

RSC event participant agreement: *we agree to....*

- ...foster equal participation 
- ...not tolerate bullying, harassment, or discrimination 
- ...maintain privacy/confidentiality 
- ...respect people's identities & experiences 
- ...engage with kindness and respect 
- ...keep communication professional 
- ...consider diverse cultural backgrounds 
- ...contribute constructively. 

Supporting practical skills in chemistry

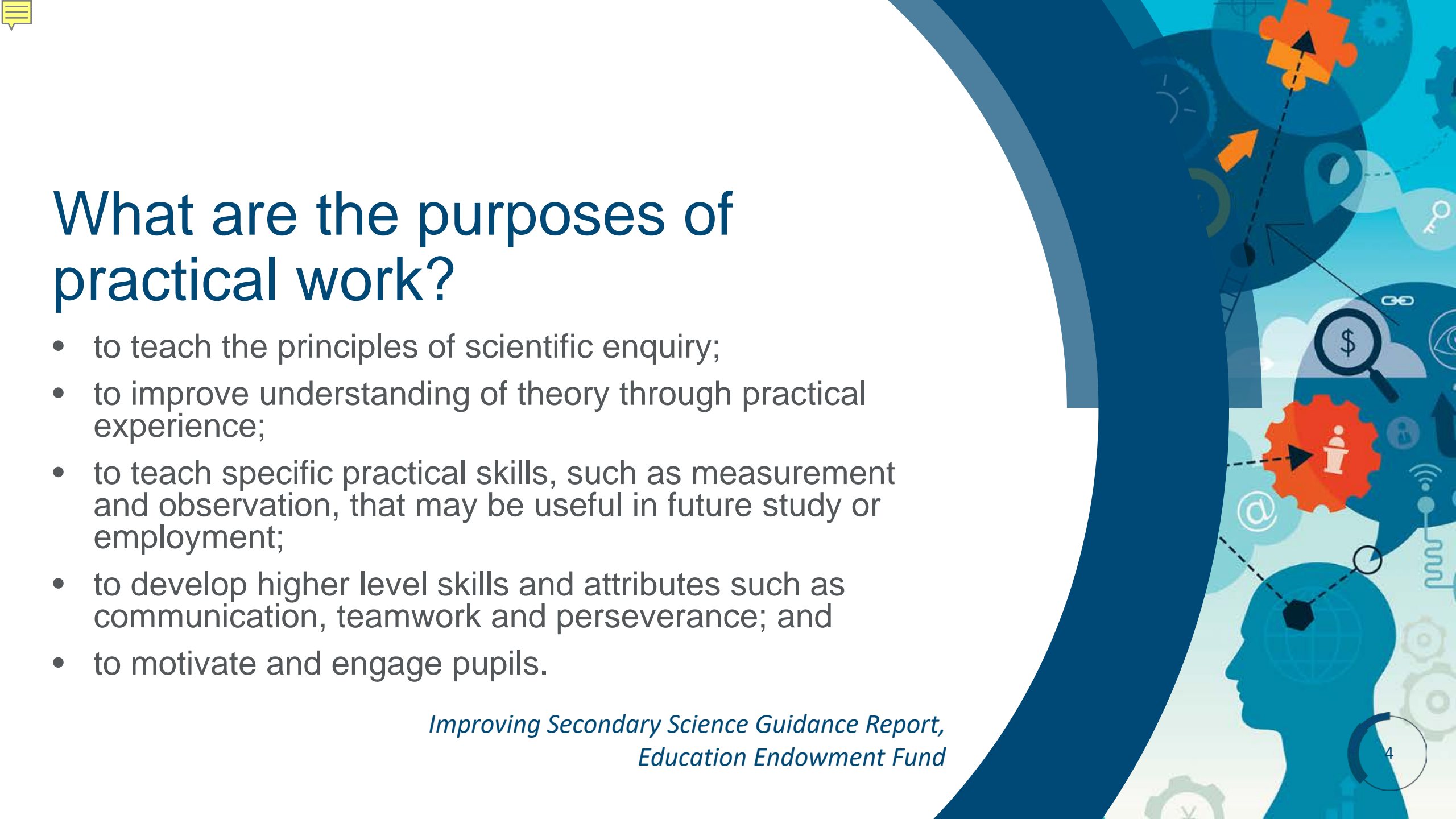
Introducing new resources
and old favourites from the
Royal Society of
Chemistry.



This session...

- Our resources to help with practical teaching,
- Ideas on how to use them in the classroom,
- A preview of what we are working on,
- A chance to steer our work in the future.

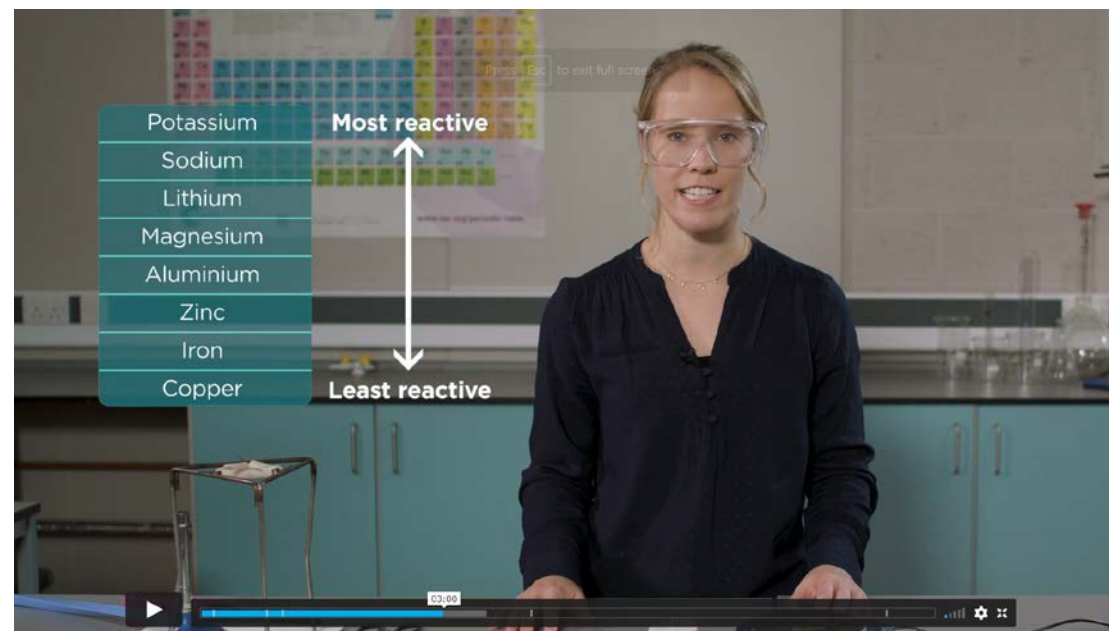




What are the purposes of practical work?

- to teach the principles of scientific enquiry;
- to improve understanding of theory through practical experience;
- to teach specific practical skills, such as measurement and observation, that may be useful in future study or employment;
- to develop higher level skills and attributes such as communication, teamwork and perseverance; and
- to motivate and engage pupils.

Poll: How would you use a practical video?



Go to www.menti.com

How do we see practical videos being used?

- Remote learning
- Post lockdown teaching
- Flipped learning
- Revision
- Support for absence/illness
- Students who are off timetable



Videos and simulations

How would you go about introducing titration?

<https://youtu.be/Thiii0ki5Xo?t=172>

Reset

4x zoom

11

12

13

30x zoom

Start

Stop

Sample site B

Trial	1st accurate titration	2nd accurate titration
Final volume (cm ³)		
Initial volume (cm ³)	11.40	
Volume added (cm ³)		
Average volume added (cm ³)		

Click Start to begin running the solution into the flask.

Continue adding the sample until the point at which the solution in the flask becomes colourless. (Click "Stop" at the point at which the colour changes permanently.)

3:07 / 3:20

Practical videos – a preview





Time	Pause and think questions
03:47/03:59	Why do we need to carefully lift the lid?
04:17/04:22	Why is it important that we don't lose any of the white powder?
04:35	Is the final mass more than or less than the starting mass?
05:06	When filling the measuring cylinder you must stand with it at eye-level. Why?
05:28	What are the products of a reaction between hydrochloric acid and calcium carbonate? Can you write a word and balanced symbol equation?
05:35	What do the bubbles forming tell us? Can you name the product?
05:41	What is meant by 'the reaction completes'?
05:51	There are some marble chips still visible in the beaker. What does this tell us about the reactants?
05:54	How might the reaction have been different if we had used larger marble chips?

Video preview

The clips that we showed during the live version of this workshop have been removed to reduce the file size.

However, you can watch a preview of the entire video here for a limited period. The video will be published in its completed form by the end of January 2021:

<https://edu.rsc.org/resources/conservation-of-mass-practical-videos-14-16-years/4012966.article>

Use questions creatively

Go to www.menti.com

Questions are also available in list form for teachers or as a worksheet for learners.

04:35 Is the final mass more than or less than the starting mass?

05:06 When filling the measuring cylinder you must stand with it at eye-level. Why?

05:28 What are the products of a reaction between hydrochloric acid and calcium carbonate?

Can you write a word and balanced symbol equation for this reaction?
_____ + _____ -> _____ + _____ + _____
_____ + _____ -> _____ + _____ + _____

05:35 What do the bubbles forming tell us?

Can you name the product?



Wrap-around resources

- Integrated instructions
- Teacher notes
- Technician notes
- Pause and think questions
- Worksheet
- Structure strips





Practical video topics

14-16 years

- Conservation of mass
- Electrolysis of aqueous solutions
- Halogen displacement reactions
- Identifying ions
- Reactivity series of metals
- Preparing a soluble salt

16-18 years

- Qualitative tests for organic functional groups
- Electrochemical cells
- Finding the activation energy of a reaction
- Synthesis of an organic liquid

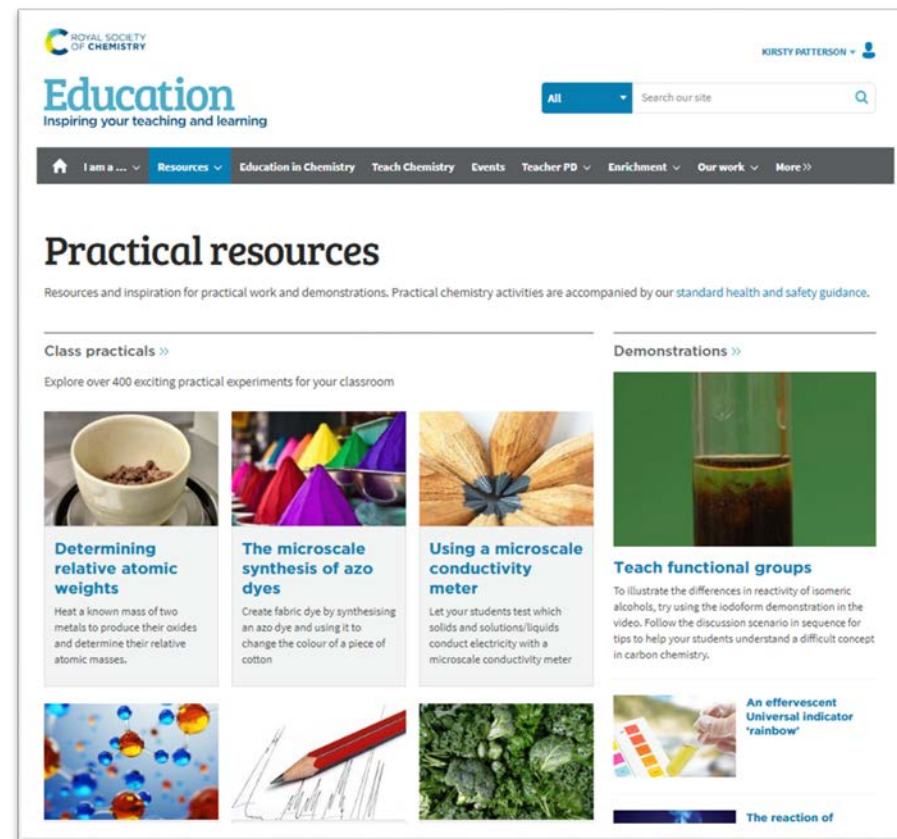


Resources from today's session:

All of our practical resources :
edu.rsc.org/resources/practical

More about our sessions at the ASE
Conference:
edu.rsc.org/ase

Follow us on twitter: @RSC_EiC



The screenshot shows the 'Education' section of the Royal Society of Chemistry website. The header includes the RSC logo, the word 'Education', and the tagline 'Inspiring your teaching and learning'. A search bar is visible in the top right. The main navigation bar contains links for 'I am a...', 'Resources', 'Education in Chemistry', 'Teach Chemistry', 'Events', 'Teacher PD', 'Enrichment', 'Our work', and 'More'. The page title is 'Practical resources', with a subtitle: 'Resources and inspiration for practical work and demonstrations. Practical chemistry activities are accompanied by our standard health and safety guidance.' Below this, there are two main sections: 'Class practicals' and 'Demonstrations'. Under 'Class practicals', there are three featured activities: 'Determining relative atomic weights' (with an image of a beaker), 'The microscale synthesis of azo dyes' (with an image of colorful dyes), and 'Using a microscale conductivity meter' (with an image of a conductivity meter). Under 'Demonstrations', there is one featured activity: 'Teach functional groups' (with an image of a test tube). At the bottom, there are four smaller images representing other resources: 'An effervescent Universal Indicator "rainbow"', 'The reaction of', and two other unlabeled images.



Thank you