# Carbon for Water Treatment: Experiment Instructions

## Aim

To see whether activated carbon or charcoal are better at removing fragrance molecules from water.

**NOTE TO TEACHERS: CHANGE THE TEXT BELOW TO INDICATE WHICH FRAGRANCES AND TACTILE DOTS YOU ARE USING**

## You will need

* 6 palm sized pots with lids
* 3 with [descriptor] tactile dots = [descriptor] fragrance
* 3 with [descriptor] tactile dots = [descriptor] fragrance
* A beaker filled about halfway with tap water
* 3 “centrifuge tubes” with lids
* 1 plastic funnel
* A small spoon
* Small bag of BBQ charcoal (labelled with [descriptor] tactile dots)
* Small bag of activated carbon (labelled with a [descriptor] tactile dots)
* A pen
* Tactile dots for labelling
* Watch or timer (optional – can be prompted by teacher)

## Procedure

1. Choose which fragrance you want to use and put the other pots to one side. You can use them to do the experiment another time.
2. Take three pots containing your chosen fragrance and top them up almost to the top with tap water
3. Close the lid carefully (you should hear it “click”) and shake gently to help the fragrance to dissolve in the water
4. Use your small funnel to pour all of the solution from one pot into the centrifuge tube (do this over your box in case you spill!).
5. Repeat this with the other pots until you have three centrifuge tubes containing the fragrance solution
6. Using the spoon provided and the large funnel add [number] spoons of crushed BBQ charcoal to the **first tube** and put on the lid. Label this tube with a [descriptor] tactile dots)
7. Using the spoon provided and the large funnel add [number] spoons of activated carbon to the **second tube** and put on the lid. Label this tube with a [descriptor] tactile dots)
8. Leave the **third tube** as it is with just the fragrance solution inside.
9. Shake the tubes for approximately 30 seconds
10. Leave for about 20 minutes and smell the pots. While you wait think about the questions on the next page.
11. Continue to monitor your solution every 10 minutes and make a note of your observations in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| Time | mins | mins | mins |
| Tube 1(BBQ charcoal) |  |  |  |
| Tube 2(Activated Carbon) |  |  |  |
| Tube 3(fragrance only) |  |  |  |

## Questions

1. Why do we leave one tube with just the fragrance solution in it?
2. Is there a significant difference between the fragrances when using activated carbon or charcoal?
3. What happens when you leave the activated carbon in the fragrance solution for a longer period of time?
4. What do you think would happen if you add more activated carbon or BBQ charcoal?
5. Do you think using a different fragrance will have the same result, why?
6. Where do you think this chemistry could be useful in the real world?