

Contextualising post-16 GCSE Mathematics: a toolkit

**A guide to developing
contextualised teaching and
learning resources**

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About this guide

This guide is part of a toolkit to support maths teaching practitioners in developing contextualised teaching and learning resources for post-16 GCSE Mathematics. It offers information and ideas to help you to use context in your teaching, and suggests how you can develop your own resources and share them with other maths teaching practitioners.

Some ways of using context

There are several different ways in which context can be used in the teaching of maths:

Consolidation

Learners can be helped to consolidate skills they have already acquired by presenting them with a realistic problem to solve that draws on those skills. Using realistic settings for consolidation helps to demonstrate the utility of the maths that has been learned.

Business, administration and entrepreneurship

In one year the total number of cases of work related stress was 487 000 out of a total of 1 241 000 cases for all work-related illnesses. What is this as a percentage?

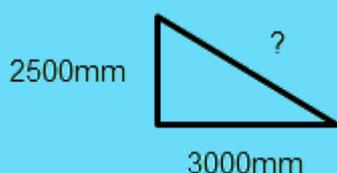
Learning new skills

Learners can be given a realistic problem to solve in order to learn new skills. They start with the problem and try to solve it. The practitioner facilitates discussions and approaches that help the learners to work their way towards a mathematical solution.

Construction

Calculating the length of a handrail on a staircase

The total rise of a staircase is 2500mm and the total going is 3000mm. What will the length of the handrail be?



Appreciating the usefulness of maths

Learners might be given a contextualised example to help them to see the point of the maths they are studying. This can help to motivate and engage them.

Health, social care and childcare

A play area is to be built for a nursery. Guidelines for nursery schools say a sandpit of area 12m^2 should be provided.

Suggest some options for the shape and dimensions of the sandpit.

Enhancing understanding

A realistic context might be used to help learners to practise and understand maths.

General life and personal interests

Looking at an electricity bill, checking it is correct and splitting it among the people who are sharing the house.

Developing problem-solving skills

One of the intended aims¹ of the new Mathematics GCSE is to encourage thinking, reasoning and problem solving. By starting with a authentic setting the learners will need to identify what mathematical processes are needed to answer the question, these processes may reveal connections between different parts of mathematics, learners will need to interpret their results in the given context and as part of their interpretation they should evaluate their methods and results, identifying what if any affect their assumptions have had.

Pseudo-contexts

A pseudo-context² is one that at first sight looks as though it refers to real-life, but is not actually a realistic, practical use of maths.

In a hairdressers, there are two stylists. Janet and Jayan. Janet is 45. She is 9 years older than twice Jayan's age. How old is Jayan?

When learners realise a context is not realistic they generally respond with comments such as, "I don't see the point of this." or "Who would want to know this?". Given the example above, learners may say "why don't we just ask them?". Such 'make-believe' examples are

¹ Ofqual (2017). *GCSE Subject Level Conditions and Requirements for Mathematics*. Available at <https://www.gov.uk/government/publications/gcse-9-to-1-subject-level-conditions-and-requirements-for-mathematics>

² Hoyles, C., & Lagrange J.B. (Eds.) (2010). *Mathematics Education and Technology – Rethinking the Terrain*. The 17th ICMI Study. New York: Springer.

unhelpful as they can reinforce the view, unfortunately often held by learners, that maths is not useful in real life.

Whilst such pseudo contexts are generally best avoided, there can be times when a simplified, or pseudo context can be helpful to aid the understanding of a mathematical concept. For example, it is unlikely that a learner following a hospitality course would use quadratic equations as part of his/her course or work experience; however they may find it easier to understand the concept of quadratic equations if it is explained as a way of modelling the path of a football as it flies through the air. The use of such unrealistic examples can be made more acceptable to learners by explaining that although they might never use maths in this way, it may help them to understand the maths. Furthermore, it is helpful to practice these kinds of questions because similar questions may be included in their maths examination.

Identifying suitable contexts to use

Choose contexts that are likely to interest and motivate learners, and so help them to become more confident and competent in using maths. It is important that they are relevant and meaningful to individual learners, and ideally relate to some aspect of the learners' everyday experiences, for example from their home life, interests, or the vocational course(s) they are taking. Ideally they should draw on the actual experiences of the learners. It is particularly important that they are authentic, so that learners can easily appreciate that there is a genuine purpose for the maths they are learning.

Non-vocational examples should relate to aspects of life that are relevant to 16-19 year olds. Most learners of this age will still be living at home, but may be starting to gain more independence, and so are likely to be interested in their own finances, organising travel and social events, sports, music, and stories in the media. They may have part-time jobs that are not related to the vocation they are studying, such as working in a shop or waiting in a restaurant.

Where possible, and particularly early on in the course, vocational contexts should relate to the vocational sector the learner aims to work in and/or the work experience that they will participate in as part of their Study Programme. This will be more challenging in a class of learners who are taking different vocational courses. Nevertheless it is helpful to refer to applications of maths in vocational areas, as this reinforces the usefulness of maths. This could be achieved by providing different examples of the use of the topic, for example ratios, in the different vocational areas represented in the class. Alternatively you could start a class discussion on examples of how the maths is used in different vocational areas. The context grid provided in this toolkit includes many examples you can draw on.

As learners become more confident and engaged, there are benefits in introducing them to contexts they are not familiar with. When using vocational contexts with groups of mixed vocation learners, make sure you explain the context fully, especially any terms that learners are not familiar with. This is particularly important for learners for whom English is not their first language.

Work experience forms an important element of 16-19 Study Programmes and may present opportunities for your learners to identify ways in which maths is used in the workplace. You might even ask them to note examples of applications of maths during their placement and bring them back to the classroom to share with other learners. The MEI guide *Maths at Work: Integrating work experience and maths provision in 16 to 19 Study Programmes (including Traineeships)*³ provides further suggestions for how work experience can be used to enhance the learning of maths. You could also approach employers you work with and ask them to suggest examples.

Some examples of vocational applications of maths

Construction and the built environment	<ul style="list-style-type: none"> • Geometry in building designs • Ratios in mixing cement or concrete • Use of scale in building plans
Health, social care and childcare	<ul style="list-style-type: none"> • Measurement of fluid intake • Calculate age from date of birth • Ratio of staff to children or residents
Business, admin, and entrepreneurship	<ul style="list-style-type: none"> • Managing a budget • Interest rates • Designing a rota
Leisure and tourism	<ul style="list-style-type: none"> • Travel times and distances • Currency exchange rates • Monthly mean temperature charts
Hair and beauty	<ul style="list-style-type: none"> • Hair cutting angles • Ratios for mixing hair colourants • Scheduling appointments
Hospitality and catering	<ul style="list-style-type: none"> • Planning quantities for catering • Measuring ingredients • Checking bills by estimating spend
General life and personal interests	<ul style="list-style-type: none"> • Working out discounts when shopping • Comparing mobile contracts • Planning a holiday

³ See http://www.mei.org.uk/files/pdf/Maths_at_Work-Integrating_maths_provision_and_work_experience_in_16-19_SPs.pdf

The context grid provided as part of this toolkit is designed to help you to identify suitable contexts for teaching mathematical topics. You could also ask colleagues who teach vocational subjects to suggest suitable vocational contexts to use. They may even be able to offer you pre-prepared materials that you can adapt and use. Other places you might look for inspiration include books, magazines and other publications about the vocational subject, as well as the internet. The specifications for relevant vocational programmes can also be good sources.

When to use context?

Context can be used throughout a maths course from initial assessment through to preparing for examinations, but is most useful in the early stages of a course, where it is particularly useful in helping to engage learners.

Group and individual discussions with learners based around contextualised applications of maths can allow you to assess their knowledge and understanding so that you can focus on covering gaps in their learning.⁴

At some point in their studies, however, learners will need to break away from familiar contexts and move on to contexts they are not familiar with. If they are going to sit the GCSE Mathematics examination then they also need to experience maths that is not contextualised to help to prepare them for the types of question likely to arise in the papers.

What makes a good contextualised resource?

Ideally, a resource should be sufficiently flexible to meet the needs of learners working at different levels of attainment. Understanding differences and differentiating instructions are important as learners in a GCSE resit class are often working at different levels, and with different gaps in their understanding. Resources should therefore also support you in assessing the level at which each learner is working, whether as part of initial or formative assessment.

Resources should be designed to be inclusive – appealing to different genders, ethnicities and cultures. For example, whilst construction is traditionally a male-dominated vocation, it is important that resources should stimulate interest for both genders. They should not always use names and images of males. You might, for example, use a female first name in a construction resource and include images of both male and female construction workers. Similarly hair and beauty is traditionally seen as a female vocation, but it is important to include examples of male workers. Similarly, avoid stereotyping when using contexts from general life – females also follow and/or play football and males also bake cakes.

While it is not the primary consideration, with a little additional thought and effort a carefully designed resource can contribute to other skills, including English and employability skills. For example, a task that involves working in a group to create a video or provide a

⁴ Dudzic, S. (2013). *GCSE Mathematics retake for vocational students: GCSE teaching from 2015*. Available at <http://www.mei.org.uk/files/pdf/gcse-vocational-students.pdf>

presentation about an application of maths can help to develop team-working and communication skills.

Contextualising everything is not the best way to prepare learners for the examination. Ideally, resources that start by using maths in context, then lead onto demonstrate how the same maths can be used in different contexts, and possibly then on to doing the maths without a context.

A really good context will present possibilities for connecting mathematical ideas rather than focusing solely on one topic. It should encourage learners to learn maths meaningfully – to understand by making connections rather than just engage in rote learning.

You may find it helpful to use the checklist below when creating a contextualised resource. Whilst it would be asking a lot to be able to tick all of the boxes, it can be useful in identifying aspects that it may be possible to improve.

Is the task...	Explanation	Check
Authentic and realistic	Is it a genuine example? Can learners see how the task relates to real life?	
Meaningful	Does it draw on the learners' own experience?	
Purposeful	Can learners see why they are using the maths?	
Effective	Are learners learning from the task?	
Motivating	Do learners want to tackle the problem?	
Relevant	Can learners see where they could use the maths in their vocational area or personal interests?	
Challenging	Do all learners feel they have had to work to solve the task?	
Accessible	Can all learners tackle the problem when they see it or are they overwhelmed?	
Inclusive	Can all genders, ethnicities and cultures relate to it?	
Empowering	Does the task help learners develop confidence and independence?	
Differentiated	Can it meet the needs of different learners?	
Encouraging	Do all learners feel they have achieved something?	
Inspiring	Do learners want to carry on and do more maths?	
Holistic	Could it develop other skills without compromising the learning of maths?	

Strategies for prioritising topics to contextualise

When considering which topics to prioritise, look for the ones that form the foundations of mathematical understanding, and which your learners have not fully mastered. Such topics are regularly tested in GCSE Mathematics examinations, and also underpin other topics. These include fractions, decimals, percentages and ratios. A good, solid understanding of these can therefore help learners to answer more questions. Importantly, a good understanding of these topics will serve learners well throughout their lives and, not surprisingly, there are also lots of good contextualised examples of them.

Here are some examples of topics that are particularly relevant to the context areas this toolkit focuses on:

Construction and the built environment

- Number – cost of materials, time management
- Ratio and proportion – materials for making mortar and concrete
- Measurement – fitting cabinets and decorating rooms, metric/imperial conversion
- Area and volume – estimating materials for a job
- Scale drawings – interpreting plans
- Angles, shapes – in constructing buildings and gardens

Health, social care and childcare

- Number – cost of equipment, body temperature, time management, diets
- Ratio and proportion – staff to children
- Measurements – heights and weights, health and safety limitations
- Statistics – tables and charts such as temperature, pulse or fluid intake
- Geometry – scale drawings of rooms for wheelchair users
- Probability – risk assessments and inherited diseases

Business, administration and entrepreneurship

- Number – budgeting and accounts, interest rates
- Ratio – accounting ratios
- Algebra – formulas for profit, compound interest, etc.
- Statistics – analysis of management information, such as sales figures

Leisure and tourism

- Number – Costing of excursions, financial calculations, percentages, tax
- Statistics – customer surveys, data on managing tourism and the impact of tourism
- Ratio and proportion – currency exchanges, maps scales ,etc.
- Probability – risk, travel insurance, overselling seats and holidays
- Geometry – Bearing and distances, plans, understanding historic tourist sites
- Algebra – formulas related to spreadsheets, or tourism measures like room occupancy.

Hair and beauty

- Number – Costing of treatments, timings, financial calculations
- Ratio and proportion – mixing hair colours, other treatments
- Statistics – product information, customer surveys, health information related to hair and beauty
- Angles – Angle of the hair in cutting

Hospitality and catering

- Number – estimating quantities and bill totals, scheduling food preparation
- Ratio and proportion – adapting recipes, assessing staffing requirements
- Measurements – particularly weights and dimensions
- Statistics – analysis of management information, such as sales figures

General life and personal interests

- Number – personal finance, mobile phones, running a car
- Ratio – using pizzas or cakes, cooking
- Geometry – designing a garden
- Probability – sports, games that use dice
- Statistics – charts and tables on subjects that interest learners

The context grid provided in this toolkit includes many more examples for these context areas.

Learners often ask when they will ever use some aspects of GCSE Mathematics in real life. For some topics, like knowing the surd values of trigonometric functions, it is difficult to offer examples of practical applications. For topics like these, you may find it helpful to answer your learners' questions in some of the following ways:

1. GCSE Mathematics has two purposes:
 - a. to prepare you for the maths you will encounter in general life and work
 - b. to prepare you for further study of mathsYou may not find a particular topic relevant now, but it may be useful at some point in your future. For example, it may help you if you go on to take a higher level vocational qualification.
2. Maths is not only about learning topics, it is also about learning to tackle problems logically, which is an important employability skill.
3. GCSE Mathematics is highly regarded by employers, and is an essential requisite for many jobs. Achieving a grade 4 (or C) or better opens doors to employment and can help you progress your career. You might not see the point of this topic, but it is worth working at it, as it may help you to get a better grade.

Types of resource

This section provides examples of different types of contextualised resources that you might develop, to help you get started. It is not exhaustive and you may well have other ideas.

When deciding on which type of resource to develop, bear in mind that resources that encourage thinking, discussion and collaboration can be particularly productive and may also increase learners' interest in maths.

Video clips

These can be used as introductory resources. They can be found on the internet or you can create your own, perhaps with help from vocational teaching staff. They could even be made by learners or employers. You might include questions to ask the learners before they watch the video, for example, "How does this carpenter make sure that the door frame is square?" and/or a question to discuss afterwards - "Can you explain why this works?"

Using pictures of vocational settings

One useful way of encouraging learners to think about how maths is used in their vocational area is by giving them a picture of someone undertaking a particular task and initially asking "what is happening here?" You can then follow this up by asking them to think about what maths the person is using. You could extend this by looking at other vocational settings and show how the same maths is used in variety of careers. This approach would work well with classes which have learners from different vocational areas.

Questions for group discussions

Small group work can be used to support mathematical learning. Learners can ask questions, discuss ideas, make mistakes, and persuade each other by the logic of their arguments. An example is "How would you design a staff rota that's fair?"

Physical activities

Physical activities can be very successful at getting learners engaged with practical applications of maths. This might include bringing things into the classroom or workshop, for example, following the instructions on powdered baby milk to make up a feed. It might also involve getting learners out and about, for example, estimating how many solar panel could be added to a roof.

If it is not practical to do the actual activity itself, you may be able to incorporate some aspects of it, or set up a scenario that mirrors a vocational task. For example, using a scale drawing to make making a model of a roof; arranging Lego bricks in different brick-bond formations and estimating quantities of bricks needed for a wall; or measuring the classroom and estimating how much paint is needed to decorate it. These kinds of activities could tie in with a project, for example, planning the design of a cafe.

Card sorting/matching activities

One example of such a resource is to prepare two sets of cards: one set with amounts of money on each card, and the other set with different details of investment accounts. Here's an example of each:

£500

- **0.7%**
- **Simple interest**
- **Annually**
- **3 years**
- **£1000 minimum investment**

Then ask learners to find the best account card for each money card.

Relays

In relays, the teacher has a bank of questions. The first question is given to the learners. They answer that question and give it to the teacher. If it is right they are given the next question, if not they are given a hint to help them to answer the first one correctly. This can be done in teams. For example, consider a project about designing a room:

- What is the width of the room? This could be given or measured.
- What is the length of the room? This could be given or measured.
- What is the area of the floor?
- What is the height of the room? This could be given or measured.
- How much paint do you need for the biggest wall?

Relays can be a useful resource for revision.

Manipulatives

Many learners relate better to physical things than drawings or verbal descriptions. You might find it helpful to use manipulatives – a physical object that can help clarify a concept, such as connecting cubes to represent quantities, or strips of paper to represent the whole that can be divided into fractions.

Although such resources do not provide a structure for a contextualised activity in themselves, they may be useful to incorporate as part of an activity.

For example, the ratio of a mortar mix is 3 parts sand to 1 part cement. The teacher might say: “You need to make 8 shovelfuls of mortar. How many shovelfuls of sand and how many of cement will you need? If it helps, you can use the cubes to help you to work it out”.

Posters

Learners could be encouraged to summarise their knowledge of a subject or to provide alternative approaches to a problem by creating a poster. You might pick a topic that learners have been studying and ask them to design a poster explaining all they know about the topic. An example might be to produce a poster to show at least three ways of finding 35% of an amount.

Alternatively you might ask them to produce a poster that relates the maths to a context. For example, learners could be asked to produce a poster that shows important temperatures in healthcare based on a picture of a thermometer drawn to scale. It might include:

- safe room temperature, which is 18-24°C
- safe bath water temperature, which should be above 37°C but must be below 43°C
- body temperature, which should be within two degrees of 37°C
- fridge temperature, which should be 1-4°C
- typical outdoor temperatures in the UK, such as 8°C for January and 20°C for August

You could even use a card sort to introduce this activity, by presenting these facts on cards and then encouraging the learners to order them before making their poster.

Critiquing and marking

A resource might consist of materials for your learners to critique or spot errors in. These might include documents, spread sheets, instructions, news articles, and infographics. There may well be others that are particularly relevant to a vocation. For example, you might give them a financial spreadsheet containing deliberate mistakes that they are asked to identify and correct.

Critiquing infographics can be a particularly helpful resource for revising statistical topics, such as representing data. There are lots of infographics available on the internet, but they do not always present data in a clear way, and it is not difficult to find aspects that could be improved. You might ask your learners to comment on which aspects are good at communicating the data. Alternatively you could use an article from a newspaper or the internet that presents data. What is good about it? What is poor? There are many examples of misleading statistics that can be used.

A similar activity involves learners marking other learners' answers to contextualised questions, where some of the answers contain errors or are not well explained. Learners enjoy marking others' work. Learners should be encouraged to write comments and not simply mark the answers as right or wrong, explaining why any answers are wrong and providing correct solutions. If you do this you need to make sure that they are fully anonymised.

Worksheets

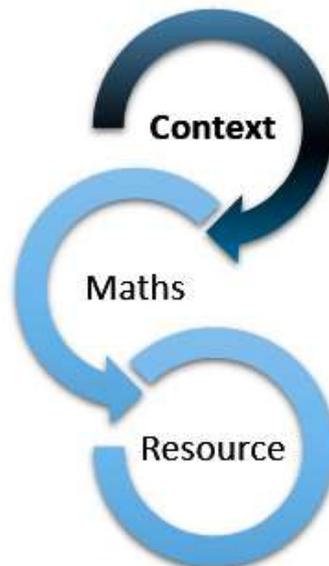
Learners often find traditional worksheets off-putting and boring, but they can be approached in a less traditional way. For example, you could present them in the form of vocational documents, such as a copy of an email requesting a quote for a job. You could also ask learners to write their answers on a mini white board, or on post-it notes placed on a wall, and then take the rest of the group through the examples.

Hints and tips on developing resources

There are two possible starting points for developing contextualised resources – the context or the maths. Of course, as a maths teaching practitioner, you are going to focus on the maths your learners need to cover; however sometimes it's helpful to start with the context and see what maths it throws up, as authentic, relevant contexts are more likely to engage your learners.

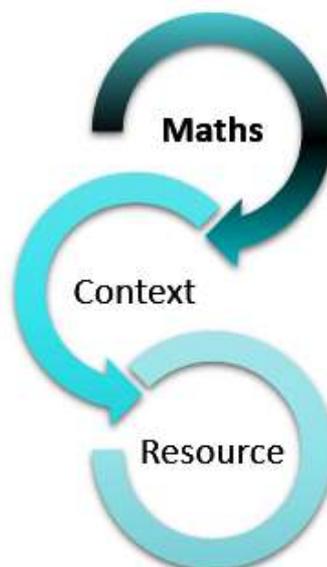
If we look back at the section on ways in which context can be used, we can see that each example of good use of context fits with one or other of these headings:

Start with the context and see what maths is used within it



- A realistic problem for learners to solve, using skills they have already acquired
- A realistic problem for learners to solve in order to learn new skills

Start with the maths and find a relevant context



- A realistic context to enable the learners to see the point of the maths they are studying
- A realistic context to help learners practice and understand maths

So when designing a new resource, start by thinking about the purpose of the resource. Are you aiming to introduce a new skill, or to practise or revise something that has already been covered? Is the main objective to engage learners in maths before you move on to tackle something more challenging?

Introducing new skills

If the resource is to be developed to help learners learn new skills, then a starting point needs to be considered. What is the new skill that is to be learned? This could be a realistic problem that needs an answer.

Physical activities can be particularly useful for introducing new skills. They can help learners identify problems and think about how they might be solved. With careful questioning techniques it may be possible to help them figure out some of the maths themselves. It can also make them more receptive to explanations of mathematical approaches that can help them to find practical solutions. This is an excellent opportunity to allow learners to work together, perhaps through class discussions, using the whiteboard to share ideas and possible approaches.

Worksheets that give suggestions to learners, and lead them through stages in a process of self-discovery can also be helpful, and may be more practical for one-to-one or blended learning situations.

Practising or revising

If the purpose of the resource is to help learners practise skills then a card-sorting exercise may be useful. Card sorts can be used to check learners' understanding and for consolidation. Real examples can be put on the cards and they can be matched, sorted or ordered. A useful tool for card matching activities is [Tarsia](#). This can be used for creating jigsaws, dominoes and rectangular cards.

You might also incorporate some critiquing or marking activities, and some considered use of worksheets.

Motivation

It is particularly important to motivate learners at the start of their maths course and also at the start of each lesson. A starter activity could be as simple as showing a short video clip of someone doing a job that involves the maths that you are going to cover in that session. This helps to focus the learners on the relevance of maths.

To motivate learners it is important that the context is relevant to them and that the scenario is genuinely realistic. It may be that the maths that arises from such an activity comes from several different topics. For example, working out whether a storage area is big enough to store 20 six-packs of catering size cans of baked beans requires the volume and dimensions to be calculated. If buying in bulk qualifies for a 10% extra for free offer it would also involve percentages.

To check the context is realistic consult a vocational colleague or an employer, or do some thorough research online, checking for consistency between different sources. It may be appropriate to consult learners and encourage them to take ownership of their learning. This helps to ensure genuine relevance of the contextualisation.

If the aim of the resource is to build on learners' understanding, the context must be familiar but able to be generalised.

Remember that contextualisation should be used as a starting point that leads onto more general applications of the same mathematical skills. For example, it is important that learners can work out ratios in general and not just in one particular context.

Evaluation

When developing your own resources, you will want to check they are of good quality and effective in achieving their aims.

It might be helpful to try a resource out with a vocational colleague before you use it with your learners. Ask for constructive feedback – is the context realistic? Is it engaging? What could be improved? Do they have any other suggestions that would enhance it?

When you use your resource with your learners, you could ask a colleague to do a peer observation – perhaps a vocational tutor. This would provide you with feedback and would also help your colleague to learn about the resource.

It is also important to encourage learners to give feedback on any resources you create. Watch how they respond to them, and listen to what they say – perhaps as part of a discussion on the activity. At the end of the lesson ask them what they have learned and if they enjoyed the task. Did they understand what the task was about? Did they recognise the significance of the maths? Did they know when they had found the solution to the problem presented? You might also ask them what would make it more realistic or relevant.

If any are shy about speaking you could ask them to write down their thoughts on post-it notes, or you could have a texting window at the end of the class where they can respond directly to the teacher. You might like to create a questionnaire for learners to complete. The toolkit provides one that you can use as a starting point for your own.

Involving learners in the creation of contextualised resources and activities can be very positive. You can use the maths they have encountered in work experience or in real life to improve the resources. When learners are involved in both creating and feeding back for improvement, they are likely to feel more enthusiastic and motivated.

Adapting existing resources

There are many excellent websites that provide resources that can be used as they are, or adapted for specific contexts.

Some of these examples have been gathered together in collections by [STEM Learning](#). These collections include:

- [Construction and the built environment](#)
- [Health, Social Care and Childcare](#)
- [Business, Administration and Entrepreneurship](#)
- [Mathematics in the context of food and drink](#)
- [General life and personal interests](#)

Some other websites you may find useful are:

- [Mr Barton Maths](#)
This has a selection of free resources including a Tarsia bundle. To find these, click on the 'Teachers' tab, then select 'Rich Tasks', followed by 'Tarsia Jigsaws'.
- [National Research Centre for Career and Technical Educations](#)
This US website has some interesting ideas for contextualised maths, but be aware that finance examples are in dollars and these resources may use different terminology in places.

- [NRich](#)
This has some excellent resources which can be adapted
- [Standards Unit Improving Learning in Mathematics resources](#)
These resources encourage a more active way of learning through the use of group work, discussion and open questioning.
- [The Nuffield Foundation FMSQ teaching resources](#)
The Level 1 and Level 2 resources listed here include some good context-based resources suitable for GCSE Mathematics.

Sharing resources with others

Your time is in short supply and it is the same for your colleagues and other teachers at different establishments. If you have developed a good resource, share it with others and encourage them to do the same with you. Look at how others have gone about creating resources. Can you learn from them? Can you adapt what they have produced to be relevant for your learners?

If you intend to share your resource with others you should also consider whether it is complete. If you shared it with someone would they have all the information they needed to use it themselves? Is it fully documented with notes that explain how to use it? Would it help to include some photographs⁵ or links to video clips of a physical activity that you've used? Would it help to have some links to websites that supply materials that you used in it?

Sharing resources with your colleagues

How can you let your colleagues know about your resource? Could you email them or make an announcement on your intranet? Do you have meetings at which you can discuss and share resources? Are there opportunities for maths and vocational practitioners to come together to exchange ideas?

Do you have a shared space, either electronic or a physical where you can share resources? Is it well-organised and easy to search? Do you have a VLE, such as Moodle, that you can post resources to, which will allow you colleagues to access them, and also offer suggestions, amendments, variants and extensions..

Sharing resources with other practitioners

There are several mechanisms for sharing resources with practitioners in other establishments:

Network meetings of groups of other practitioners, may present opportunities to share and discuss resources with others. If you don't already have it, perhaps you could suggest a regular agenda item that encourages this. Your network may also have a mail group that you could use to send your resources to your fellow practitioners.

⁵ When adding photographs or other material produced by other parties, check arrangements regarding copyright.

[Maths Hubs](#) have been set up across England to help to improve maths education by meeting the needs of local maths teachers. Each is led by a school or college. The Hubs are designed for schools, colleges, universities, maths experts and employers to work together to share excellent practice and support all schools and colleges to achieve excellent results.

If you have the opportunity to upload your resources to the internet, you could use social media to let others know about them.

There are also several online forums that provide opportunities to upload and share resources, such as [TES Connect Teaching Resources](#) and [XtLearn](#).

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