**Pets Paws plc,**

Longclaw Industrial Estate,
Lower Steppinton,
LS11 8K9

Dear Scientists,

We at the laboratory of Pets Paws plc produce medicines for animals. We are making a new medicine and have found an active ingredient that we think can cure illness. It is similar to one that we already use but we hope that it will be better.

The active ingredient is in the form of crystals mixed with other materials. We have sent you a sample of this mixture and would like you to separate the active ingredient from the other materials, ready to put into the medicine.

We would then like you to follow our recipe so that each tablet contains the right amount of active ingredient. The tablets should also be a shape that a pet would swallow easily.

Please find enclosed some forms that we would like you to fill in to tell us the information you find out.

We thank you for any help you can give us and look forward to reading your report.

Yours sincerely,

*Dr Janette Smith*

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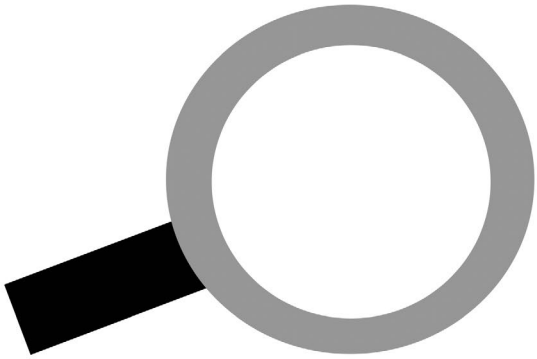
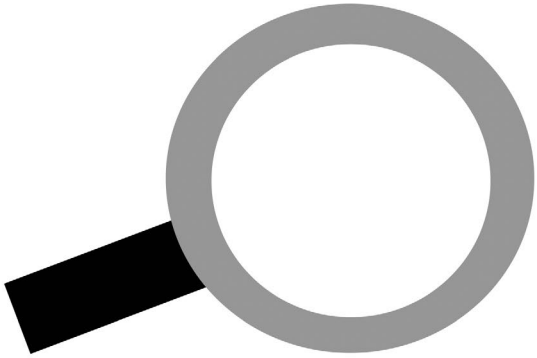
# Activity Sheet 6: Mixing the medicine


**Look carefully at the crystals and draw what you see:**

Salt crystals

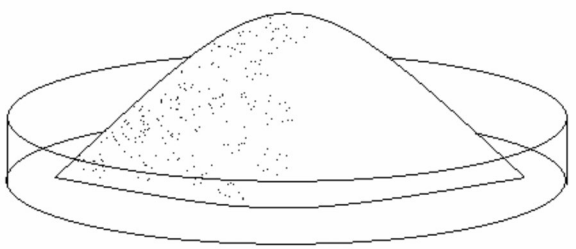


Active ingredient



# Activity Sheet 7: Separating the active ingredient

Look at the dry mixture with a hand lens or microscope. Draw what you see and write down words that describe the shapes, colours, sizes and feel of the bits.



The mixture contains two different materials. One dissolves in water, and one does not. How can you separate them? Talk to your group about which of these you might choose:

Pour the mixture through a sieve to collect the bigger bits.

Put the **mixture** in a sieve and pour cold water over it to wash away the **material** you don't want.

As you pour the **mixture** into another container, pick out the biggest bits with tweezers.

Put the **mixture** in **filter paper** and pour water over it. Leave the liquid to **evaporate** to leave the material you want.

Add water to the **mixture** and stir so that some of it **dissolves**. Pour the liquid through a **filter paper** into a dish. Leave it until the water **evaporates**, and the **active ingredient** will be left.

We would choose ...

Because ...