

TOP OF THE BENCH REGIONAL HEATS AND FINAL

Royal Society of Chemistry East Anglia Section

This year's Top of the Bench competition is in line with the RSC Chemistry, Sustainability and Circular Economy (CSCE) campaign. Globally there is a dire need to address the challenges associated with climate change, sustainability and the circular economy. Chemistry plays an important role in solving these challenges, and one of this year's aims is to highlight the important role chemistry plays. The students will be asked questions on general chemistry, and a hands-on experiment to determine the concentration of acid in unknown "Acid Rain" samples collected from a small town or city.

Your TOTB teams must comprise of four students – two from Year 9, one from Year 10 and one from Year 11. An entry form has been provided at the end of this document. If your school has registered, we kindly ask you to return the form on page 3 to rsceastcompetitions@gmail.com by Friday 29th October.

The competition will be in two parts, where all teams can participate in the regional heats (1), and then the top schools will be selected to participate in the regional final (2). Should you get through to the final, we will be awarding the top three schools with prizes for their individual team members and vouchers for schools to purchase new chemistry equipment from BETTER EQUIPPED EDUCATIONAL SUPPLIES LTD www.betterequipped.co.uk

- **1st Prize: £300 voucher for the school to spend on science equipment, prizes for the team members and RSC goodies**
- **2nd Prize: £200 voucher for the school to spend on science equipment, prizes for the team members and RSC goodies**
- **3rd Prize: £100 voucher for the school to spend on science equipment, prizes for the team members and RSC goodies**

The winning team/school will then go on to participate in the National Finals in 2022.

1. REGIONAL HEATS –1st November to 5th November 2021

This part of the competition is completely virtual. On Monday 1st November 2021, all schools will be provided with a Google Form quiz to complete and will have until 5pm on Friday 5th November 2021 to submit their answers. Only one submission of the quiz is allowed per school, so please make sure you are confident of your answers before submitting. You are advised to spend no longer than one hour on this, and remember, the answers are a collaborative effort, so you should ensure all members of your team are present and participating.

The results of this round will be communicated to you in the week commencing 8th November 2021.

2. REGIONAL FINAL – 22nd November to 26th November 2021

If you are selected to participate in the regional final, this round will consist of both virtual Google Form questions and an in lab practical. You will receive the form and laboratory manual on Monday 22nd November (teachers will receive these sooner to help prepare) and you will have until 5pm on Friday 26th November 2021 to complete all tasks. To help you prepare for this experiment or decide if you are able to participate in the competition, the following list of equipment and reagents will be essential:

- Lab coats – one for each person
- Safety spectacles – one for each person
- Lab gloves
- Pencils, pens, rubbers
- Calculator
- Notebooks

Equipment and Reagents:

- Pasteur pipettes
- Volumetric Pipettes (25 mL)
- Volumetric Flasks (250 mL)
- Pipette fillers
- Glass funnels
- Beakers
- Burette (50 mL)
- Burette stands and clamps
- Phenolphthalein
- Conical flasks (250 mL)
- Unknown samples of “Acid Rain” – sulfuric acid required
- Sodium hydroxide (standard solution)
- Distilled water in a wash bottle

Should your school wish to participate in the competition, but you don't have access to some of the chemicals or equipment, please email and we will be able to provide your school with help – rsceastcompetition@gmail.com

We hope you are able to participate in TOTB 2021 and look forward to receiving your school's submissions.

RSC East Anglia Committee

Please return this form to: rsceastcompetitions@gmail.com by Friday 29th October

School name & contact email	Postcode	Has the school entered before? (Y/N)	Student	Gender	Disability ¹	Do you require any adjustments or assistance?
				With which gender do you most identify? <input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Non-binary/gender diverse <input type="radio"/> Self describe <input type="radio"/> Prefer not to say	Do you consider yourself to have a disability as defined above? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Prefer not to say	
			Student 1			
			Student 2			
			Student 3			
			Student 4			

¹ The Equality Act 2010 defines a disabled person as someone who has 'a physical or mental impairment which has a substantial and long-term adverse effect on their ability to carry out normal day to day activities.' For example, this can include diabetes, learning difficulties, hearing or speech impairments, arthritis, heart problems, depression, epilepsy etc.