

Activated Carbon

On SCOPE's Carbon episode, Phoebe filtered the colour from dyed water using activated charcoal. Here's how you can try it at home!



What you need:

- Water
- Food dye
- A funnel
- Coffee filters
- A few clean glasses
- Activated Carbon (also called Activated Charcoal)
- Any other liquids you want to test out

What to do:

1. Crush up about five carbon tablets.
2. Add a drop of food dye to about 100ml of water in a glass.
3. Mix the food dye through the water thoroughly and then pour half of the mixture into a new glass.
4. Use the tip of a butter knife to add a small amount of the activated charcoal to the test glass.
5. Mix the powder through and then wait for 10 minutes.
6. Arrange a coffee filter in the funnel and then place the funnel in a clean glass.
7. Once the 10 minutes is up, pour the charcoal and food dye mixture into the middle of the coffee filter.
8. Once most of the liquid has drained through, repeat this filtering process once more with a fresh coffee filter.
9. Compare the filtered water to the original food dye mixture and you'll see that the charcoal has adsorbed a lot of the food dye!



What's happening:

The secret of the activated carbon's success is all the microscopic pores it has. They create a huge surface area which allows the carbon to adsorb all sorts of chemicals. This makes it useful for filtration and purification so you'll find activated carbon in pool filters, fish tanks and drinking water filtration systems. You can try the same experiment with all sort of household liquids including juice, cordial and milk. If you use charcoal tablets from the pharmacy you can even smell and taste the filtered liquids to see if they have changed in any other way.

