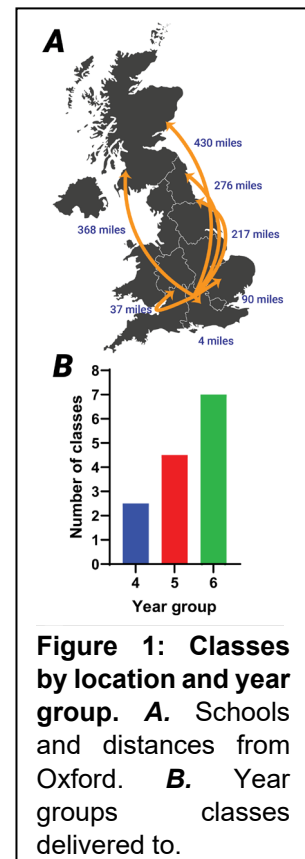


## Outreach Grant Report: Cell Survival in schools.

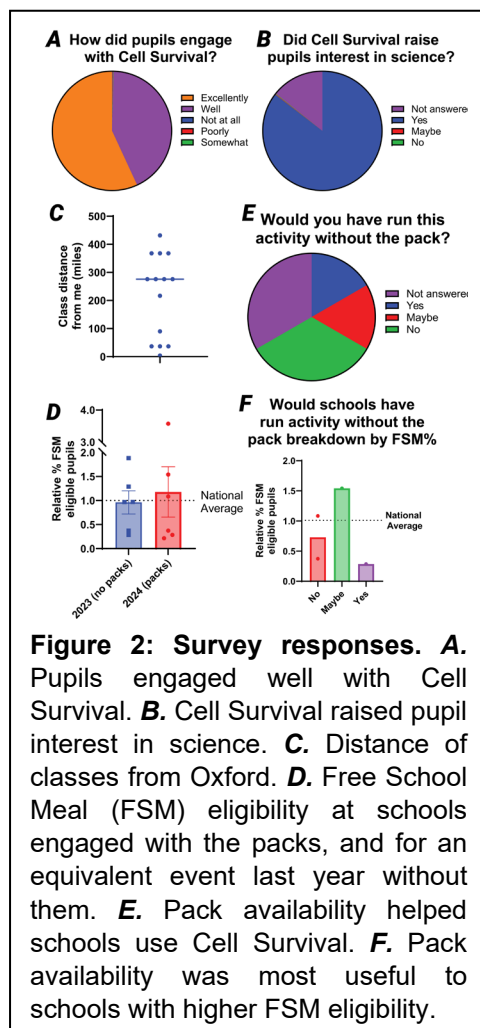
Cell Survival is an outreach activity I devised aimed to teach children in year 4 to year 6 about cells, cellular environments, and cellular signalling. I either give a short talk on the topic, including a short section on careers, or schools can choose to use pre-prepared videos on the scientific concepts. This is followed by pupils playing the Cell Survival board game, where they use cell defences (homeostasis mechanisms) to defeat dangers (stresses), and completing associated activity sheets. The Biochemical Society funding I received went to create packs containing these resources which I then sent out to schools ready to run these sessions remotely on and around British Science Week 2024. The impact of this activity was assessed by a survey sent out afterwards. Overall, I delivered this session to 14 classes in 7 schools across the country (Figure 1A&B).

### Aims & whether they were met

I comprehensively achieved the main aims I set out for this outreach by: providing a fun activity helping pupils engage in and enjoy a science lesson (Figure 2A), allowing pupils to meet a scientist and become more interested in doing science themselves (Figure 2B) and introducing the concepts of cells and cell signalling through engagement with the game.



**Figure 1: Classes by location and year group.** **A.** Schools and distances from Oxford. **B.** Year groups classes delivered to.



**Figure 2: Survey responses.** **A.** Pupils engaged well with Cell Survival. **B.** Cell Survival raised pupil interest in science. **C.** Distance of classes from Oxford. **D.** Free School Meal (FSM) eligibility at schools engaged with the packs, and for an equivalent event last year without them. **E.** Pack availability helped schools use Cell Survival. **F.** Pack availability was most useful to schools with higher FSM eligibility.

In addition to these aims centred around the pupil experience, a major reason I applied for the funding to create and distribute these packs was to overcome barriers to access that were more likely to impact those in more deprived areas. In particular I wanted to overcome geographic barriers to access for me (from the Vale of White Horse – the 42<sup>nd</sup> least deprived area for children) and barriers of teacher time, which are likely to be greater at schools in more deprived areas. Geographic barriers were handily overcome, with each class an average distance of over 250 miles away from me (Figure 2C). To assess how effective creating activity packs was at targeting more deprived schools, I assessed the proportion of pupils eligible for free school meals (FSM) at each school I sent a pack to, relative to the nations average (Scotland and England have different eligibility criteria so shouldn't be directly compared). This showed a slight bias towards more deprived schools compared to 2023 when I ran a similar event but didn't create any packs (Figure 2D). 75% of survey respondents who answered the question stated they would have been less likely to run this event without the packs (Figure 2E), with those schools having higher proportions of FSM eligible pupils than the one which would have run the event regardless (Figure 2F).

The aims of the Biochemical Society Outreach grant were also met as part of this project, with the development of a resource for schools which 100% of respondents who answered the question said they would keep for use in future years and which supported the delivery of an inspiring workshop for students.

### **Improvements for next time**

A number of improvements that could be made were noted in the feedback I received, including further clarification to some of the videos I provide (which were added in real time), the style of the dice used in the game, and that I should try to talk a bit less! I am slimming down my slides with the aim of running similar sessions next year.

### **Personal benefits**

I have a lot of fun running these sessions, particularly when I open the floor up to any and all questions. I like seeing pupils engage with aspects of science they wouldn't normally encounter, let their curiosity overcome them and start thinking that, actually, these topics can be really interesting, and scientists are normal people like them! My organisation, leadership, presentation, and communication skills have been drastically improved by running events like this, which I hope to continue to be able to do long into the future.