Record Sheet 1
Cinderella Separates a Mixture

Chemists need “pure substances” for their experiments. Sometimes, we too prefer separated substances. Some people, for example, sort out the onions or bacon of their lunch – they separate the “lunch mixture”. In the fairy tale “Cinderella”, the separation of a mixture is used as a punishment: The evil stepmother does not let Cinderella go to the dance …
Read what happens next:

“You, Cinderella?” she said. “You, all covered with dust and dirt, and you want to go to the festival? You have neither clothes nor shoes, and yet you want to dance!“ However, because Cinderella kept asking, the stepmother finally said, “I have scattered a bowl of lentils into the ashes for you. If you can pick them out again in two hours, then you may go with us.” The girl went through the back door into the garden and called out: “You tame pigeons, you turtledoves, and all you birds beneath the sky, come and help me to gather:
The good ones go into the pot,
The bad ones go into your crop.”
Two white pigeons came in through the kitchen window, and then the turtledoves, and finally all the birds beneath the sky came whirring and swarming in, and lit around the ashes. The pigeons nodded their heads and began to pick, pick, pick, pick. And the others also began to pick, pick, pick, pick. They gathered all the good grains into the bowl.

Do you have an idea how Cinderella could have separated the ash and the lentils herself?

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Try out your idea and describe what you did.

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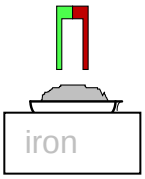
Record Sheet 2

Separate a mixture of sand, salt, iron filings and plastic beads! Write down your steps, observations and results! Sometimes you also need to complete the pictures.

The substances in my mixture are:

salt | sand | plastic | iron

Step 1: I hold a magnet into the mixture.

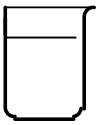


Observation: The iron sticks to the magnet.

separated substance: iron

The substances in my mixture are now:

salt | sand | plastic

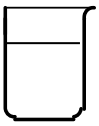


Step 2: I add the remaining mixture to water.

Observation: The plastic floats, the sand sinks and the salt is dissolved.

The substances in my mixture are now:

salt | sand | plastic | water

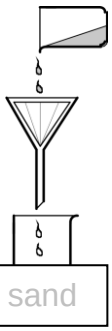


Step 3: I skim off the plastic beads with a spoon.

separated substance: plastic

The substances in my mixture are now:

salt | sand | water



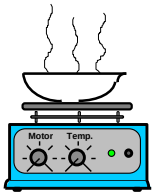
Step 4: I put the mixture into a filter.

Observation: The sand stays in the filter and the salt water passes through.

separated substance: sand

The substances in my mixture are now:

salt | water



Step 5: I heat the mixture.

Observation: The water evaporates and the salt remains.

separated substance: salt