



## Nail Bar – Functional Maths Project

A functional maths project focusing on setting up a nail bar, working in conjunction with the Women's Business Centre and Newham College of Further Education.

Publication and curriculum resources designed and written by Ruth Lydall  
Email: [Ruth.Lydall@newham.gov.uk](mailto:Ruth.Lydall@newham.gov.uk)

### **For details of Stratford City Education Project contact:**

Ruth Lydall  
Stratford City Education Development Officer  
Email: [Ruth.Lydall@newham.gov.uk](mailto:Ruth.Lydall@newham.gov.uk)  
Website: [www.newham.gov.uk](http://www.newham.gov.uk)

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## **Foreword – Stratford City Education Project**

Stratford City Education Project aims to ensure all young people of Newham are informed of the regeneration employment opportunities in their borough. This is done through young people accessing relevant learning resources, engaging with employers that develop their entrepreneurial flair and inspire them to fulfil their potential and address the economic well being agenda.

The Stratford City Education project seeks to use the development of Stratford City to increase the awareness of young people of:

- The regeneration of Stratford, in particular Stratford City, the Olympic Village and the Olympic Park
- The future employment opportunities that will be created over the next 10 years, in particular in construction, retail and in the commercial sector
- Opportunities in the world of work and related sectors of employment
- Their own potential and economic well being

The key aims of the project are to:

- Involve key employers in developing a range of educational resources that are transferable across curriculum areas
- Embed these resources within the curriculum to enrich and inspire the learning experience of young people

- Raise self confidence and aspirations among young people

## **Plashet School – Context**

Plashet School is a partner working with the Stratford City Education Project to develop and pilot curriculum resources and to encourage young people to explore opportunities and pathways in the world of work.

Plashet School was keen to work on a Maths project with a business element. It was decided that two classes of Year 9 students would work on a functional Maths project that aimed to increase their performance and understanding in the subject. The project focus was on setting up a Nail Bar and the young people had to explore its financial viability, produce scale drawings and prepare a Power Point presentation of their work. The students worked in small teams encouraging development of team working and communication skills.

### **Project Aims**

- (a) Enrich the learning experience of young people to achieve the highest possible standard
- (b) Engage young people in dialogue with outside businesses and agencies
- (c) Raise expectations and self confidence to seize the opportunities arising through regeneration in Newham

All students worked in small groups in their chosen teams.

### **Project Outcomes**

- All students to be aware of Stratford City and understand where

it is being built

- All students to attend trips to the Women's Business Centre
- All students to attend a trip to Newham College of Further Education
- All students to contribute to their team
- All students to work as part of a team
- All students to produce a scale drawing
- All students to understand how to calculate profit
- All students to produce a Power Point presentation about their Nail Bar
- Most students to understand scale drawing
- Most students to calculate profit
- Some students to attend Stratford City Education Project showcase on 26<sup>th</sup> June to speak about the project
- Some students to present their work to the "Dragons" business panel

**Resource development** validated by Plashet teachers and tailored to their curriculum delivery. Plashet teachers worked with their students to ensure the project was delivered in an appropriate way in meeting curriculum standards in Maths, ICT and Enterprise.

**Uptake** 60 Year 9 students at Plashet Junior School were engaged on the project. The children worked collaboratively in groups. At the beginning of the project the students had an introduction from the Stratford City Education Development Officer. Additional support was provided throughout the project by the Women's Business Centre, Newham College of Further Education, London Borough of Newham, NEBP and Carina, an architectural student.

**Wider dissemination** through existing teacher networks, events and through websites such as NEBP, TES and Stratford City Education Project website. The project was showcased in the Stratford City Education showcase on 26<sup>th</sup> June 2009.

## **Plashet School**

### **Introduction to project**

#### **Aim**

To increase Maths engagement and attainment by using a functional Maths project

#### **Year group**

Year 9

#### **Project outline**

Students worked in groups of three on a functional Maths project based around setting up their own nail bar. Activities included: a session from an architect, Elsa Felix, talking about scale drawing and taking young people through examples, a trip to Women's Business Centre to talk about the finance available for starting up a business and how to work out profitability, a visit to Newham College to measure a nail bar, for scale drawing, and find out about costings and profitability.

Students were responsible for producing a Power Point presentation on their nail bar. All groups were given a budget from which they had to equip their nail bar by using brochures from Newham College, in addition they looked at the cost of premises and running costs. Students had to come up with a price list for their products and look at profitability and they had to include: a scale drawing of the nail bar.

The project focused on financial capability and using Maths skills in a context that was engaging for the students.

### **Judging**

Within class groups students had heats and the best business case presentations were chosen

### **Final judging and prizes**

The final judging panel decided the best presentation and two runners up, all finalists received certificates and the winning team won New Look vouchers.

### **Launch of the project**

The project at Plashet School was launched by Ruth Lydall, Stratford City Education Officer on May 8<sup>th</sup> 2009. Ruth spoke about the changes that are occurring in Stratford, specifically the Stratford City development. She shared images of regeneration with the students and answered their questions. This helped to set the context for the project, as the young people were looking at opening a new shop in the new Stratford City shopping centre.

The young people were inspired by the images of a future Stratford and it allowed them to visualise the locations where they could open in the future.

After speaking about the changes in Stratford, Ruth set the scene for the project. She advised the students that they would be planning their own Nail Bar. The young people needed to examine the financial implications of setting up their own Nail Bar and would be investigating profitability and costings. In addition, as this was to be a functional Maths project with the students looking at producing scale drawings of the Nail Bar. The girls were interested in the context and many of them went away from the first session inspired about the project and the brief.

The young people were put into groups of three to work on the project. To have three people in a group is the optimal as it means that at least one student is listening at any time. The students were allowed to choose their own groups and were advised that there would be prizes for the winning teams and therefore to choose wisely rather than just among for familiar peers.

The teams began to brainstorm a name for their group. Some of the students showed real enthusiasm and in their own time conducted polls to assist them in their choice of name. When the teams had decided on their names it helped them to build cohesion, identity and a team spirit.

### **Visit from Carina, Architect**

Carina Felix, an architect, visited Plashet School to talk to the young people about scale drawing. She began her presentation by speaking about her experience and her role. Carina is an architectural student at Greenwich University. She was able to speak to the young people about her work experience and what she had done on the course. She was also able to show examples of her work and other architects work. Carina spoke about inspiring female architects and the work that they have produced.

After talking about her background, Carina then spoke specifically about scale drawing. She showed examples of scale drawings done by her and other architects. Carina then gave students copies of signs that are industry standard for use in scale drawings e.g. for windows, doors etc. The young people then had the task of drawing a scale drawing of the classroom. Students were introduced to the idea of "scale" and provided with tape measures allowing them to come up with the dimensions of the classroom. The young people worked in their groups of 3 to produce the scale drawings.

This activity allowed the young people to have a taste of scale drawing prior to their visit to a nail bar. In addition, it helped the students work as part of a team as they had to delegate roles within the team to enable them to produce the scale plan in the time given.

## **Visit to Women's Business Centre**

The Women's Business Centre in East Ham is the first purpose built Women's Business Centre in the UK and has won numerous awards. The young people went on a trip to the Women's Business Centre and had a tour of the facilities with an introduction to what the centre does - including incubation rooms for new businesses, courses in cognitive behavioural therapy and neurolinguistic programming.

The young people then had a talk from representatives from the centre - they spoke about setting up a business. As the project had a functional Maths basis one of the people from the centre spoke about the importance of finance for businesses and introduced the students to basic accounting. He spoke about fixed and variable costs that students needed to think about. This led on to a conversation about profit and how it is calculated. Finally he showed the young people examples of financial documents including a Profit & Loss account. The students used these documents in their presentations.

The final part of the session was taken by Ashraful Islam who spoke of her experience at the Women's Business Centre. Ashraful came from Bangladesh six years ago and didn't know any English. She had enrolled on courses at Newham College and through this was introduced to the Women's Business Centre. Ashraful described her tenacity in convincing the Women's Business Centre to employ her on a temporary basis giving out flyers. From this role she progressed to working at the centre and now is office manager and has started up her own catering business. Her story was compelling

for the girls and allowed them to understand that there are lots of opportunities available to them if they are prepared, through hard work, to seize them and become successful.

After the visit many of the young people spoke about Ashraful's talk and how inspiring it was to them. This visit allowed the young people to gain an understanding of the facilities available to them if they wanted to start their own business and the procedures that they would have to go through. In addition, it exposed them to the financial information and documents that they would need to produce prior to starting their own business.

### **Visit to Newham College of Further Education**

The students went on a visit to Newham College of Further Education. The college runs a number of health and beauty courses and facilities open to the public for students to practise. The young people were given a tour of facilities which included one large nail bar for training and a smaller nail bar where commercial customers visit.

During the introductory talk the young people were told about the prices of the facilities e.g. the nail stations and the chairs. The college manager spoke about all of the different costs that you need to consider when setting up a nail bar – including purchasing equipment, heating, electricity etc. The students made a note of these as they would be included in their costings. The nail bar manager provided a catalogue of equipment for the teacher to take back to the school, which the students used to cost items.

The teams then measured the nail bars using tape measures to enable them to produce scale drawings. This meant that they had a good template to work from when they were thinking of their nail bars and allowed them to get accurate measurements for the stations.

### **Students measuring the nail bar**



The final part of the day saw the nail bar manager speaking to the young people about profit. She provided all the students with a price sheet and went through the prices of manicures & pedicures advising the price they charged customers, how much the materials cost for the treatment, the length of treatment and the profit per treatment. This allowed the students to understand how many treatments they would need to do to achieve a certain amount of profit.

As the nail bar at the college is used for students when they are on courses, the Nail Bar manager stressed that they were not paid. The young people had to consider how much they would pay their workers per hour and the implications on profit.

The visit to Newham College allowed the students to gain an understanding of how nail bars operate in the commercial world and start to think about how they could calculate the profitability of their bar. In addition they were provided with industry standard costings and catalogues, which allowed them to generate realistic figures for their nail bar.

### **Students listening to a talk at Newham College of Further Education**



**Students working at Newham College of further education**



**Class work**

The young people worked in their teams in class to produce a final presentation to be judged by a panel of "Dragons". The students had to produce a Power Point presentation about their nail bar. The presentation included details of the business including its location, size and product list. As the project was focused on functional Maths the young people included a scale drawing of the nail bar, costings for products, a price list and a profit and loss account. The profit and loss account included projections of how many treatments the young people thought would be completed every day and the profit they would make, taking into account outgoings including: staff wages, products, overheads etc.

**Students working on their presentations**



The teams worked extremely hard to produce professional presentations, which showed that they had put time and effort into the work. Many of the groups produced additional information such as business cards and business plans.

The teams presented to the rest of their class and the teachers choose the top five groups from each class. At this stage the teachers were able to make a judgement based on how well the students had worked in their teams; those that worked well together produced better presentations.

### **Judging**

The top ten teams presented to a team of four judges. These judges were Marion Faust, Director NEBP, Ruth Lydall, Stratford City Education Development Officer, Kenneth Foy, Women's Business Centre and Steve Wright, Maths Advisor, Newham.

The young people had prepared the hall at Plashet for the final presentations. Parents and friends were invited to attend and there was a good attendance from both. The students were responsible for providing refreshments for visitors and acted as excellent ambassadors for the school.

### **Students presenting to the judges**



The judging panel all had scoring sheets for the different teams, the teams were judged on four criteria:

- 1) Power Point presentation – were the slides easy to read and attractive, did the presentation have a logical order, did the slides contain all the relevant information – company name, location etc. This helped to assess the students ICT skills
- 2) Scale Drawing – was it to scale, did it make sense, was there a key, was it well presented. This helped to assess the student’s ability in scale drawing.
- 3) Financial information – did it make sense, had they included all the figures, calculated profit, were the figures correct. This helped to assess the student’s financial skills.
- 4) Presentation skills – clarity of voice, eye contact and use of props. This helped to assess the student’s communication skills.

Each of the four categories were rated out of five. The totals for each team were calculated and the judges scores were added together to calculate the winners. The winning teams received their prizes and certificates from the Dragons and were congratulated on their hard work.

### **The winning team**



## **Evaluation**

### **What Went Well**

The groups worked well together on the project and many of the teams put in significant amounts of work outside the classroom. This showed that they were inspired and interested in the project and took the work seriously. The students worked well in their teams and their team working and communication skills developed over the project.

This project enabled the young people to look at Maths from a different angle and helped to build their confidence when looking at scale drawings and calculations.

The project allowed the young people to develop a number of skills – team work, communication and build their understanding of Business. In addition, it utilised ICT and literacy skills in the Power Point presentation.

The project was well supported by the school with the teachers putting in extra work and ensuring the profile of the project was high.

The visits to the Women's Business Centre and Newham College were successful and allowed the students to learn in an out of a class context.

### **What I Would Do Differently Next Time**

Although the students had a general idea about how they would be judged it would have been effective to give all the groups the judging criteria at the beginning of the project. This would have enabled them to prepare more thoroughly for the final presentation. In addition, it would have been beneficial for the students to have had a workshop on presentation skills to assist them with their presentations. This could help develop their communication skills.

The young people could have benefited from more information about financial documents, and specifically how to calculate Profit. A second day at the school could have been arranged for a finance workshop to assist the young people.

### **Teacher Feedback**

This was a good project that was separate to the normal curriculum. It was a good, functional project which gave the students an insight into how money works. The young people were able to apply computer skills in the project and therefore combine ICT and Maths. They need to develop their presenting skills, especially using Power Point by minimising the number of slides that they use.

The project was planned for an ideal time as it gave the students a focus after SAT's. The young people really enjoyed the project and

it started to take up more lessons as they were keen to develop their presentations. It helped to develop the student's confidence and abilities in Maths which will stand them in good stead for their GCSE's.