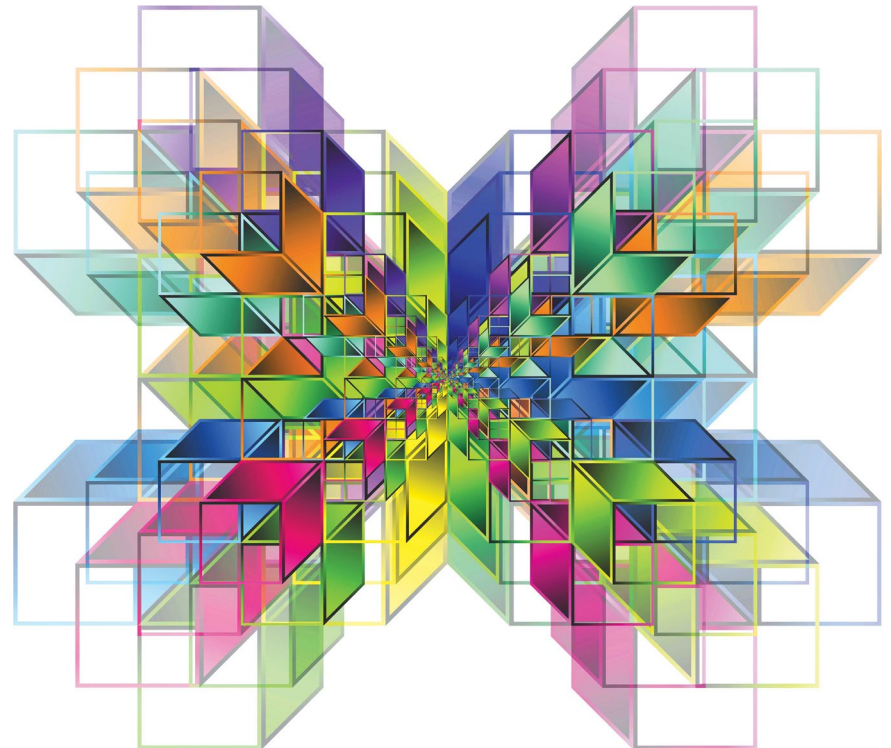


GCSE Maths: HoD Virtual Communities

Autumn 2021



Starter – two questions to warm up

Please see the starter questions starting on page 4 of the *Resources booklet*.

Answers – two questions to warm up

Foundation

30	$\angle CDB = 180 - 52 - 100$ or 28 or $\angle ABD = 180 - 52 - 100$ or 28	M1	oe
	$\angle ADB = 180 - 124 - \text{their } 28$ $= 28$	M1dep	oe
	$\angle ABD = 28$ and $\angle ADB = 28$ and isosceles or two angles equal	A1	


Higher

25(b)	$\vec{EF} = \frac{2}{5} \vec{ED}$	M1	
	$-\frac{2}{3} \mathbf{a} + \frac{2}{5} \mathbf{b}$	A1ft	oe ft their \vec{ED}

Five CPD sessions, fully resourced

- Includes PowerPoint, pre-reading, activity booklets and handouts.
- Quick to prepare, fully customisable and free.

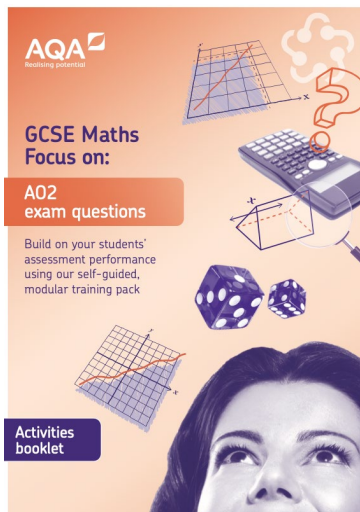
[aqa.org.uk/subjects/mathematics/gcse/mathematics-8300/planning-resources](https://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300/planning-resources)



GCSE Maths Focus on:


A02 exam questions

Build on your students' assessment performance using our self-guided, modular training pack



Activities booklet

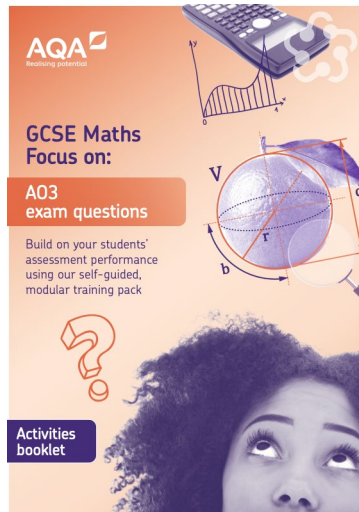
This graphic features a grid with a red line graph, a calculator, dice, and a woman's face looking up.



GCSE Maths Focus on:


A03 exam questions

Build on your students' assessment performance using our self-guided, modular training pack



Activities booklet

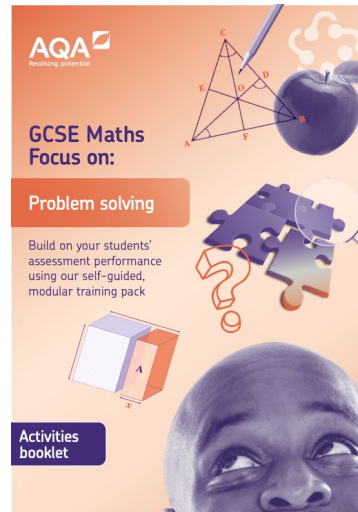
This graphic features a calculator, a bar chart, a sphere with radius 'r' and diameter 'd', and a woman's face looking up.



GCSE Maths Focus on:


Problem solving

Build on your students' assessment performance using our self-guided, modular training pack



Activities booklet

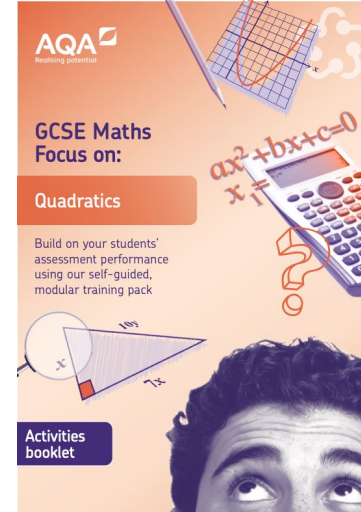
This graphic features a geometric diagram with points A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, an apple, puzzle pieces, and a man's face looking up.



GCSE Maths Focus on:


Quadratics

Build on your students' assessment performance using our self-guided, modular training pack



Activities booklet

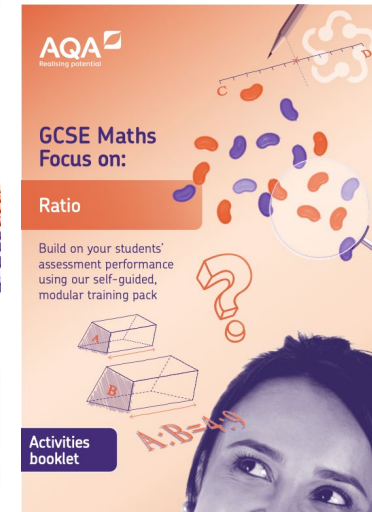
This graphic features a graph with a parabola, a calculator with the equation $ax^2 + bx + c = 0$, a triangle with sides 'a', 'b', 'c' and angles 'x', 'y', and a man's face looking up.



GCSE Maths Focus on:

Ratio

Build on your students' assessment performance using our self-guided, modular training pack



Activities booklet

This graphic features a scatter plot, a magnifying glass over a pie chart, a question mark, and a woman's face looking up.

Increasing collaboration: Agenda

- Why it's important to increase collaboration with staff.
- Some techniques to improve collaboration with staff.
- Resources for increasing collaboration between students.
- Summary.
- A chance to meet an AQA Relationship Manager.

Increasing collaboration with staff: Your feedback

- Why is collaboration between staff important?
- What are the benefits?
- What are the challenges?

Benefits of collaboration: Research

- Improve professional and personal relationships.
- Improved emotional support between colleagues.
- Collaboration can lead to school improvement and student success.
- Share expertise across the department.
- Improves consistency and effectiveness.
- Can reduce workload.
- Can increase job satisfaction.
- Improved ownership of the department's work and outcomes.

See the links at the end of the *Resource booklet* for more research.

Options for staff collaboration

Lesson study approach

- Form a team of teachers.
- Develop goals and design lesson(s).
- Teach and observe.
- Analyse and revise.

Options for staff collaboration

- Break down the lesson study approach into smaller chunks.
- Review medium-term schemes of work together.
- Watch/film lessons and discuss (NCETM have videos – see *Resources booklet*). Some schools are members of IRIS Connect.
- The Focus on success packs encourage collaboration, especially AO2 and AO3.
- Team marking.
- Establish professional learning communities outside of school.
- Team doing maths together.

Collaboration between students

- What research says.
- Suggested resources.
- Things to bear in mind when running a team work lesson.

Student collaboration – what research says

- Develops higher-order thinking skills and can boost confidence.
- Can improve knowledge retention.
- More support between students in lessons means less emphasis on teacher support.
- Students need support and practice to work together; it doesn't happen automatically.
- Design tasks carefully so that working together is effective and efficient, otherwise some students will try to work on their own.

Student collaboration – what research says

- Competition between groups can be used to help students work together more effectively. However, overemphasis on competition can cause students to focus on winning rather than succeeding in their learning.
- Encourage lower-achieving students to talk and articulate their thinking in collaborative tasks to ensure they benefit fully.
- Consider what professional development is required to support effective use of these approaches.

Some tips when running group work

- Make lots of time for it.
- Run through the resource before (with the department) – but also, take a risk.
- Try not to interfere and use hints sparingly.
- Let students decide the group dynamic – accept that one or two may not fully engage.
- Use maths that is accessible if you're focusing on group work/problem solving skills.

Suggested resources/approaches

- Make your own jigsaw/Tarsia. Students write their own questions then swap with another pair/team (see appendix).
- Relay races – teams work together on questions. This is good for exam groups using past paper questions or TES has many **TES relays**. You can also use them as preparation for the **UKMT maths challenge**. See the *Resources booklet* for these links.
- Quiz – use a selection of rounds during a lesson. This is good for end of term or revision and you could also use Kahoot or Quizizz for a round.

Suggested resources/approaches

- Murder mysteries – students solve a murder/puzzle using maths. Again, lots on **TES** or **Miss B resources**.
- Group problem-solving tasks – organising information and solving problems. **ATM** have books of problems and you can search on TES for some.

Building success task

Time for you to have a go!

Here's a link to a zip file containing some 'Building success' resources from STEM.

Please see:

- the 'Building success cards' (PDF)
- the 'Building success estate plan standard' (Word).

Your feedback

Do you have any other suggestions for successful teamwork in lessons?

Summary

- Focus on success resources – five sessions that can be edited.
- Collaboration between staff has many benefits.
- Collaboration between students and teamwork develops higher-order thinking skills.
- Both require time.

Meet the Relationship Management team

Get in touch

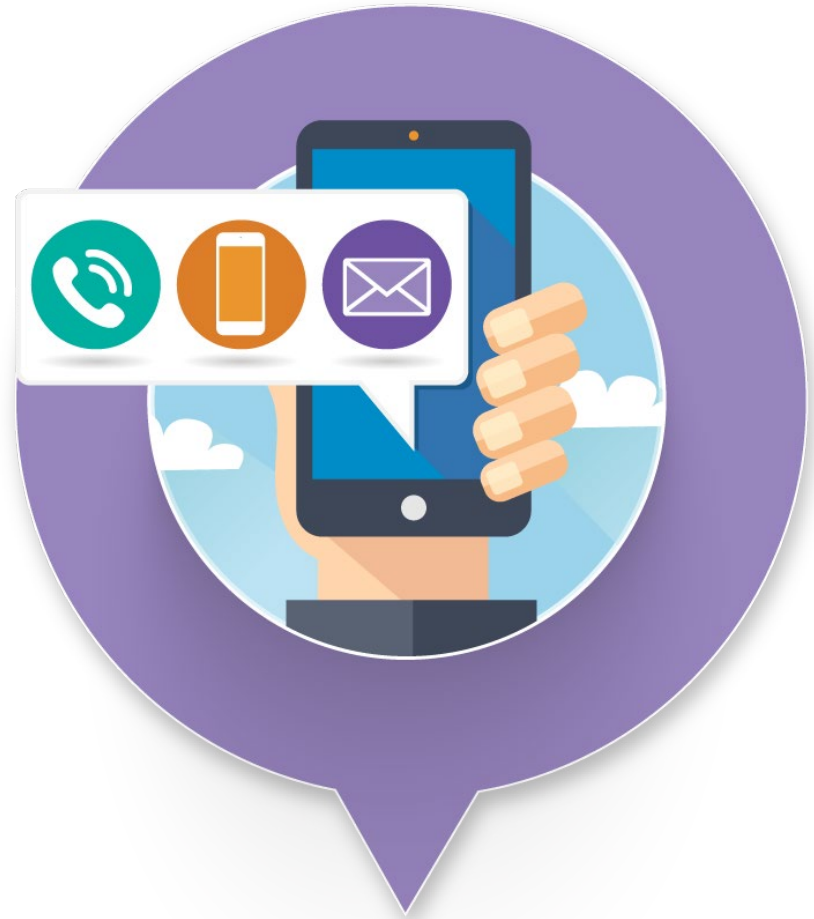
Our friendly team will be happy to support you between 8am and 5pm, Monday to Friday.

Tel: 0161 957 3852

Email: maths@aqa.org.uk

Twitter: [@AQAMaths](https://twitter.com/AQAMaths)

aqa.org.uk



Thank you
