

# Maths Pipeline:

## Supporting maths in post-16 vocational provision







[foundation.co.uk](http://foundation.co.uk)

# Hairdressing & Beauty Therapy

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# Some teaching ideas

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We've introduced a small number of teaching ideas in this section to illustrate approaches which relate maths to your vocational subject and which help learners to understand key mathematical ideas deeply.

Active learning is key; in particular, it can help learners to become aware of and resolve any mathematical misconceptions they may have. Active learning uses strategies such as group work, discussion and open questioning to encourage learners to become reflective, to think mathematically and make links between topics, instead of using memorised techniques or processes. This approach helps students to make connections between their ideas, to understand the interconnected nature of maths and confront common misconceptions and difficulties.

Later sections (see page 9 onwards) describe and respond to some challenges you might face, expand on

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Maths which underpins one of these tasks: Mixing hair dyes

You could use the 'Picturing'





This [set](#) of resources produced by Cre8ate Maths involve aspects maths in a salon setting. (Register for free with the National STEM Centre in order to download them.)



This [interactive tool](#) lets you design your own salon. It can be used to cover areas such as scale drawing, practical design aspects, costing, etc. The tool could also support the work in this [booklet](#) from the Hwb Welsh key skills support program.



[VirtualSalon](#) is an interactive activity that shows some of the maths involved with running a hair and beauty salon.



Using vocationally-oriented learning materials helps engage and maintain learners' interest; however, often you will also need to provide support so that learners develop deep understanding of essential mathematical ideas, and develop confidence in their own ability. You could use or adapt the activities below.

## Examples of active learning activities that you could use or adapt with learners

### Tarsia

[Tarsia](#) is free computer software which can be used to quickly produce puzzles like the examples shown below. These puzzles can be used as a lesson starter to get the learners talking about an aspect of maths they are going to encounter in your lesson, to assess your learner's knowledge of the topic and to resolve any misunderstandings or confusions.



These puzzles use measurTd [(m1(qh ]/Subtype /Foot619505 3P1om ]/BBox [22.2Moot6Td ( )Tj -0.001 TO

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## Sometimes true, always true, never true

This kind of activity challenges learners to think deeply about a topic, and also requires them to articulate their thinking. As they are working on the activity, listen to the arguments they are creating, and encourage them to express themselves clearly verbally and on paper; this formative assessment aspect will help identify and resolve any misconceptions.







# What challenges am I likely to face?

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## Difficult topics

There may be specific mathematical topics which, from experience, you know learners will find difficult. Below are some suggestions of resources to support learners in some of these areas.



[Maths4life](#) is a series of booklets providing teaching materials for a variety of topics, including number, time and money, fractions, measurements. (You will need to register with NCETM and set up a free account.)



[Maths Everywhere](#) has some excellent short clips to help learners develop their maths skills. The site has three sections; some tools to help with everyday maths (e.g. currency conversion and planning journeys); a set of 'how to do' short clips; and some interactive questions to try. It is also available as an app.



The [Skills Workshop](#) is a site where practitioners can upload their own resources. It provides a range of lesson ideas covering many aspects of maths and English. The resources can be filtered by vocational area and level. Look out particularly for the resources which use active learning.



The [Excellence Gateway](#) has a large collection of numeracy and vocational learning materials. The [Maths Exhibition](#) website brings together some of the most effective maths teaching and learning materials from the Excellence Gateway site.

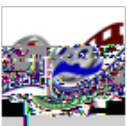
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## Working in the Secure Estate

If you are working within the Secure Estate you will have additional challenges such as regime constraints and learners who have additional support needs. The following is an approach taken by one prison:

“At HMP Wakefield, teachers provide contextualised learning within prison industries on a one-to-one basis to help learners who are in the separation unit and/or those who struggle with functional skills or have additional learning needs. This type of support is proven to be less disruptive to the prison day and effective at engaging those furthest away from learning and skills.”

[NIACE](#)



This [clip](#) shows ways in which learning has been embedded in many aspects of prison life at HMP Swalesdale, and this [article](#) discussed how literacy and numeracy have been embedded in the gym there. Similar ideas could work in Hairdressing & Beauty Therapy.



You might get some further ideas from the report [Fit for Release](#)



Level to Level 2

A related resource, [Improving Learning in Mathematics](#), offers similar approaches for mathematics from Level 1 to Level 3.

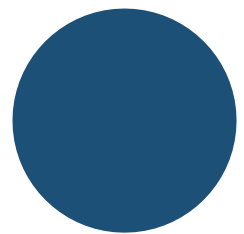
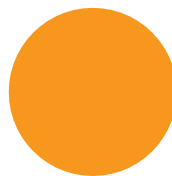
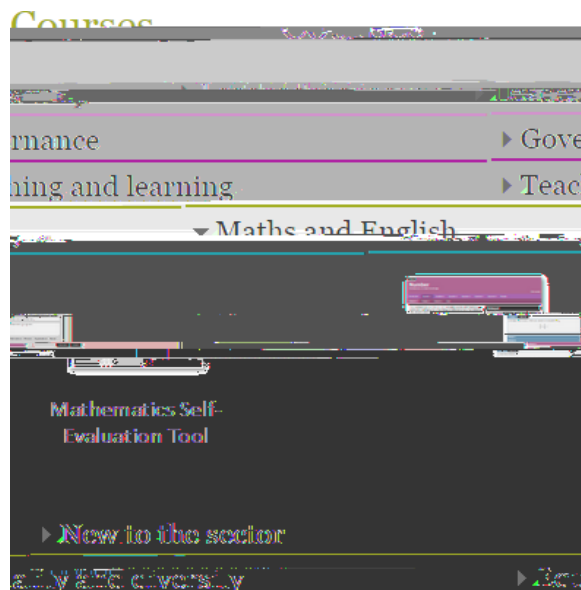


Professor Malcolm Swan of Nottingham University, whose research underpinned both *Improving Learning in Mathematics* and *Thinking Through Mathematics*, identified eight prin -0.0a6N1 Tf 0.0



## Track learners' mathematical progress alongside their vocational targets

This will help you and the learners to see where they are progressing and where they need further support.





## The Maths

16. Excellence Gateway Embedded Learning for vocational areas

<http://rwp.excellencegateway.org.uk/Embedded%20Learning/Vocational/Hairdressing/>

17. Cre8 Salon online resource in the National STEM Centre e-Library (You will need to register free.)

<http://www.nationalstemcentre.org.uk/elibrary/resource/360/cre8-salon>

18. Interactive tool to design your own salon <http://www.beautydesign.com/salon-planner/>

19. Trainer Guide for Key Skills in Hairdressing on the TES website

<https://www.tes.co.uk/teaching-resource/key-skills-in-hairdressing-6017522>

## Tarsia

20. Tarsia on the Hermitech Laboratory - Information on Formulator

Tarsia <http://www.mmlsoft.com/index.php/products/tarsia>

Sometimes true,

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## Meeting the challenges

### Working together with maths practitioners

43. See 4

### Teaching and learning strategies: embedding and contextualising

44. NCETM- Maths4Life Topic-based teaching Booklet (You will need to register free on the NCETM website) <https://www.ncetm.org.uk/resources/8855>

45. MEI Contextualisation Toolkit <http://www.mei.org.uk/contextualisation-toolkit>

46. MEI - Maths at Work, A guide for employers offering work experience as part of 16 to 19 Study Programmes [http://www.mei.org.uk/files/pdf/Maths\\_at\\_Work-A\\_guide\\_for\\_employers\\_offering\\_work\\_experience\\_for\\_16\\_19\\_SPs.pdf](http://www.mei.org.uk/files/pdf/Maths_at_Work-A_guide_for_employers_offering_work_experience_for_16_19_SPs.pdf)

47. YouTube:ETFMPP Hospitality and Catering: Vocational and maths practitioners working together <https://youtu.be/rZWiBhXHmK4>

### Teaching and learning strategies: developing deep understanding of key mathematical ideas

48. NCETM- Thinking Through Maths at 0.21.4 (ac8o1P(N)-3.5)4.1 (e)(e)-5.8 (er) (t)3i6 (o)-3.I3.5 5r2.9 (r)-(p)41 Td ( )T5