

CORNERSTONE MATHS

Langdon Park School, London Borough of Tower Hamlets

Langdon Park School was one of the original pilot schools for Cornerstone Maths and so began piloting the curriculum units in 2011. Since then, the school has embedded all three curriculum units in their scheme of work and the units are expected to be taught by all teachers of key stage 3 mathematics. They have also developed their own approach to assessment and have an on-going plan to support trainees and new teachers to the school to become confident to teach the Cornerstone Maths units. This has been vital as the original teachers to teach the units have long since moved on from the school!



Andrew Labinjoh (Head of maths 2010 – 2016) with Year 8 pupils.

Which CM curriculum unit did the department focus on first?

The department began with the *Linear functions* curriculum unit, which was originally piloted by the head of maths and an experienced colleague. They took the whole of the following academic year to involve other teachers of key stage 3 maths by supporting them to pilot the Linear functions activities. Alongside this, the head of mathematics and a third teacher were involved in the funded pilot of the *Geometric similarity* unit.

Which (new) teachers were involved and how?

In 2012-13, a further two teachers were involved to pilot the third unit, *Patterns and expressions*. As before, a more senior colleague worked with a less experienced teacher (or trainee) and, in time, organised in-school professional development for the other key stage 3 teachers. This PD took the form of:

- short inputs during department meetings from teachers as they piloted Cornerstone Maths lessons;
- longer sessions during shared professional time to play with the software, plan lessons and discuss pupils' outcomes.
- lesson observations and team-teaching.

A key strategy was to expect all trainees at the school to teach Cornerstone Maths lessons (with support from the class teacher) as the topics arose in the scheme of work. This gave trainees a significant opportunity to develop their teaching and also set an expectation that teachers at Langdon Park School were expected to teach maths with dynamic technology.

How was the CM unit aligned to the mathematics scheme of work?

This happened over a period of 3 years as, for each curriculum unit, the Head of Department wanted the teachers to have had an opportunity to trial unit with a key stage 3 class, supported by a 'lead teacher' for that unit BEFORE insisting that all teachers should teach the units. Alongside this, the department included student assessments of the Cornerstone Maths unit content in their 'Learning journals' which acted as a positive incentive for the key stage 3 teachers to teach the units as best they could!

How did the department organise access to the technology?

Initially, the department did not have any access to technology. They used central school funds to purchase a half-class set of laptops in order to take part in the 2011-12 pilot.

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Following this, the department used income to the department from PGCE student placements to buy more laptops and a class set of iPads. Dedicated IT technician support time to maintain the laptops and iPads was also provided from central school resources. The department has sufficient access to suitable technology to enable the Cornerstone Maths curriculum units to be taught across year groups.

What types of technology were used?

The department has access to wifi enabled laptops and iPads.

How did the department assess pupils' learning to satisfy school-imposed data collection?

Initially, a 'unit test' was developed by one of the 2011-12 pilot teachers for the *Linear functions* unit. This was later revised by members of the department and a set of assessment questions were included in the department's end of unit assessments.

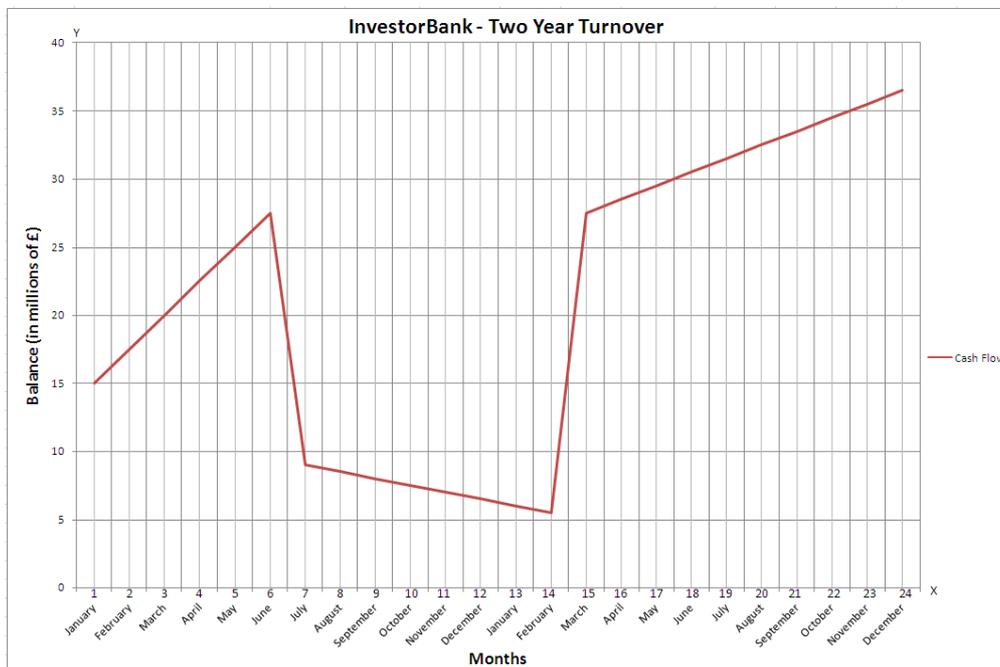
Subsequently, assessment questions have been designed by the department to match each of the curriculum units.

Example question:

9. *InvestorBank* is a leading investment bank with plans to expand. They have given us the information on their profits and losses.

- The amount of money (in £) that they have in the bank is called their cash flow.
- On the 14th of each month the bank account is checked and placed on a graph.

Over the past two years this information has been stored. Using the graph below, answer the following questions.



9 (a) What are the cash flow balances at the beginning and end of the two year period?

Beginning:

End:

9 (b) Write a sentence describing *InvestorBank's* cash flow, over the two years.

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- 9 (c) Between which months did *InvestorBank's* cash flow increase at the fastest rate?
Answer: _____
- 9 (d) Between which months did *InvestorBank's* cash flow decrease at the fastest rate?
Answer: _____
- 9 (e) Write an equation for *InvestorBank's* cash flow between the following months:
- | | | |
|------|----------------------------|-----------------|
| i. | January 2010 – June 2010 | Equation: _____ |
| ii. | July 2010 – February 2011 | Equation: _____ |
| iii. | March 2011 – December 2011 | Equation: _____ |
- 9 (f) Using the equation that you have written for the period March 2011 – December 2011, predict whether *InvestorBank* will reach a cash flow of £40 million by February 2012. Explain your answer:
- _____
- _____