. Initially using dried peas or marbles will permit a fair competition with all competitors having the same volume of water and solids. More advanced competitors may use soup mixes where a higher percentage of “fines” require a steady hand.

If beakers are not available for the activity, use empty plastic cool drink bottles and mark the side to compare.