

UKFD: Life under the lens

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Outreach activities are a great way to learn how to explain your field of research to the non-expert and to enthuse the younger generation about life around them even if they cannot see it. Life under the lens is a hands-on outreach activity that provides people with the opportunity to use microscopes to visualise the detailed structures of fungal spores, meet their own microbes, and to design the organism responsible for the next emerging outbreak. This activity is great in that it can be scaled according to the amount of room available, knowledge of your participants and the number of volunteers.



Eager helpers ready to introduce people to the fascinating world of fungi at the Birmingham ThinkTank Science museum.

Key ingredients are:

- A microscope or two
- Sterile cotton buds/tooth picks
- Microscope slides and coverslips
- Antiseptic wipes (especially for mouth swabbing)
- A couple of brightly coloured posters
- A couple of tubs of everyone's favourite Play-doh, and maybe some crayons

A handful of happy helpers, armed with stickers
And a large helping of fungal enthusiasm!
In the run up to the event it is a great idea to contact companies
and explain what you are doing and why you are doing it. Many
companies are willing to offer some freebies to help support your
event, which make for great prizes.



Just some of the great prizes that have been donate to help us celebrate UK fungus day. Thank you to all that have contributed.

Generally I divide my area into three sections. The first station is an information stand, where we have a collection of fungal samples for people to look at (microscopic and fruiting bodies), books and we even included the Plants vs. Zombies computer game, as fungi are included in this game, and we linked the special abilities of the fungi in this game to actual virulence factors in real fungi. Scattered around the area we included bright colourful posters and fun quizzes for people to try, and many were surprised at the everyday items that are made from/with fungi.

Next we have the creative station, which contains pictures for colouring and Play-doh. We ask people to design the next emerging fungus using the information from the first station, and get then to describe its unique virulence factor, and we offer prizes for the most original designs. Even adults cannot resist the urge to play with Play-doh, especially when they know there's no cleaning up! A great idea is to set up a station for micrographia and get

people to draw different spore structures from filamentous fungi; we even hold a competition and give out a prize each hour for the best picture.



Some examples of the emerging fungi designed at our recent UKFD event.

The final station is the hands-on activity. People love to do their own experiment. For a general introduction to microbiology, swabbing around mouth is great, and you can see some really interesting things, including bacteria, cheek cells, and white blood cells. People really like looking at these samples, and having details pointed out to them (i.e. this is the nucleus, where your DNA is stored). This also gives people a sense of size, when comparing a bacterium to a cheek cell. Alternatively for a more fungal themed experiment, swabbing the scalp can reveal *Malassezia* spores, which can be visualised by adding dilute solutions of Calcofluor White, which will stain the chitin of the fungal spore blue under UV light, increasing the complexity of the experiment. The fungal spore growing kits were also a big hit, and gave everyone something to take away with them.



Capturing the interest of the public with a small experiment enabling them to see their own microbes under the microscope.

I have run this event for four years and found it to be great fun and each year I get something different out of it. My students love making the posters and designing new activities for this event. For example, one year we spent the weekend prior to the event making a huge papier-mâché macrophage and scaled fungi and bacteria, which was great fun in itself. I strongly recommend this activity to people as a great introduction to outreach.