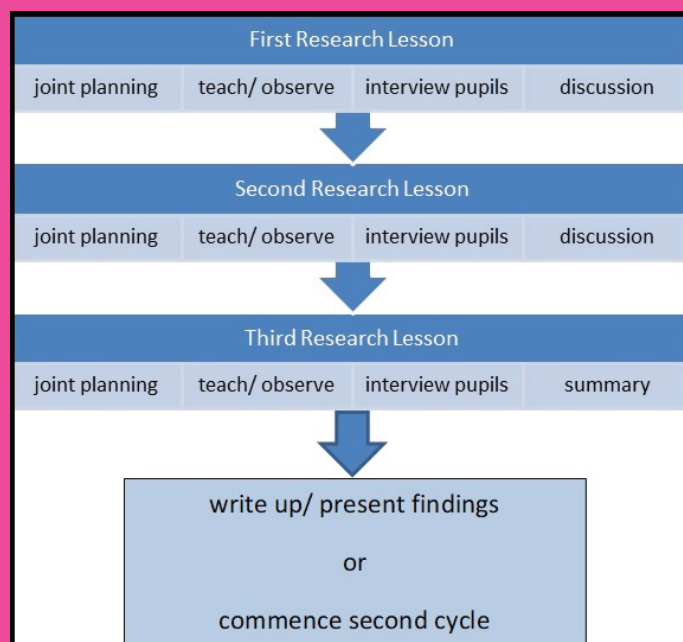


## Lesson Study

We deliberately arranged the early stages of the Lesson Study CPD to begin just after the two 'mastery novice' teachers has been on an intensive textbook training course in March 2017. This worked incredibly well as they were full of inspiration and keen for their actions to have maximum impact. The question we considered initially was simply, 'How can you deepen the learning experience for some **advanced** individuals without straying into the curriculum content of the next year?' As we began the ECC **Lesson Study** training programme, we realised that it would be possible to look at and make a difference to the progress of many different groups of learners operating at a variety of 'depths'. As the teaching of fractions was considered an issue at school we decided that we could focus our **Lesson Study** activity on that 6 week block of work.

Our ECC training set us up perfectly to start a **Lesson Study** cycle with input from an **ECC National Adviser** and guidance to support us. The workgroup was comprised of four teachers; the three Year 3 teachers and the supporting maths subject leader. It was decided that 3 children from each class would be 'case study' children (a total of 9 over the complete round) who would be interviewed following each lesson and that the subject leader would teach once during each cycle. So, the class teacher would be able to observe their own class once and teach it twice. It was also decided that the two observing teachers would teach the lesson to their class straight after observing it being taught to another group of children.

A diagram of the ECC **Lesson Study** cycle can be seen below:



The second and third cycles were arranged to take place after the maths subject leader had been on a 2-day course looking in depth at the teaching of fractions. The research question was agreed as, 'Do visual representations help children to understand fractions?' This was chosen due to the fact that fractions teaching in Y3 has almost always involved no supporting images, or at the most the use of a

predivided circle or square.

It was nothing short of shocking at times as to how much difference some small changes would make to a child's progress, confidence and engagement within the lesson. Adaptations to teaching made in the light of **Lesson Study** observations involved things as simple as removing a rubber (!) allowing thinking time, reconsidering talk partners, creating a list of child friendly enrichment activities and use of scaffolding / stem sentences. We interviewed the case children after each lesson and took their thoughts and observations into consideration when planning their next steps. We decided to use fractions as a focus for each of the cycles as it lent itself perfectly to what we wanted to explore.



### Successful outcomes

As mentioned, we were initially looking to find ways of making sure we were providing challenge for the rapid graspers, but we soon realised that it was possible to observe and therefore respond to **all** needs within the classroom. As we approached each of the three cycles our ECC National Adviser suggested that we select 3 pupils to be used as case study children. We deliberately chose children that were 'of interest' in that we felt need to delve deeper into their 'habits' with a view to maximising their learning. We tried to ensure that the 3 children represented main achievement groups identified from summative data based on the formative judgements that we were making daily and recording on a regular basis.

We quickly realised that the **Lesson Study** approach was allowing us insight into learning taking place on an unprecedented level. The fact that we taught the research lesson first thing in the morning, observed by teachers from the two other classes yet to teach it allowed the whole cohort to benefit hugely from receiving a lesson that had just been allowed to play out.

The two observing teachers were able to make instant revisions to the lesson planned by the team. An example of this was when the children unexpectedly struggled to fold paper during one lesson causing it to temporarily become de-railed. The 2 observing teachers were able to teach their lesson after play anticipating this very problem and were able to take steps to stop it becoming an issue.

So, do visual representations help children to understand fractions? We learnt that the children only reached a superficial level of understanding if they used images of fractions that were pre-prepared by us. Procedurally they appeared to understand, but not conceptually. The real path to success lay in them being able to create their **own representations** and in some cases they were able to use their own images to teach what they had learnt to others.

The three classes were tested using assessment papers matching the Year 3 curriculum and the textbook chapters in February (before the **Lesson Study**) and at the end of the year (after the completion of the 3 cycles.) The results for the whole cohort were as follows:

- **February 2017 - 43%** 'passing' the test and therefore being considered on track for end of year expectations.
- **July 2017 - 74%** 'passing' the test with 21% obtaining a mark showing that they are operating in the top 20<sup>th</sup> percentile. (Information gained from national textbook assessment paper trials.)

## Evaluation

Working in a close team setting where everyone played a part in planning and delivering a series of lessons lead to the kind of professional discussions that can only be described as being beyond the norm. It felt that we were a part of something simple yet incredibly powerful. We ended the year on a high note, with all three teachers happy with their end of year scores and feeling very confident about their own maths teaching, especially in the area of fractions. The ECC training had put us in the perfect position to support and develop our own professional development.

The children involved in the study certainly did very well by the end of the year. The study almost highlighted their existence, leading to all of us taking an interest in their progress. We became greedy for more information, wanting to repeat the process with more children to see how we could improve their progress by making small alterations to their learning experience. The outcomes of each cycle were so interesting that they became areas of discussion for a different workgroup of teachers from local schools that met regularly to discuss our development of a mastery approach to maths teaching.

I know all 3 teachers really appreciated the timing of the study in that it followed on from the textbook training. It provided a unique opportunity to see in a large scale way how the theory could be applied in **our** school with **our** children. The whole idea of challenging children's understanding in front of others can be scary as we naturally want everything to go right when we are being 'observed'.

As one teacher commented, 'The process helped me to relax when teaching in front of others and realise that we need to go with the direction that is right for the children and not necessarily stick to a rigid lesson plan.'

## Next steps

It's safe to say that we would jump at the chance of being part of another round of **Lesson Study**. Ideally we would like to repeat the process nearer to the beginning of the year so that we could have longer to act upon the information gained. If we could involve other year groups and other subjects at the same time, we would be able to be more 'organised' and have supply staff covering several teachers for half a day moving from one year group to another. Although we wouldn't need a second round of ECC training in **Lesson Study** we would consider buying in more 'expert' support for mathematics from ECC.

Even if we don't have a chance to do more research lessons, the benefits from this experience will last a long time. The teachers are really looking forward to getting to the fractions chapter with the next set of children and will certainly consider the adaptations they employed for use with their new charges in the teaching of all domains.

## School context

In September 2015 our school was chosen to take part in the NCETM project looking at the use of high quality textbook to support teaching for mastery. Y2 staff received intensive textbook training in February 2016 and started using them immediately. When the children moved from Y2 to Y3 in September the decision was made to move one of the Y2 teachers up with them as they were experienced with textbook use and could share with their Y3 colleagues.

Unfortunately, it was soon clear that the three classes weren't performing at the same level with the class taught by the textbook experienced teacher outstripping the other two. Despite support in planning from the textbook experienced teacher the other two teachers weren't seeing practice in the classroom and this was hampering their adoption of effective textbook use. **Lesson Study** seemed the perfect tried and tested structure to remedy this and at the same time we could focus on our 'rapid graspers' over whom we had some concerns.

