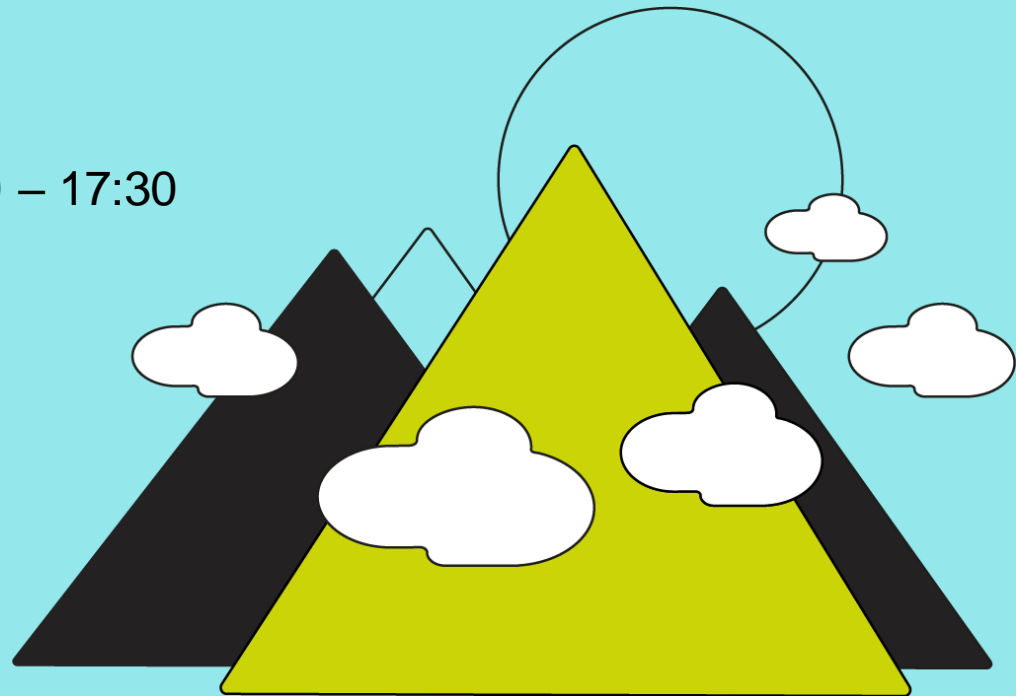


# Pearson Edexcel GCSE Science (9–1) Online Network

**Effective 'teacher talk' that supports  
learning in the GCSE Science classroom**  
with Pritesh Raichura

Wednesday 22 March 2023, 16:00 – 17:30

Andy Woods

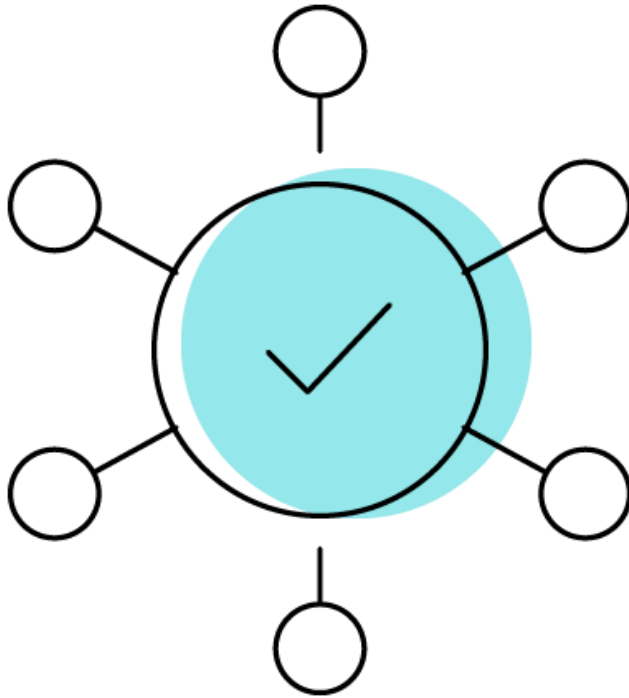


# Getting to Know You...



Andy Woods – Pearson Edexcel

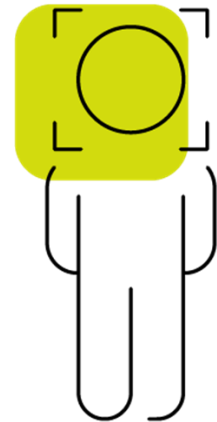
# Group Chat 'Test' Question



# Poll 1

Which **best** describes your role in school?

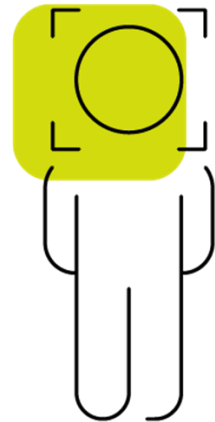
1. Head of department
2. Responsibility holder in science
3. Classroom teacher
4. Early career teacher
5. Senior leader
6. None of the above



# Poll 2

Which exam board do you use for science at KS4?

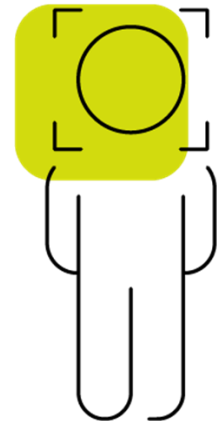
1. Edexcel
2. AQA
3. OCR
4. Not applicable



# Poll 3

Where are you dialing in from today?

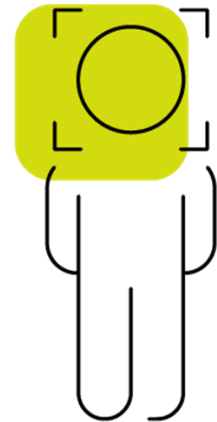
1. North-West England
2. North-East England
3. East Anglia
4. Midlands
5. South-West England
6. South-East England
7. London
8. Wales, Scotland or Northern Ireland
9. Outside the UK



# Poll 4

Which would you say is your specialism in science at KS4?

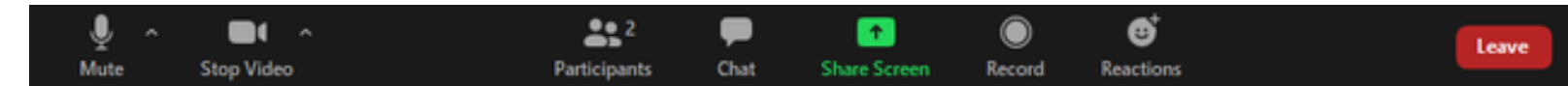
1. Biology
2. Chemistry
3. Physics
4. All of them!



# Using Zoom

## Chat box

Comments can be shared with everyone or you can ask me a private question which I will answer anonymously

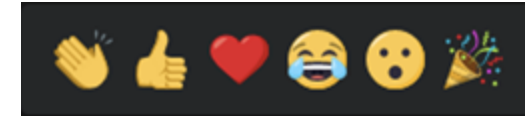


## Mute

Please mute yourself unless you are talking

## Camera

Can be 'toggled' on or off

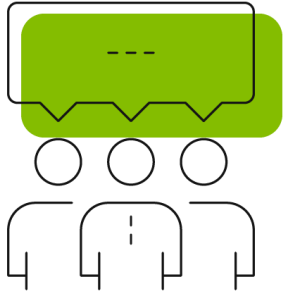


## Poll



Your host may launch a poll





# **Effective 'teacher talk' that supports learning in the GCSE Science classroom**

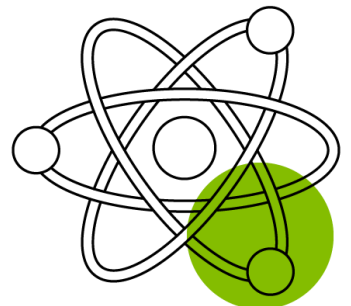
Pritesh Raichura  
Head of Science



@Mr\_Raichura



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# Outline

1. Instructions
2. Explanations
3. Questioning
4. Tips for observers



@Mr\_Raichura



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# Lesson Clip

- Science lesson
- Ark Soane Academy
- Year 7
- Reproduction



@Mr\_Raichura



BunsenBlue

# Set Them up for Success

- Desks in rows
- Stay rooted at the front
- 3-2-1 SLANT
- No group work
- Use behaviour system



@Mr\_Raichura



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# 1. Instructions

**Aim:** reduce barriers to follow instructions; offer incentives.

- Chunk into concise steps = minimise cognitive load
- When I say go and not before...
- Ready? ... go! 10, 9, 8...
- Praise galore! Praise for speediness or excellence
- Routines = minimise cognitive load (consistency)
- Competition
- Reduce variety of tasks

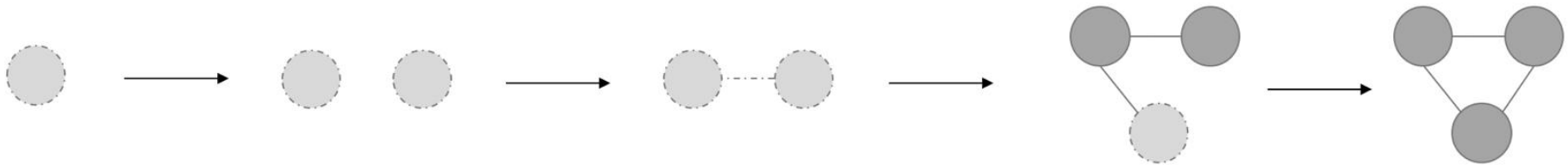


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# Building Understanding



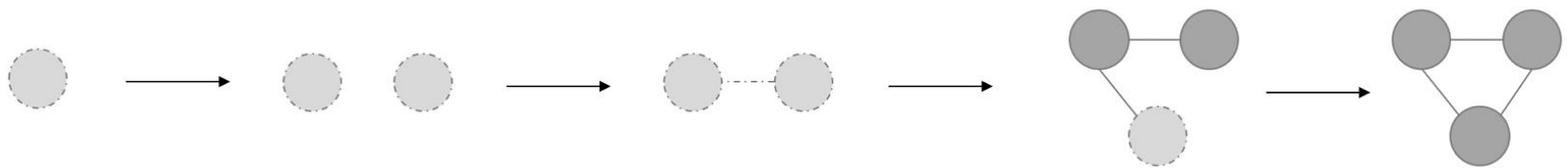
@Mr\_Raichura



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# In the Classroom

Inside	Outside
Attention	Behaviour
Schema building	Explanation, participation
Schema strengthening	Rehearsal, practice
Correcting error	Checks for understanding, feedback





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## 2. Explanations

**Aim:** deliver knowledge **explicitly** and check pupils are **following**.

- Provide a clear vision for the lesson
- Deliver a clear step-by-step explanation
- Concrete before abstract
- Draw diagrams in real time to support explanation
- Don't play 'Guess What's in My Head'
- Knowledge and memory are the foundations for 'thinking hard'




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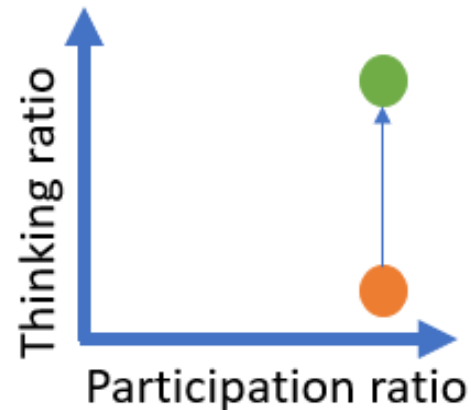
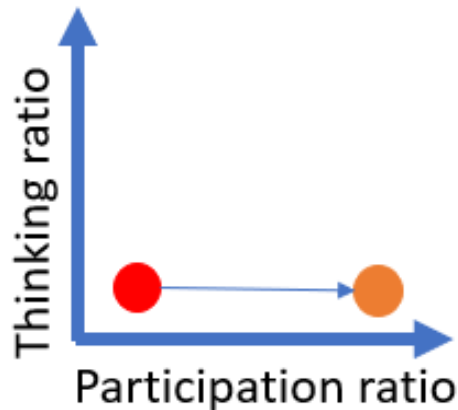
© feverpitched / 123RF

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# Why High Frequency Questioning?

- Assume pupils are not listening
- Assume pupils do not understand



# Strategies

- Choral response
- Turn and talk
- Cold call: question–pause–name
- Heads down
- MWBs




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### 3. Questioning

- Check for listening after every sentence or two
- Rehearse: turn and talk
- Repetition  $\neq$  thinking, but it is necessary
- Build up from easy to hard as the explanation progresses:
  - Long stem to short stem
  - Recall to thinking harder.
- Flip the question
- Insist on full sentences



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# Rehearsal

**Aim:** strengthen nodes and links in schema.

- Lots of choral response – long stem, short response
- Turn and talk: give sentence starter or words to include
- Be sure they are ready to answer independent practice rather than other way around
- Feedback lands **much** better



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## 4. Tips for Observers

- Are all pupils listening? Did the teacher notice and act if not?
- Are explanations broken down sufficiently? Concrete before abstract?
- Is the thinking time given proportional to the difficulty of the question?
- Do the chosen strategies of questioning match the teacher's intention (motivate vs increase rigour)?
- Does the teacher encourage participation through their narration?
- Question–pause–name for cold-calling?
- Does the teacher avoid repeating the question?
- Does the teacher use filler words unintentionally?
- Is the teacher rounding up pupil answers?



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# Q&A



@Mr\_Raichura



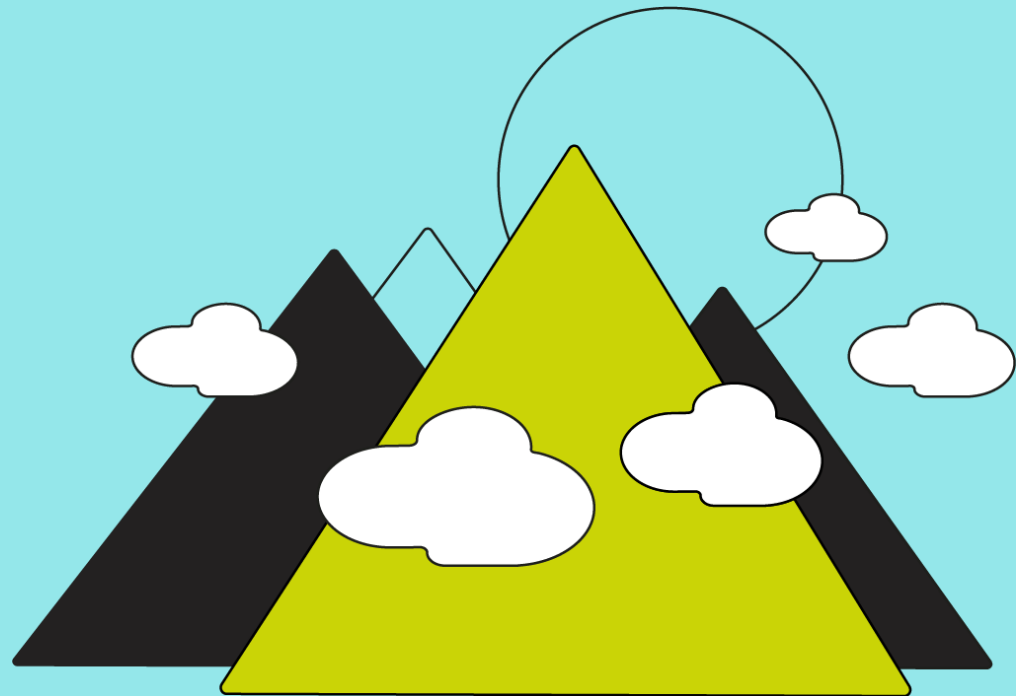
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A large, solid dark blue circle centered on a white background. Inside the circle, the text "End of Main Section" is written in white.

End of Main Section

# Final Messages

Andy Woods – Pearson Edexcel



# News From the Quals Team



The banner features a dark blue background with a stylized DNA double helix on the right side, composed of red, yellow, and blue segments. The Pearson logo is in the top right corner. The text 'Edexcel GCSE (9-1)' is in yellow, and 'Science' is in large, bold yellow letters. A dark blue bar at the bottom contains the white text 'Accessible papers. Unbeatable support.'

Pearson

Edexcel GCSE (9-1)

**Science**

Accessible papers. Unbeatable support.

# 'View from the Lab' Podcast



**Previous episodes** have included:

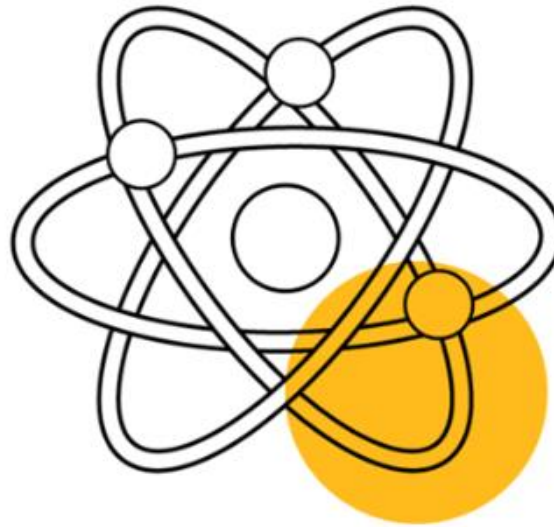
- Evidence based science teaching with **Adam Boxer**
- Diversity, Equity and Inclusion in science education with **Kaye Jones** and **Rebecca Durose Croft**
- Teaching Science in England's 'strictest school' with **Pritesh Raichura**.

You can find and subscribe to our podcast on Soundcloud, Spotify, Amazon Music and Apple Podcasts.

# Introducing...

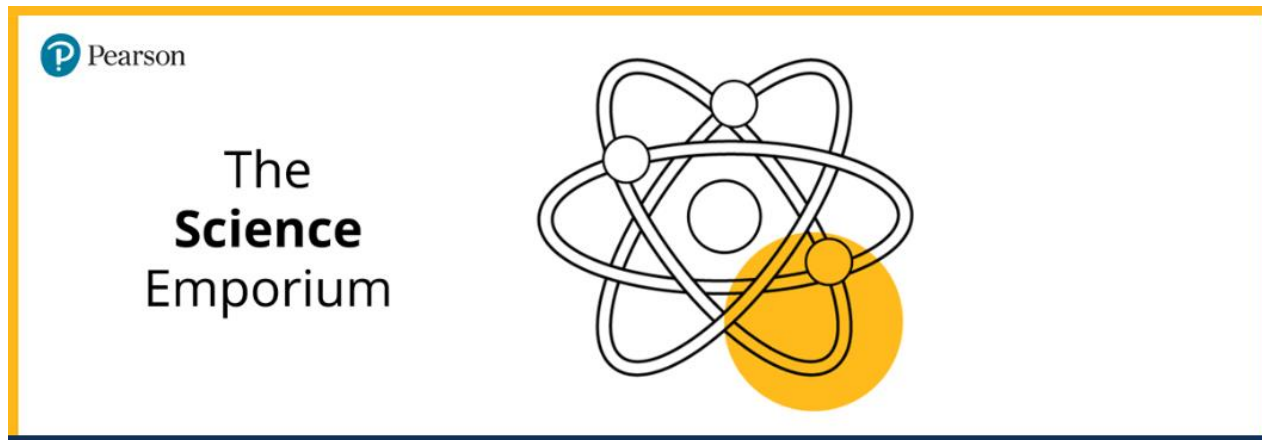


The  
**Science**  
Emporium

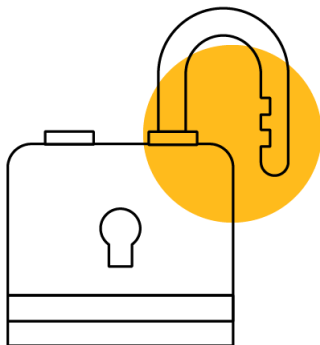


[www.pearsonscienceemporium.com](http://www.pearsonscienceemporium.com)

# What Is It?

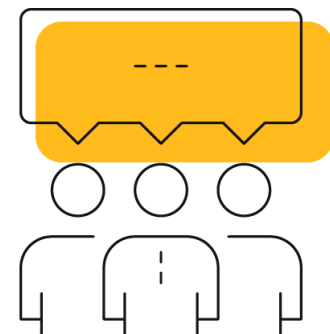


Accessing important documents with ease



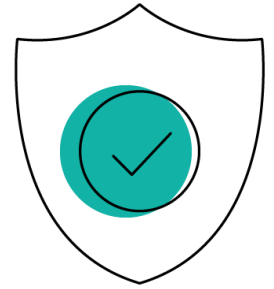
Building a Pearson Edexcel community

To discuss and share ideas





# What's in There?

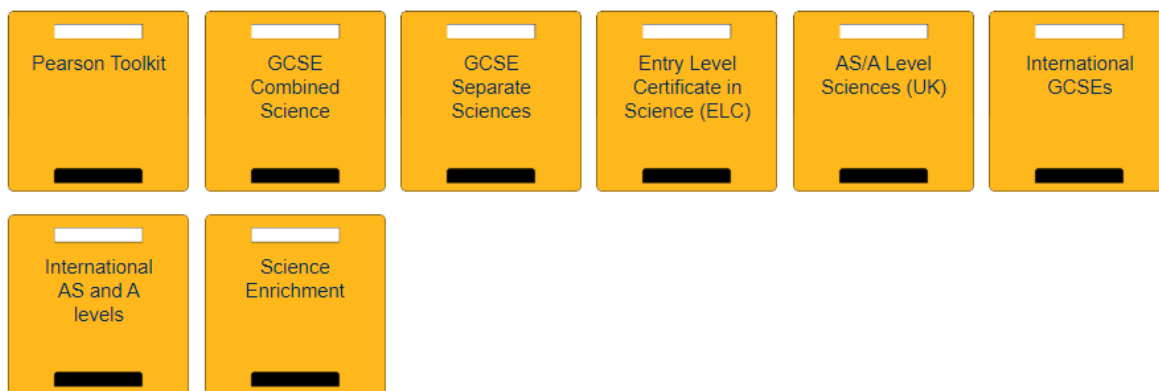


- All UK and international level GCSEs and A level qualifications including [Entry Level Certificates \(ELCs\)](#)
- All the [specification](#) documents
- All the recent exam papers, mark schemes and examiner reports 'bundled' for your convenience, year by year
- Practical [support folders](#), with [essential documents](#) to help new teachers and those teaching outside of their specialism
- [Forums you can join](#) to provide teacher-to-teacher support for all our qualifications.

# Science Emporium Screenshot



## Science Emporium



GOT A QUESTION?

Contact Us

FAVOURITE CABINETS



# Key User Functions



Single login



Quick  
downloads



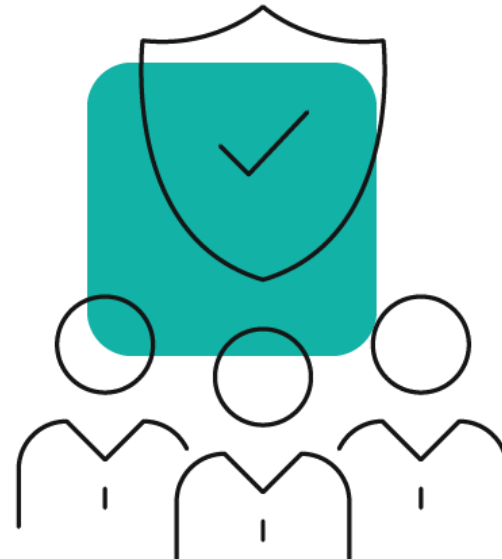
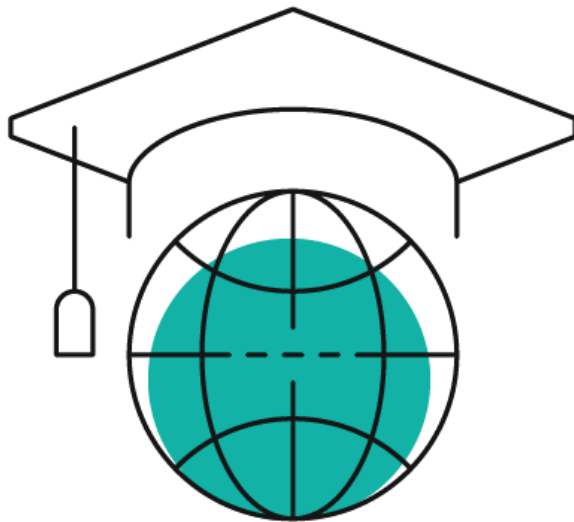
Multiple download  
options



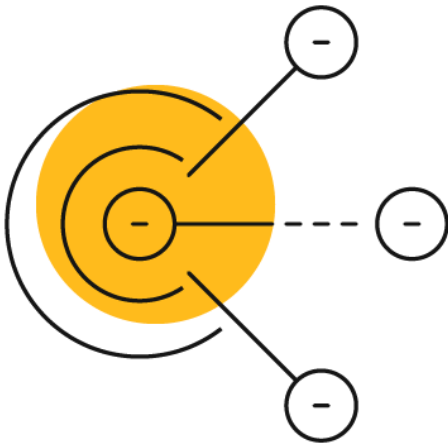
Responsive  
cabinets

# Who Can Apply for Membership?

- Teachers who have a Pearson Edexcel Online (EOL) login can apply for membership.
- The Exams Officer at your school or college can also organise a login on your behalf.



# How Will it Develop?

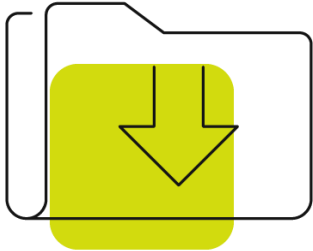


It will develop:

- in **response** to you, our teacher community
- as and when qualifications **change**
- when **new** support documents are produced
- using **website analytics** to guide improvements.

# Three Key Emporium Take-Aways...

Essential documents



... that are easy to download.

A community of like-minded teachers



... supporting each other.

A place for innovation



... where Edexcel teachers shape its direction.

**ActiveHub.** Powered  
by insight. Guided by you.



# Introducing **ActiveHub**

ActiveHub is the next step in digital teaching and learning. It brings together:

- assessment
- rich data insights
- next generation independent intervention practice.

These elements give you the tools you need to help your students reach their full potential.

Driven by data insights, ActiveHub provides everything on one platform to create a powerful online learning experience, anytime, anywhere.

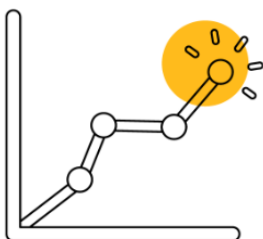




# How Can **ActiveHub** Support Me?

## Assessments

- Easily custom-build and set your own assessments from a bank of questions with the **Assessment Builder**.
- Use ready-made assessments and past papers from our **Assessment Library** to identify areas where students need support and to prepare for their exams.



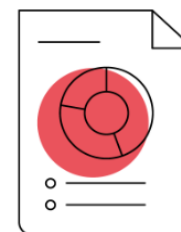
## Insights

- Powerful data insights feed into the **Insights Dashboard**, helping you give your students a clear path to progression.
- The **Insights Dashboard** shows you how each of your students are performing and identifies their learning gaps.



## Learning Resources

- Access a range of **resources** developed by experienced teachers and subject experts including videos, worksheets and auto-marked activities.
- Assign targeted tasks to individual students or whole classes for flexible learning in response to the data insights.



# ActiveHub for KS4 Science

ActiveHub is:

- available for Pearson Edexcel and AQA
- closely aligned to specifications.

Pearson Edexcel	AQA
GCSE (9–1) Combined Science	GCSE Combined Science: Trilogy
GCSE (9–1) Biology	GCSE Biology
GCSE (9–1) Chemistry	GCSE Chemistry
GCSE (9–1) Physics	GCSE Physics

**Engaging resources**

**Flexible**

**Powerful insights**



# KS4 Science in **ActiveHub**

## **Assessments**

- Past papers\*
- Baseline
- End of unit
- End of year\*
- Assessment Builder

\*Pearson Edexcel only

## **Learning resources**

- **Videos** explaining difficult concepts, modelling worked examples and demonstrating core/required practicals
- **Online resources** with instant hints and feedback to address misconceptions and support independent learning
- Editable and printable **worksheets**



# Learn More



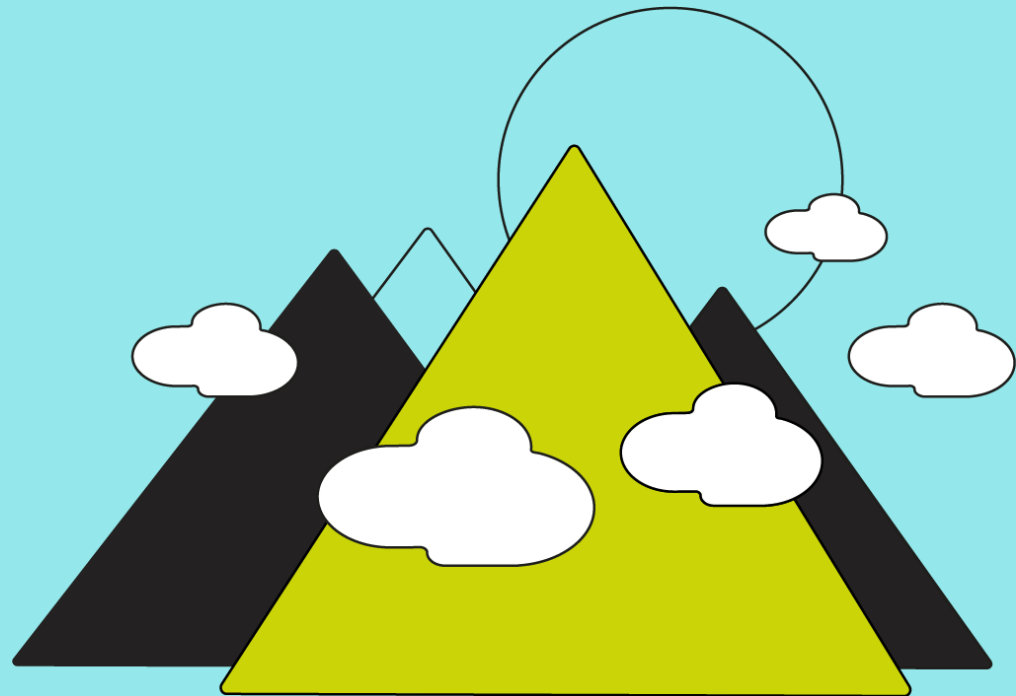
[Visit the ActiveHub webpage](#)



[Get a free trial](#)



# End of Messages



# Need More CPD Resources?

For more courses see:

[Pearson Professional Development Academy](#)



# Don't Be a Stranger – Get in Touch!

Contact Irene, your Subject Advisor for Edexcel Science, [here](#).

## Subject Advisor

**Irine Muhiuddin**

Science



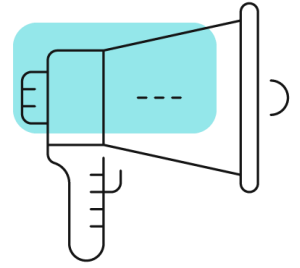
**Email:** [teachingscience@pearson.com](mailto:teachingscience@pearson.com)  
[teachingpsychology@pearson.com](mailto:teachingpsychology@pearson.com)

**Twitter:** @PearsonSciences

**Phone:** +44 (0) 344 463 2535  
(Teaching Services team | Monday – Friday, 8:00 – 17:00)

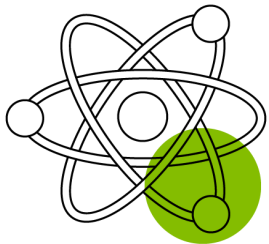


# Next Online Science Network ...



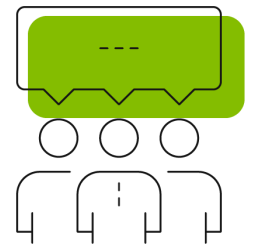
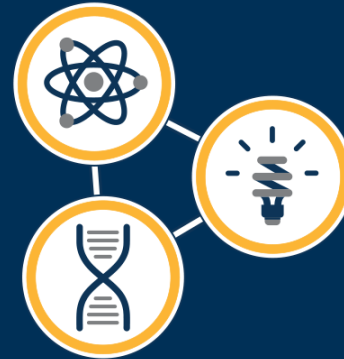
Wednesday 21 June 2023 at 16:00

## **Embedding a Science Mastery Curriculum Into Your School** with Nicky Crum from Star Academies



### **Mastery in Science**

Using big ideas to make cognitive links from year 7 to year 11





Pearson