

Presenting DrFrostMaths to others

Thank you for sharing DFM with other teachers! This guide may give you some ideas on how best to explain the functionality of the platform, and key points to make.

If you're presenting to teachers at other schools, anonymise student names by clicking your name *at the top right* → *Account Settings* → *Anonymise/Demo Mode* on the top menu.

Relating aspects of functionality to your own specific teaching practice, and introducing with case scenarios, is very powerful.

Important general points to get across:

1. That we are a charity.
2. For the UK curriculum we cover mostly KS3-5 (including Further Maths), although with some provision for KS2.
3. The platform is mostly built around question-answering, so it's important to show examples of Key Skill/Exam Skill questions.
4. We will be expanding to other subjects (first Chemistry, Physics, Biology and Computer Science in the not-too-distant future).
5. Be careful to define any DFM-specific terms – new users will unlikely know what 'Key Skills' are until you explain.

1 Dashboard

- Make clear this is what teachers/students see when they first log in.
- Point out the links in “work” and “progress data” which provide access to the main functionality of the site, which is duplicated in the top menu, and the Facebook-style notification feed on the right (the items are clickable).
- Point out the ‘**help and training**’ at the top right which links them to training sessions and a starter guide for teachers. Students get their own separate guide.

The screenshot shows the DrFrostMaths dashboard for a user named Ms M McDonagh at Keweenaw School. The top navigation bar includes the user's name, school name, and various statistics like 'School Tasks: 3721' and 'Topics This Year: 134'. The main content area is divided into several sections:

- Work:** A list of tasks with checkboxes and a 'Set a Task' button. Tasks include 'Expanding brackets', 'K13a Expand a single bracket with an integer on the front, K179b', and 'K13b Expand two brackets in the form (x+a)(x+b)'. A 'View All Tasks' link is present.
- Progress Data:** A table showing 'Week Summary' and 'Top Students'. The table has columns for 'Tasks set', 'Questions answered', and 'Independent questions'.
- Resources:** A section for 'Questions & Past Papers'.
- Notifications:** A feed of messages on the right side, including 'You completed an Independent practice for Ms M McDonagh and achieved', 'You decided to pause your last session. Click here to continue.', and 'You earned a bronze trophy: Person of the Century'.

2 Setting Tasks – Key Skills

- Go to **Work** → **Set a Task**. Explain briefly what the 4 options allow you to do.

Select **By Topic**. Make clear the difference between Key Skills and Exam Skills. Explain that a skill (e.g Expanding brackets) has been broken down into key skills (e.g Expand a single bracket with an integer on the front).

- Emphasise the aspect of **choice**, as this is a major advantage of our platform over similar products. Students can repetitively practise very specific question types, potentially with an accuracy requirement for completion, but they can also get broader practice with Exam Questions. And teachers can choose the questions, or let the system choose for them based on the needs of the student.

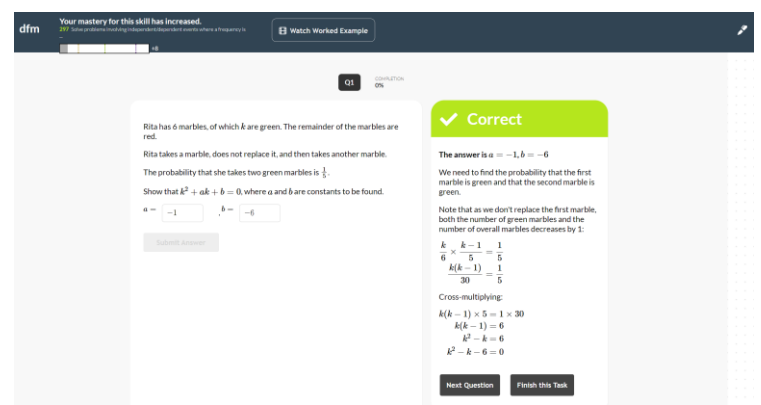
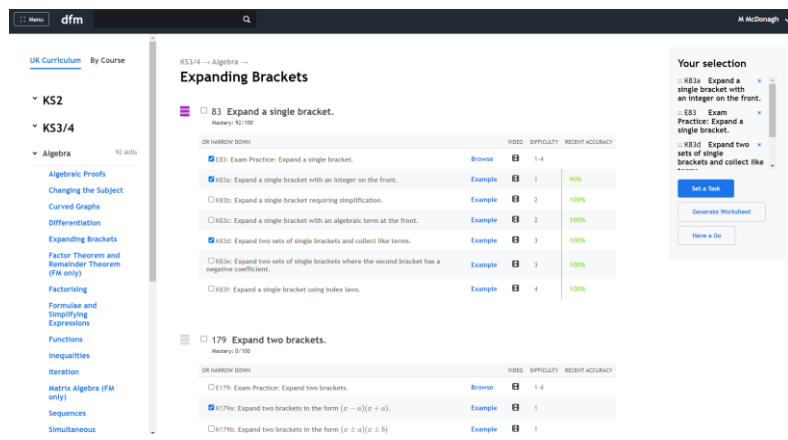
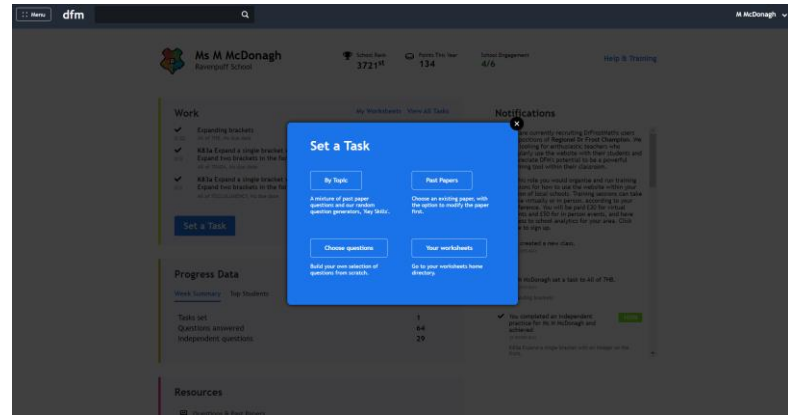
- Start by choosing **Key Skills**. Potential examples: (a) KS3/4 Expanding Brackets (shows scaffolding of Key Skills) (b) KS3/4 Transformations → Rotate a shape (example of Desmos usage) (c) KS3/4 Probability → Form an equation K297a (has very comprehensive answer explanation) (d) KS5 Mechanics → Moments → K426.

- Point out the **'Example'** and video icons. Click one of the video icons and mention that the videos are purposely short (typically 3-4 minutes) and specific to the kind of question.

- Use the **Have a Go** option (and get an answer right to demonstrate how the system responds). This demonstrates the experience for students and it's important for teachers to see this. Point out the video button at the top which students can use if stuck.

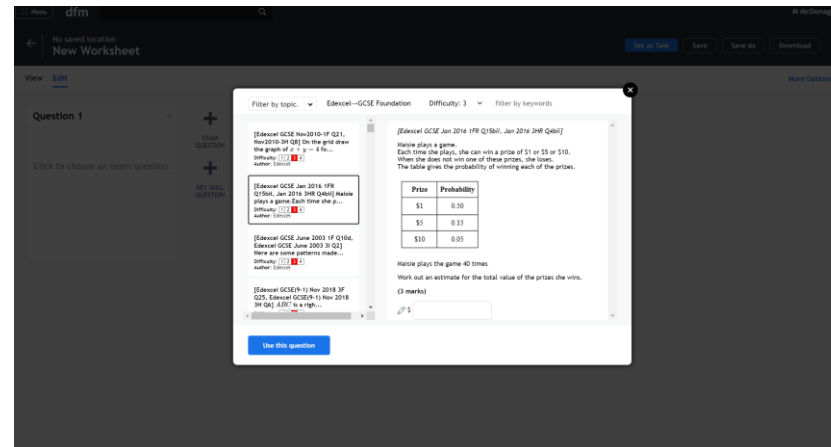
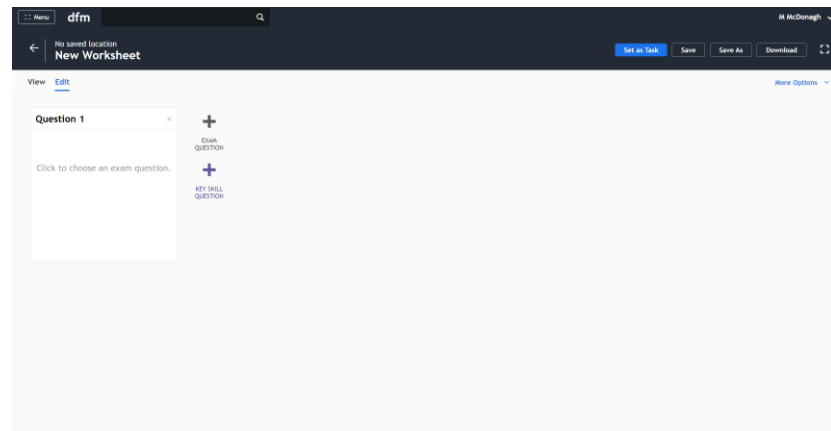
- Select a mixture of key skills and exam practice and demonstrate the 'fixed questions' option. Once this directs you to the worksheet interface, point out that this generated a 'template'. Show it is intuitive (regenerate, delete, change the order of a question, change the difficulty on the left) and show that we could potentially make a custom template with exam board filters and so on. Briefly explain setting options and point out the worksheet can be downloaded to word, with answers included.

- Again go back and now click Set to Students. Choose Flexible Task and briefly explain some of the options (although don't actually set).



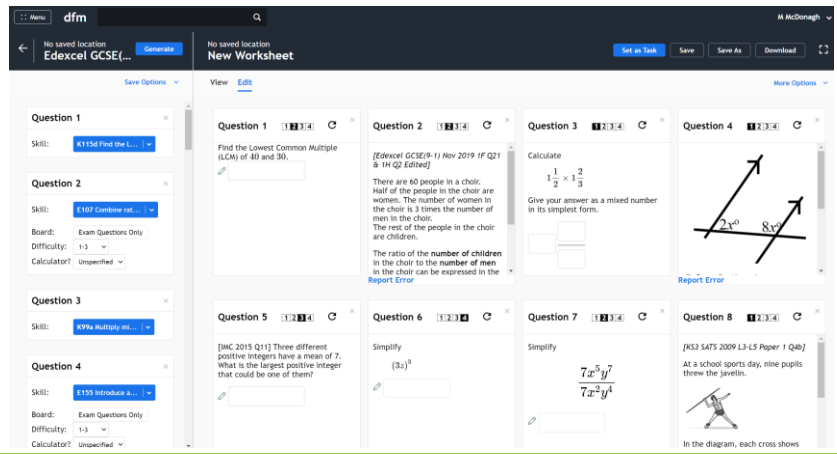
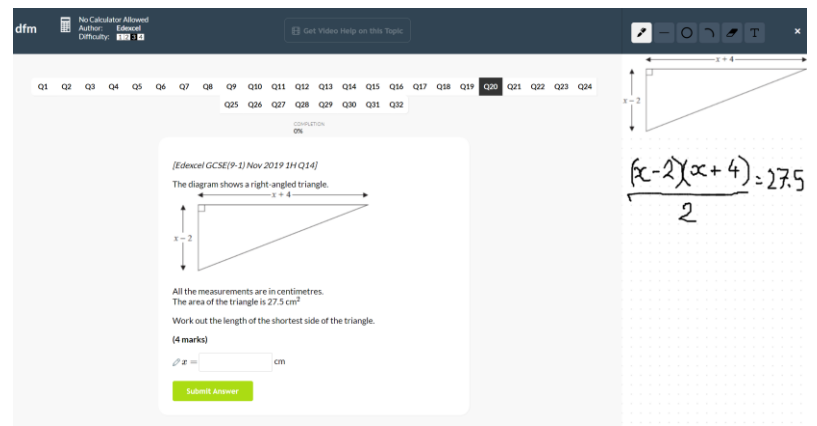
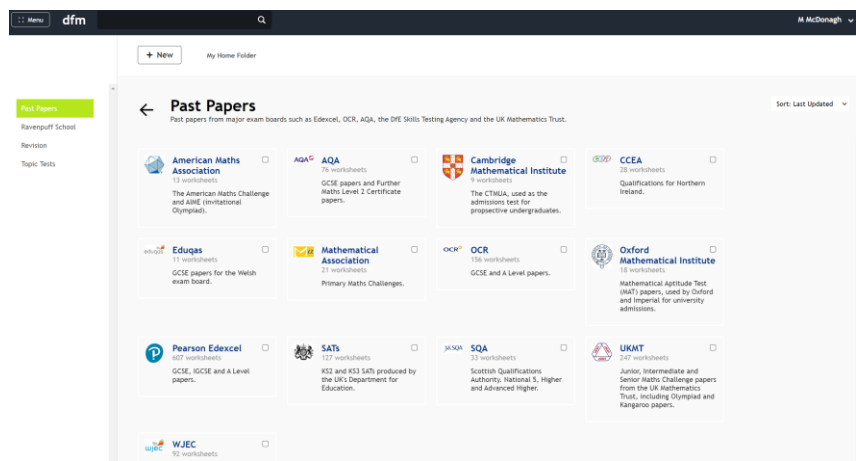
3 Setting Tasks - Worksheets

- Go back to **Work** → **Set a Task**. Select **Choose Questions**.
- Add an Exam Skill question, mentioning the exam board filter, difficulty filter and topic filter.
- Add a Key Skill question, show you can regenerate it.
- Quickly save and then click **Set to Students**. You would have already shown a dialog similar to this but you may want to mention the 'use exam marking' option, and that if you 'require working', teachers could then theoretically allocate partial marks based on students' drawn working on their side whiteboard. **(This feature is coming back soon so worth mentioning it)**
- Mention the **Export to Word** option, and quickly demonstrate if time, mentioning the automatically generated markscheme.
- Mention the 'Live!' option, although you will unlikely have time in your demo to show.



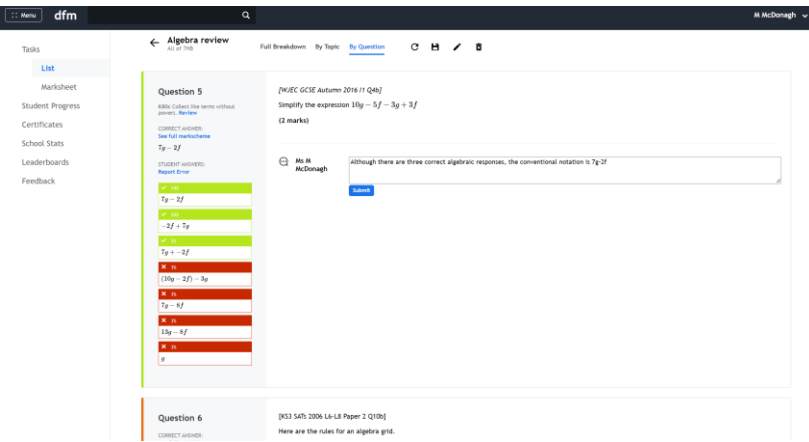
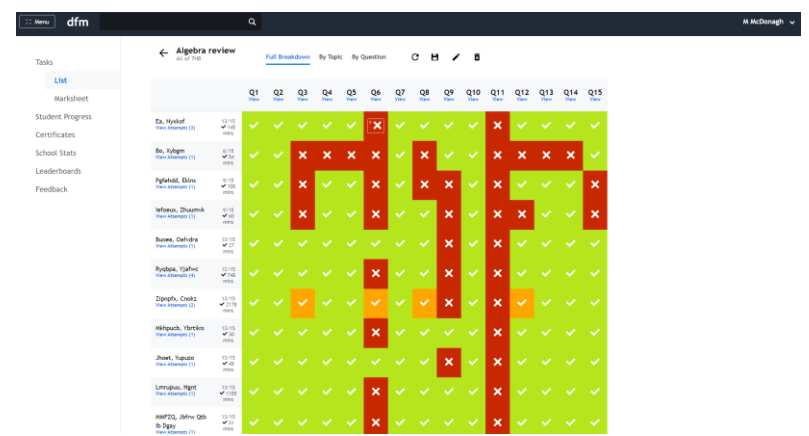
4 Setting Tasks – Past Papers

- Go back to **Work** → **Set a Task**. Choose **Past Papers**
- Explain we have past papers from major exam boards as well as the UKMT
- Choose a past paper (perhaps Edexcel GCSE 9-1, point on “last third” papers then select a full paper)
- Click **edit** and show you can delete questions if they’ve not yet been covered.
- Click **more options** → **try as a student**. Explain the student can complete in any order. Choose a question with a diagram and use the pen icon to show how a student can write working and copy the diagram to annotate. Point out the video link at the top.
- Go back and click **more options** → **generate shadow paper**. Briefly show the editable features. Emphasise the benefits of using this feature for missing students, regular exam practice etc.



5 Progress View

- Go to Menu → Progress data
- Select a class and click on a recent task (ensure you are working in anonymise/demo mode!).
- Explain red is incorrect, orange means correct on a further attempt and green means correct first time. You can see number of attempts for each student on the left.
- Click **view** on a question where students have had varied success.
- Explain F means some feedback has been left. Click on a cell with an F and show how you can respond to feedback. Point out “use feedback for all who got this wrong”.
- Switch to *By Topic* view. You may want to have picked a task which has a variety of topics. Explain this is particularly useful if the teacher has set flexible questions as you still get insights into which topics have been answered. Point out the questions to the most left are the questions which have been answered the least well across the class.
- Switch to *By Question* view and explain how effective this is in identifying common misconceptions, but also for seeing students’ variants of correct answers (particularly when algebraic!). Mention that our system automatically determines algebraically equivalent variants where permitted.
- Click on **marksheet** and select a class. Explain a red L box means late, a white task means started but not completed. Completed tasks are coloured green to red to tell you at a glance how much was correct.



6 Student View

- Go to [Your Name] → view as student and select a class
- Highlight that their dashboard looks different, e.g the “start a practice” button.
- Explain the student would see their stats such as trophies, points this year and master level.
- Click “Start a Practice” and demonstrate how it has almost identical functionality to the teacher “set a task” button.
- Emphasise students have full autonomy to work independently on any topic they choose. You can mention the courses link on the student dashboard, then come back to this at a later stage (slide 9)
- Go to **My Homework** and click on a task, start attempt and show the same functionalities as before (e.g. skip to a certain question, use the pen icon to do working, watch a video)
- Once you’ve answered a question click **Continue later**, click back on the task and now show how the student can review all their answers, write some feedback or **Continue Attempt**.

The image shows two screenshots of the DFM (Digital Formative Mathematics) interface from the perspective of a student.

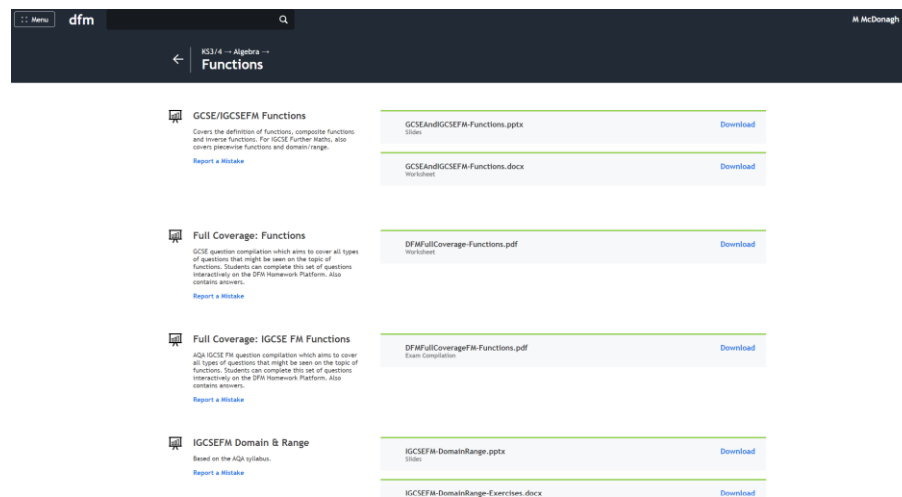
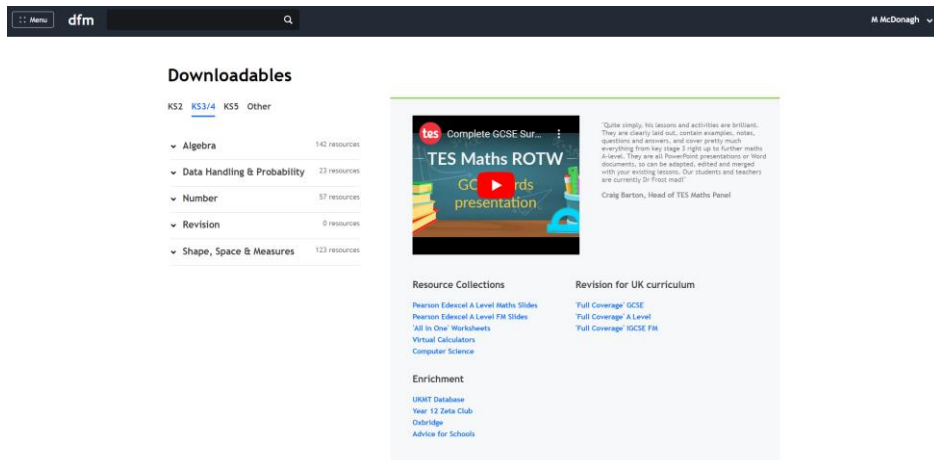
The top screenshot is the 'Demo 8M2 Student' dashboard for Queen Elizabeth's Grammar School. It features a navigation bar with 'Menu', 'dfm', and a search icon. The main content area is divided into three sections:

- What to work on next?**: Includes a 'Start a Practice' button, a course card for 'Year 8' (240 Convert between units of area and volume), and an 'Add Course' button.
- My Homework**: Lists three revision tasks for Year 8 Test 2, each with a 'Review Progress' link.
- Resources**: Includes links for 'Questions & Past Papers' and 'Downloadables'.
- Notifications**: A list of messages from the system, such as 'You decided to pause your last session. Click here to continue.' and 'You earned a bronze trophy: You're the Key (SM2) to my heart.'

The bottom screenshot shows a question attempt screen for 'Year 8 Test 2 Revision'. The question is: 'Convert 784 km² to mm².' The input field contains '784 km²' and the unit 'mm²'. A 'Submit Answer' button is visible. Below the question, there is a progress bar showing 'COMPLETION 4%'. The question is marked as 'Question 5' with a checkmark, indicating it has been answered correctly. The feedback shows the correct answer: '900 litres → 9.4 m³'. Below this, there are two more questions: 'Question 8' and 'Question 9'.

7 Resources

- Go to Resources → Downloadables
- Explain that this is an index of all the resources on the site, particularly for the downloadable teaching resources, including PowerPoints and “full coverage” worksheets.

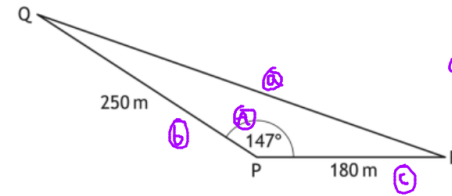


8 Whiteboard

- Go to **Resources** → **Virtual Whiteboard**.
- Select 'Classroom Mode' and select one of your classes.
- Load an exam question using the question browser tool. Annotate over it and explain that student whiteboards would see your annotation on each of their screens.
- Press the 'eye' icon and explain that you could see each student's annotation individually. Point out you can hide student names.
- Point out the whiteboard is infinite by zooming in and out.
- Point out background grids which can be used.

[SQA National 5 2017 P2 Q3]

A piece of land is in the shape of a triangle as shown.



$$a^2 = b^2 + c^2 - 2bc \cos A$$

- $PQ = 250$ metres
- $PR = 180$ metres
- angle $QPR = 147^\circ$

The owner wishes to build a fence along the side QR . Calculate the length of the fence.

(3 marks)

m

9 Course System

- Explain that this feature allows a school to set up their **schemes of work**. This allows students to be able to sequentially work through your syllabus independently, but also makes it easier for teachers to set tasks and generate worksheets specific to the skills in their course.
- Mention also that there are pre-existing schemes of work set up, including for major exam boards and **White Rose Maths**. These can potentially be copied to their school directory to adapt by switching the **use?** Slider on at the top right.
- Briefly show them a sample course. The Tiffin School one can be found in the Schools tab. Or choose a White Rose Maths or Pearson Edexcel course. If your school has a course set up show this, it's always powerful to see real applications.
- Log on as a student and show that the student can see the course on their dashboard. This allows independent study.
- Mention that the students have a progress bar for each unit, module and the whole course, and teachers can monitor this. This could be another opportunity to show from a student view, particularly if your school already has courses set up.

If you had longer, try playing a Live! game. Pick relatively easy questions, e.g. a GCSE Foundation paper.

The screenshot shows the White Rose Maths website interface. At the top, there is a search bar and navigation links for 'Donate', 'Courses', 'Resources', 'Work', and 'J Frost'. The main heading is 'White Rose Maths'. Below this, there are four panels for different years: Year 5, Year 6, Year 7, and Year 8. Each panel shows a progress bar and a list of terms: Autumn, Spring, and Summer. There are 'Go' buttons for each year. On the left side, there are tabs for 'DFM Courses' (16 courses available), 'Tiffin School' (7 courses available), 'Schools' (87 courses available), 'Exam Boards & Publishers' (21 courses available), and 'Trusts' (2 courses available).

The screenshot shows a lesson page for 'Gradients and lines'. The page has a dark header with the title 'Gradients and lines' and a breadcrumb trail: 'Courses → Exam Boards → White Rose Maths → Year 11 → Autumn →'. On the left, there is a 'Autumn Summary' section with progress bars for 'Gradients and lines' (14 Key Skills, 6 Exam Skills), 'Non-linear graphs' (6 Key Skills, 5 Exam Skills), 'Using graphs' (8 Key Skills, 8 Exam Skills), 'Expanding and factorising' (13 Key Skills, 6 Exam Skills), 'Changing the subject' (12 Key Skills, 6 Exam Skills), 'Functions' (18 Key Skills, 10 Exam Skills), and 'Revision' (76 Key Skills, 41 Exam Skills). The main content area features two video lessons: 'K405: Find an equation of a line parallel to another.' and 'K578: Find an equation of a line perpendicular to another.'. Each video has a 'Watch Video' button, a 'Generate Worksheet' button, and a 'Practice' button. Below the videos, there is an 'Exam Practice' section with four questions: 'E150: Be able to draw a line using its equation.', 'E152: Find the gradient or y-intercept of a straight line given its equation.', 'E149: Appreciate that a point on a line must satisfy its equation, and be able to determine x and y intercepts of a line.', and 'E153: Determine the equation of a straight line.'. Each question has a 'Watch Video' button, a 'Browse Questions' button, and a 'Generate Worksheet' button. On the right side, there are 'Practice' and 'Topic Test' buttons for each question.