

- **This is how a microscope works by allowing you to see little things more clearly. The lens makes them look bigger to allow us to see them.**
- **The lenses look like what you see in a magnifying glass but when you put two together you get a much bigger magnification**



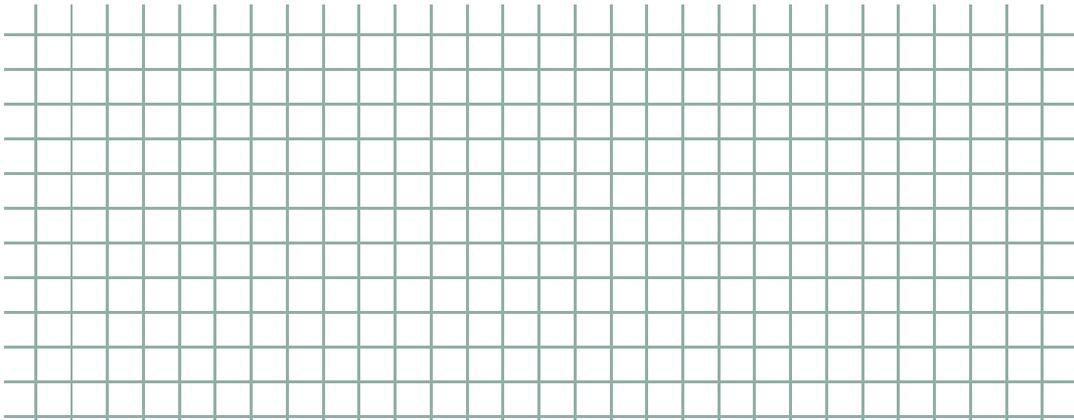
Activity 2 How much can I see?

- **Have a look at some printed newspaper or a ruler or your own fingers. Things look bigger but you see less area. The area you see is called the **field of view**.**
- **Have a look at a 2p. Draw around the area you can see here:**



Activity 2 How much bigger is it?

- **How many times bigger will an object appear in the microscope? Let's work it out**
- **Lay the hand lens on top of the graph paper and count how many squares you can see within it's borders. Colour that number of squares in on the graph paper and label it 'not magnified'**
- **Now lift up the hand lens slowly-you will see the squares seem bigger as they are magnified! As the paper comes into focus count how many squares you can see now. Colour these in on the graph paper and label it 'hand lens'**
- **Now place the graph paper under the microscope. How many squares can you see? Colour them in and label it 'microscope'**
- **Now fill in the key**



Key:

Number of squares coloured in



Not magnified



Hand lens

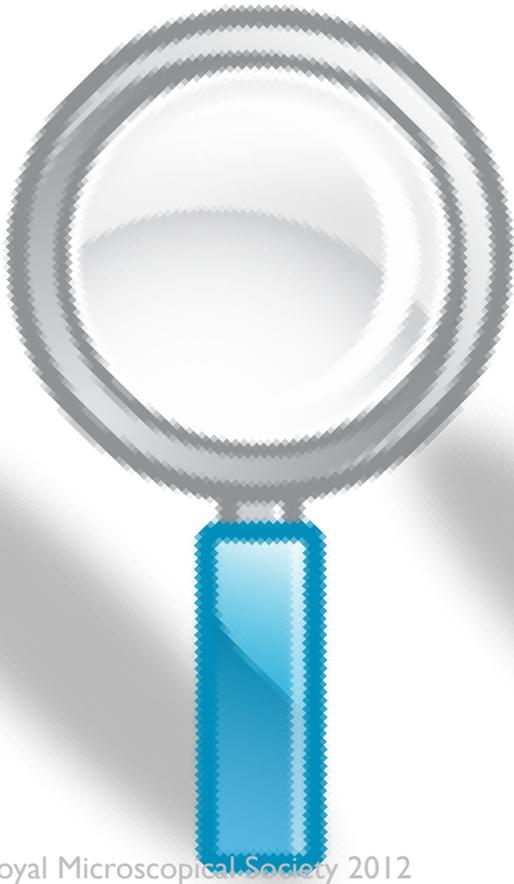


Microscope

- **You can now work out the magnification of the microscope. To do this find out how many times the number of squares coloured in for the 'microscope' go into the number of squares coloured in for 'not magnified'.**
- **Can you work out the magnification of the hand lens too?**

Activity 3 What details can I see?

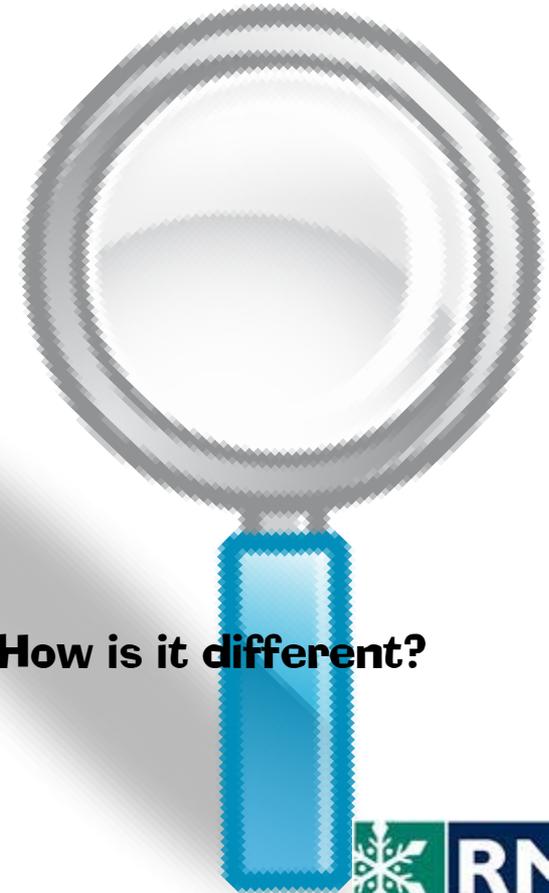
Choose a sample and draw a picture of it in the lens. Write the name in the blue handle.



Now imagine what you think it will look like under the microscope-draw it here



Now place it under the microscope and turn the focus wheel until you can see it clearly. Draw it here.



How is it different?

Activity 4: What details can I see?

- **Make your own slides by using the card ones supplied in the activity kit.**
- **Look around the classroom (window-ledges are good for insects!) or in the playground for leaves, pebbles and twigs and anything else you can find**
- **Use the Pritt-stick to stick them onto the card slides. Use the dark side for pale things and the pale side for dark.**
- **If you have a pond try dipping for creatures. Put some pond water in the petri dish and see what you can spot!**



Activity 4: Suggested everyday objects to look at

- **Suggested themes include:**
 - **Baking:** sugar (try using different types), flour, oats, biscuit crumbs, chocolate drops etc. Prepare them by either placing in the empty petri dishes provided and sellotaping them shut or by placing a drop of nail polish on a plastic slide and sprinkling same sample on it and allowing to dry
 - **Materials:** Rocks and sand, different types of paper, different types of wool/string/material
 - **Parts of plants** (roots, leaves, petals and other flower parts, seeds (poppy seeds are especially pretty)
 - **Minibeasts found outside** or often there will be dead ones on the windowsill!
 - **Kitchen items:** Coffee, teabags and their contents, chocolate powder, herbs etc
 - **Pond water** (aquatic shops have really good and cheap samples)
 - **Electronics**
 - **Other items that the children collect**



Activity 5 dissolving and reforming crystals

- **Have a look at some sugar, salt, coffee granules and hot chocolate powder under the microscope. Write 3 words to describe each sample.**

Hot Chocolate

★ _____
★ _____
★ _____

Salt

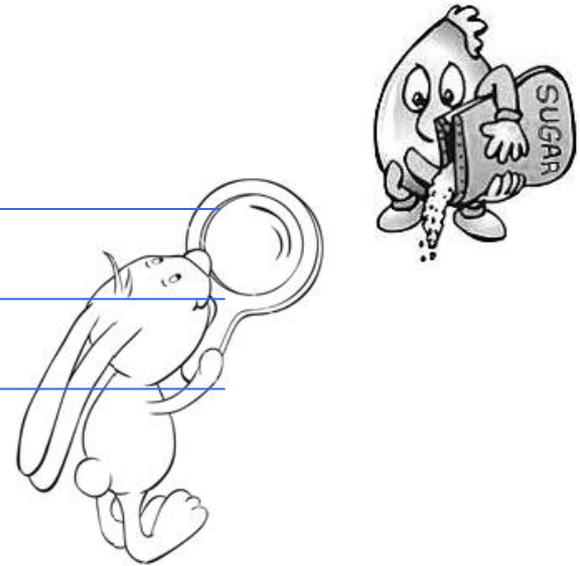
★ _____
★ _____
★ _____

Sugar

★ _____
★ _____
★ _____

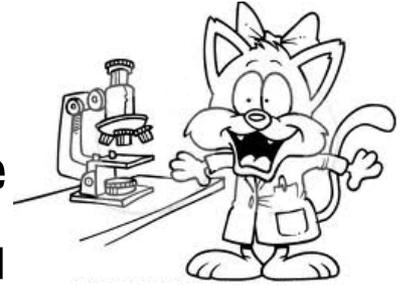
Coffee

★ _____
★ _____
★ _____

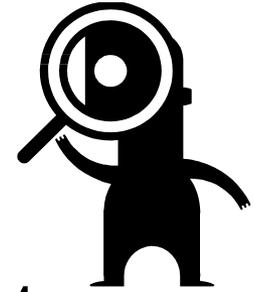


Activity 5 dissolving and reforming crystals

- **Now dissolve each sample in some warm water and stir. Look again-the crystals are losing their shape. If you have used warm water and stirred well you may see that they have all dissolved. You might add a drop of food colouring to help you see.**
- **Next day look again-the water has evaporated-can you see the salt and sugar?**
- **What about the coffee and chocolate?**



Activity 6 Super-sleuth



- **Help! Someone has broken into the sweet factory and stolen all the Jelly Babies.**
- **The R.M.S. needs YOU to help us catch the thief.**
- **We found several clues at the scene of the crime: a piece of newspaper, a piece of tissue (ugh!) and part of a fingerprint.**
- **There are 4 suspects: Barry, Becca, Bella and Barney.**
- **Look at the information we have gathered on the suspects and then look carefully at the clues to work out who the thief is. Good Luck!**



This is Barney. He works in a doughnut factory, packing the delicious sugary doughnuts into boxes. He enjoys reading the Daily News and he has a packet of 'Happy Nose' tissues in his pocket.



This is Bella. She works in a restaurant, using lots of herbs and spices in her cooking. She enjoys reading the Daily News and she has a packet of 'Atchoo!' tissues in her pocket.

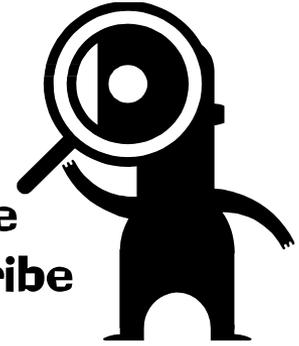


This is Barry. He works a lifeguard at the beach, enjoying the sand and the waves. He enjoys reading the Happy Times and he has a packet of 'Happy Nose' tissues in his pocket.



This is Becca. She works in a windmill, making flour and delivering it to the factories. She enjoys reading the Happy Times and she has a packet of 'Atchoo!' tissues in her pocket.

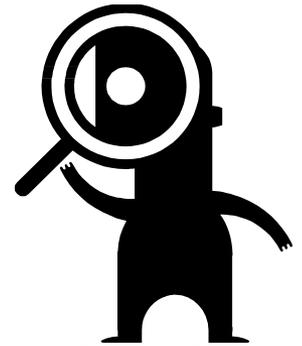
Activity 6 Super-sleuth



- **Look carefully at the newspaper, tissue and fingerprint samples. Can you match the clues found at the scene to the labelled tissue and newspaper samples? Discuss and describe why you think they match.**
- **Can you see similar patterns to the suspects fingerprints in the fingerprint clues? Give your reasons why you think they match.**
- **Use the table to work out who might be the thief. Put a tick (✓) in the boxes that match the clues**

| | Barney | Bella | Barry | Becca |
|-------------|--------|-------|-------|-------|
| Tissue | | | | |
| Newspaper | | | | |
| Fingerprint | | | | |
| Total | | | | |

- **Who do you think it could be? Why? Who do you think it could NOT be? Why?**



- **So, we still have some suspects.**
- **Luckily there was one more clue. A jelly baby was found at the scene. Examine it closely under the microscope.. What can you see embedded in the sweet? Who might use this in their job? Match your findings to the reference samples and the information you have about the suspects to work out who the thief is.**

- **I think the thief is _____ because _____**

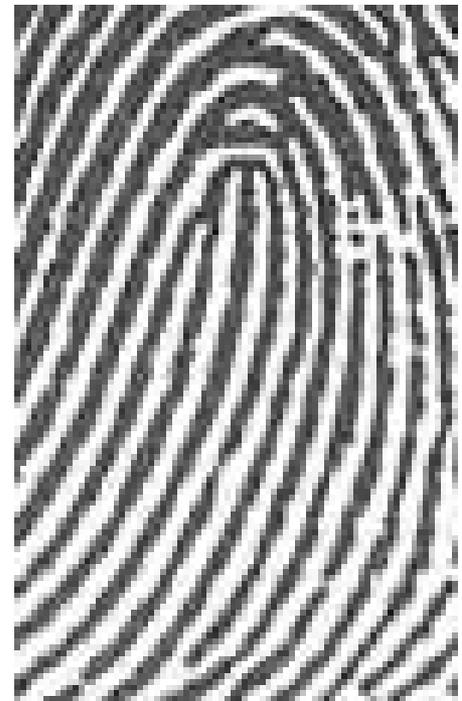
NOT FOR COMMERCIAL USE



Barry



Barney



Becca



Bella

