History Mysteries: An Intervention Approach for the Development, Enhancement and Acceleration of G&T Pupils

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 INTRODUCTION: COGNITIVE ACCELERATION IN HISTORY EDUCATION –
A case study of an Intervention Strategy for teaching 9-11 year olds in an English urban state school (Voluntary Aided Catholic Primary)

In.1 This report contains key elements of a case study of Curriculum Research and Development in Gifted and Talented education. The Research and Development programme explored the effectiveness of an Intervention Strategy in relation to the learning of 9-11 year old pupils identified as Gifted and Talented in an inner city Catholic Primary school. The Intervention Strategy was based upon the principles of both Shayer and Adey’s Cognitive Acceleration in Science Education programme and the Nuffield Primary History Project. The Intervention Strategy was located within the year 5 & 6 curriculum, and as such provided enrichment, acceleration and enhancement for all pupils as well as those in the Gifted and Talented cohort.

In.2 Pupil solving of History Mysteries and their related reading of History Mystery stories were central to CACHE. Pupil involvement in detective work and narrative, in the form of stories and accounts, were central to the Intervention Strategy. Enquiry and narrative were used creatively to engage the pupils’ imagination and to help them to solve problems. The teacher introduced the History Mysteries through oral story telling and using History Mystery booklets for each mystery as class readers. These booklets were either read: aloud as shared whole class reading; by single pupils or silently. Through the genre of a magical history mystery the characters in the stories were transported into a different time period and presented with problems to investigate and dilemmas to solve.

The steps which the central characters in the booklets, two children Sam and Jane, took to solve their History Mysteries became a model from which the pupils could assimilate the investigative procedures, processes and skills [techniques] of the historian. The stories enabled pupils to recreate for themselves the tenor of the past. The empathy pupils felt with the fictional characters became an interesting issue within the research. The question of how the involvement in story, the blurring of fact and fiction, and the practice of solving detective enquiries enabled pupils to make their own interpretation of historical events, was a continuous strand of the research process.

In.3 The issue of supporting Gifted and Talented pupils, however defined, has become a priority of the government since 2001. The school has responded proactively to the whole range of government initiatives, particularly in the areas of literacy and ICT. A priority is the development of pupils’ higher order thinking, and skills in oracy and writing. Accordingly CACHE mapped fully on to the school’s priorities.

In.4 An opportunity arose from the National Academy for Gifted and Talented Youth’s teacher bursary competition to secure funding for CACHE research. A bid was successful. I taught the strategy with the children from September 2005 until April 2006, working as a practitioner researcher with a mentor from a Higher Education Institution.
In.5 The research methodology was that of HEI led practitioner research involving Action Research, with the Higher Educational Institution mentor working closely with me in the development of the Intervention Strategy, the planning and resourcing of the teaching programme, its teaching and an overview of the data collection.

In.6 It was therefore logical to:

- respond to the question of what to do about Gifted and Talented provision within the school.
- To look at this within the context of active whole class teaching.
- To build upon work that I had done over the previous five years.
- To see how I could work with my tutor to create and develop a teaching programme that would deal with the issues of Gifted and Talented pupils through inclusion.
- To identify a specific research question or questions.
- To research into the effectiveness of any Intervention Strategy that we developed.

In.7 The research programme began in 2005, with the planning of the bid from the spring into early summer and the consequent implementation from the beginning of the autumn term, 2005. The gathering of the data continued over two school terms. This report was completed in July 2006.

In.8 The research background was a six day Continuing Professional Development course in spring 2001 on History Education that led to a Best Practice Research Scholarships from 2001-2, and the completion of Masters of Education Modules at Exeter University.

In.9 For CACHE we used the same research site; the school, but different cohorts of pupils.

In.10 The report considers the development of the Intervention Strategy of Cognitive Acceleration in History Education [CACHE]. It examines how the seven principles are reflected in the responses of pupils identified as Gifted and Talented.
SECTION 1  THE CURRICULAR CONTEXT:
Gifted and Talented education, the curricular imperatives, cognitive acceleration, the Intervention Strategy: cognitive acceleration in history education [cache]

1.1 Introduction

By 2005 I had been able to develop a teaching programme for pupils built around interactive whole class teaching using a wide range of teaching and learning strategies. The National Academy for Gifted and Talented Youth, (NAGTY) provided an opportunity to develop the materials and approaches in relation to a specific challenge: the development of an inclusive teaching programme that would reach out to all pupils and not only those identified as Gifted and Talented. The programme was embedded in the curricular provision of an English State School, see Section 2, following a prescriptive curriculum that the English government had laid down and enforced through an inspection regime that has draconian powers.

1.2 The Curricular imperatives

1.2.1 The School Curriculum and the English National Curriculum for history

The National Curriculum Handbook for primary teachers in England, Key stages 1 and 2, (DfES, 1999) was the framework from which the school curriculum was developed. The first section stated Aim 1, 'the curriculum should build on pupils’ strengths, interests and experiences and develop their capacity to learn and work independently and collaboratively….the curriculum should enable pupils to think creatively and critically, to solve problems.' (DfES, 1999; 11) The National Curriculum included in its key skills: communication, application of number, information technology, working with others, improving own learning and performance and problem solving. (DfES, 1999; 20-21) The research strategy included aspects of: English, History and Information and Communications Technology and Design Technology.

The school had introduced a thematic curriculum during the academic year prior to the research phase. This was reviewed and revised during the research period. The school year had been divided into five distinct blocks; and several themed weeks. Each themed block of teaching related to an overall question, which became the title for the linked programme of study specific to each year group. The long term planning of these different themes for each year group, had been collated by a grid of ‘learning links’ which mapped together the curriculum areas which complemented each other.

So, each of the nine National Curriculum subjects was addressed and incorporated into a theme. Cross curricula links were made by class teachers as they planned and taught each unit. Each five week themed block of teaching was immediately followed by a review week. During this time, teachers considered targets which had been set previously with individuals and groups, discussed progress and achievements with pupils and continued to carry out formative and some summative assessments.

In relation to the teaching and learning of history the school had a policy in place which outlined the key aims and objectives. The medium term planning was mainly taken from the History examples of schemes of work for Key Stages 1 and 2 (Qualifications and
Curriculum Authority, 1998.) Teachers were encouraged to adapt these to meet the needs of their pupils, to be innovative and to include visits to local museums and parks and include hands on experiences of ‘doing history’. Teachers were also encouraged to make cross curricular links in physical education through dance and in English in drama.

The English National Curriculum for History Programme of Study for Key stage 2 was revised in 1999 and contained two distinct yet complementary strands: one substantive knowledge, i.e. Historical dates, facts, concepts and accounts; the other procedural knowledge, the skills, processes, procedures, protocols and concepts involved in ‘doing history’. The syntactic element was covered in four key elements: chronological understanding; Historical interpretation; Historical enquiry and organisation and communication.

The breadth of study of the National Curriculum for History required that during Key Stage 2, pupils should be taught a local history study unit, three British history study units, a European history study unit and a world history study unit. (QCA/DfEE, 1999: 106)

1.2.2 The National Literacy Strategy, Language policy

The specific requirements of the highly prescriptive National Literacy Strategy for pupils participating in the CACHE programme were met through the school’s overarching teaching and learning plan. The National Literacy Strategy objectives for each year group, and each term, were used as an outline from which class teachers could develop their medium term planning. A priority was given to speaking and listening. These skills were a key part of the G&T Intervention Strategy’s teaching-protocols or highly sophisticated teaching strategies. As such they complimented the school curriculum. During the two research terms a whole school approach was introduced to improve each pupils’ ability to plan and write through the introduction of visual frameworks and grids.

1.2.3 Questions and Questioning, Hypothesising

A major influence upon the research was an older but enduring tradition of A Language for Life - English Across the Curriculum, The Bullock Report (1975), Bullock stated that ‘reading, writing, talking and listening should be treated as a unity, and there should be unbroken continuity across the years.’ It cited ‘a lesson as a verbal encounter’ in which ‘the learner has to make a journey in thought for himself.’ Central to Bullock is the statement that; ‘The child should be encouraged to ask good questions as well as provide answers to set up hypotheses and test them, and develop the habit of trying out alternative explanations instead of being satisfied with one.’ (HMSO, 1975)

The role of questioning in learning history related to the skills and processes that permeate the National Curriculum for History. At Key Stage 2 questioning appeared under Key Element 4 Historical enquiry ‘Pupils should be taught to ask and answer questions and to select and record information relevant to the focus of the enquiry.’ (QCA/DfEE, 1999) The role of questioning in the History National curriculum for Key stages one and two was indicated by the exemplar schemes of work – each unit centred on a key question, (QCA, 1998). The history curriculum, with its investigatory, evidence-based procedures provided focus for questioning. Hilary Cooper stated ‘It is the questions historians ask, however, and the ways in which they answer them, that distinguish history as a discipline.’ (Cooper, 2000:2) ‘The development and refinement of
questions is a continuous process that involves both you and your pupils.’ (Nichol with Dean, 1997:32)

Clear ideas about History as a form of academic knowledge and how that can be translated into teaching knowledge underpinned CACHE. In particular, the influence of R G Collingwood influenced our approach to teaching history in primary schools. One strand of his thinking was that ‘knowledge...must be the outcome of a moving, active, dynamic process of hypothesis formation and testing. Questioning is one half of the act of which the other half is forming an answer, and it takes both halves to make up a situation of knowing anything.’ (Collingwood)

A central feature of CACHE was the representation of knowledge in different forms and the transformation of that knowledge from one form to another, thus developing and deepening understanding. Central was Bruner’s theory that knowledge is represented in three ways: the iconic [visual] symbolic [the linguistic] and the enactive [physical].

1.2.4 Narrative and Story Telling

A dominant factor in the research was the belief in the importance of narrative in the form of story telling. “Story is central to history and its teaching.” (Fines and Nichol, 1997)) John Fines expounded the merits of good story telling. He also stated, “The special quality of a History story is indeed the tension between reality and imagination, the dynamic of understanding between the present observer and the past observed. Not to break faith with the past as we find it and can manage it, yet to show it as lively and comprehensibly as our imagination may serve, that is our joint aim.” (Fines and Nichol, 1997:48)

1.3 NAGTY and History Education at NAGTY Summer schools at Exeter

NAGTY, through its residential and non residential summer school programmes at Exeter, provided an opportunity for us to systematically and hopefully rigorously develop and test the teaching and learning approaches embedded in CACHE.

I had the opportunity to observe and assist on one two day History Mystery course for NAGTY members. The course’s aim, *Harry Potter meets the History Detective*, was for the students to encounter history as a multifaceted discipline: to examine history problems in depth and together, to form hypotheses about what may have happened; to use evidence and interpretation skills to create their own historical understanding. These constructs were made through intensively working upon historical sources; pupils working as groups collaboratively and active whole class teaching involving interaction between pupils and teachers. The pupils needed to acquire and develop the schema of history detectives to solve the history mysteries they faced.

1.4 Cognitive Acceleration in Science Education principles and History Education

1.4.1 Cognitive Acceleration in Science Education [CASE]

An aim of the ‘History Mystery’ study days at Exeter for the NAGTY students was to apply the Nuffield Primary History Principles and strategies from the Cognitive
Acceleration through Science Education ideology into the teaching and learning of history.

CASE - Cognitive Acceleration through Science Education aimed to raise the general levels of thinking amongst 10-14 year olds studying science through an Intervention Strategy based upon six principles. An understanding of cognitive psychology and of science education were used to develop both an active classroom methodology, a set of tasks to challenge students’ thinking and reasoning and to help to make them conscious of their own thinking and reasoning strategies in solving problems. (www.case-network.org/case_history.html)

The teaching strategies used on the ‘History Mystery’ study days at Exeter included the six CASE principles a seventh, mastery learning. These were adapted and refined for The Intervention Strategy CACHE adopted 2005/06 at St. Anne’s.

1 Cognitive development
A schema is a general way of thinking which can be applied to different contexts; the ‘tools’ that underpin thinking. Different CASE models have applied different schemata which have provided a clear set of types of thinking which can be used in teaching and assessment activities. (Shayer & Adey, 2002: 4 – 5) The plan is to provide pupils with the schema to aid them to have strategies to solve a series of history mysteries in the form of detective enquiries. This will require an understanding of some of the educational ideologies about how children learn to think, use thinking and have cognition to learn; the mechanics which underpin thinking. (Garton, 2004: 3)

2 Concrete preparation
In CASE this stage introduces pupils to the intellectual problem, the context and the vocabulary required to help pupils to think and talk. The pupils need to know the context: information - the starting point that they should be able to access, assimilate and build upon; the vocabulary they need to think and talk about the topic: the procedures, skills and concepts that they will use and develop in their schema. Together these make up the problem solving protocol the pupils use. The learning has to build upon secure, established foundations.

3 Cognitive conflict
A central idea is to face children with a challenge[s] that they cannot solve independently. They have to solve problems through working with the help and support of other pupils and / or the teacher. The teacher provides ‘scaffolding’; structures and supports at each stage; questions / engages in dialogue that drives thinking forward; provides suggestions as to approaches and procedures and relevant information that can help the student come up with solutions to the problem being faced. Linked to cognitive conflict is effective group work:

The concept of cognitive conflict draws together ideas from Piaget and Vygotsky related to cognitive processing, in particular the work of Vygotsky in trying to assess the difference between what a child may achieve unaided and that which may be achieved with the support of a more able peer or adult; commonly referred to as the Zone of Proximal Development (ZPD). An issue for the research will be how to collect data which will help to reveal if or how perceptions are changed.
4 Social Learning
Teaching and learning within schools takes place within a social context. Piaget acknowledged the importance of the social and physical environment. Vygotsky established that the construction of knowledge and understanding is pre-eminently a social process which is then internalized by individuals. (Shayer & Adey, 2002:5) The resolution of the cognitive conflict element depends upon a socially cohesive, non-threatening, supportive co-operative environment. Pupils work in pairs or groups. Here there is freedom to discuss, debate and to work together as a team with teacher support. But, such teamwork has to have clear goals, rules and regulations. Central to co-operative learning is the idea that children have complementary roles needed to solve the problem. In this way they can move towards a common solution beyond their individual capacities and thus solving the problem[s].

5 Metacognition
This involves the ability to think-about-thinking, to rationalise the thinking involved, to re-live the process. To be metacognitive the children need to have the vocabulary and the training/orientation to be able to talk about what their thinking involved. Metacognition follows a thinking act. It is ‘reflection’, to be able to rationalise what problem solving involves, to analyse what occurred, to see how the ideas can be applied in dealing with future problems. The importance of language is here; both as a tool which provides a means by which meaning is built up as pupils talk, and as an aid to deciphering the thinking processes.

6 Bridging
This relates to transferability that the pupils should be able to transfer and apply the newly developed skills, processes and protocols across a range of subjects and learning situations. This also implies a cyclical element to the principles in that evidence of bridging may be acknowledged when a new activity is begun.

To these six principles, described as pillars, (Shayer & Adey, 2002: 4 – 6) a seventh was added; Mastery Learning.

7 Mastery Learning
Pupil engagement on any task should last as long as it takes for the pupil to master that task; progress will proceed at pace which is compatible with the perceived understanding of the pupils, not to lag, but to give sufficient time for concepts to be assimilated.

The impact of CASE Shayer and Adey have claimed that an enriched programme of intelligence-in-action in Science education has had a long term impact upon pupils in terms of attainment. (Shayer, M. 2000) ‘a deliberate policy of challenging learners to transcend their present level of thinking not only accelerates their rate of intellectual development, but also in the long term brings about the achievement which a matching policy on its own would have denied them.’ (Adey and Shayer, 1994:7).

Entwined throughout the processes in the CASE intervention strategies are aspects of educational philosophies from both Piaget and Vygotsky. The theory base pre supposes that it is valid to work on the basis of a general intellectual function in children which underlies any particular context dependent component; that general intellectual function develops with age, and that development is influenced by the environment and maturation. (Shayer & Adey, 2002:3) There are huge issues here; not without controversy, in particular about the justification of the Piagetian notion of ‘stages’ and the
ages at which children can perform intellectual tasks. (ibid, 2002: 5), problems recently acknowledged by Adey, (2005: 17)

1.5 Cognitive ACceleration in History Education [CACHE] -The Intervention Strategy

1.5.1 The CACHE precepts

The CASE and Nuffield Principles were used to create an Intervention Strategy, Cognitive ACceleration in History Education [CACHE] that lasted for over two terms. The Intervention Strategy aimed:

(i) to use CACHE’s seven principles that focus upon higher order problem solving strategies and procedures to develop, enhance and accelerate related discrete thinking skills of gifted and talented pupils.
(ii) To implement the teaching strategy for mixed ability primary school classes.
(iii) To ensure that other pupils who participated in the Intervention Strategy benefited commensurately.

1.5.2 Ideas behind the strategy

The research aimed to examine the development of thinking skills in the primary curriculum (www.gtce.org.uk, 2005), through learning history.

Historical thinking ranges from the logical to the imaginative and speculative; ‘the formal, coldly logical, with its deductive chains of thinking to the spontaneous, warm, creative, inductive, imaginative, and speculative approach of creative thinkers.’ (Fines and Nichol, 1997: 17)

Key skills are communication, working with others, improving own learning and performance and problem solving (DFEE & QCA, 1999: 20-21) may be ‘substantially boosted through infusing teaching thinking into history’. (Fisher et al, 2002: 3) Fisher, advocated strategies to help history teachers embed within their teaching thinking skills through providing pupils with challenging learning experiences which require higher level thinking (Fisher et al, 2002:5). Fisher cited history mysteries as an ideal medium through which higher order problem solving skills can be developed and gave examples of this approach at Key stage 3. (Fisher et al, 2002: 50)

1.5.3 Nuffield Primary History Project Principles

The planning of the teaching adhered to the key principles of history teaching found in the ethos of the Nuffield Primary History project. The elements are relatively sequential; together they provided a framework for the planning of individual lessons, and for the pupils’ learning.

1 Challenge: The teacher should challenge the pupils so as to ensure that they are working in an area where they are cognitively challenged, i.e. required to solve a problem or problems that they cannot manage independently.
2 Questioning: Pupil and teacher questioning should frame the enquiry, at every point in the teaching questioning and related hypothesizing should help push the enquiry on.
3 Authenticity Where possible use authentic, genuine sources.
4 *Detailed Study* The investigation and resolution of the problem should involve study in detail; the pupils should have sufficient information to be able to think as deeply as possible.

5 *Accessibility* Make sure that the teaching starts from a point which the students know and are confident about. They should be able to move quickly and effectively from what they know and can do to what they do not know and that they find impossible to do with help. The teacher acts as a bridge in order to make the record of the past accessible.

6 *Resolution and Communication* The pupils need to resolve the enquiry and communicate it to an audience using an appropriate medium or form.

Table 1, used to analyse teaching-protocols, indicates how the Nuffield and CASE principles related to each other.

**Table 1 Nuffield / CASE principles**

| COGNITIVE ACCELERATION IN HISTORY EDUCATION [CACHE] |
|---------------------------------|----------|----------|-----------|----------|-----------|----------|
| **lesson** | **title** | **class** | **date** |
| **episode** | | | |
| | Schema Cognitive development | Concrete preparation | Cognitive conflict | Social learning | Meta cognition | Bridging | Mastery learning |
| **NUFFIELD PRINCIPLES** | | | | | | |
| Challenge | | | | | | |
| Questioning | | | | | | |
| Depth | | | | | | |
| Authentic sources | | | | | | |
The aim of the research was to incorporate Nuffield and CASE principles into the planning of the Intervention Strategy around a number of History Mysteries, see p. 12

1.6 The CACHE programme: teaching strategy, planning, teaching and learning tasks/activities/protocols

1.6.1 Background

The teaching programme built upon the experience of the teacher researcher and mentor and their practice in the teaching and learning of history. The shared aim was to create an effective partnership between the Higher Education Mentor and the class teacher; so that effective collaboration could be practised. The roles of the Higher Education mentor and the teacher as practitioner researcher in school became subtly defined; each brought insights from differing perspectives to achieve the common agenda of moving on the pupils’ understanding and their self perception in learning.

1.6.2 Demonstration, modeling, review and implementation

The key teaching episodes were demonstrated and modelled through the HEI mentor teaching them with me as observer and recorder. These episodes were the basis for systematic reflection upon practice with evaluation, review and then with me teaching the protocol to a different class of pupils. This reinforced the methodology of action research and reflection. All support staff were involved in the reflective process of evaluation, and their role as observers and support for individual pupils was invaluable.
1.7 Planning

1.7.1. Planning the programme

The framework for the plan of the Intervention Strategy was fixed in a grid of commitment initially over two terms; autumn and spring, in two classes. A decision was made to balance the intervention so that in Year 6 there was more time devoted in the first term than the second. This was an acknowledgement of the school’s organisation of the curriculum prior to the Statutory Attainment Tasks, where the timetable was more likely to be redefined to include opportunities for smaller focused group teaching, to meet the needs of pupils of differing abilities preparing for the tests. It was a deliberate policy for the Intervention Strategy to be accessible across the ability range in whole class teaching sessions.

1.8 Teaching and Learning Tasks: The seven CACHE sessions

1.8.1 The Intervention Strategy

The CACHE Intervention Strategy’s sessions took place in a regular sequence over two terms, roughly three/four weeks apart. Sessions could last from one to three 1.5 hour lessons.

The seven sessions were:
1. Baseline assessments:
   - Concept maps
   - Skills choices
   - The Strange Death of Mr. Woods
2. The Mystery of Queen Victoria’s Missing Wedding Ring
3. The Mystery of Archimedes and the King’s Crown
4. The Mystery of Red Christian Goes Missing
5. The Mystery of the Empty Grave
6. The Mystery of the Man in Black
7. Exit assessments:
   - The Man in Black
   - Concept maps

Each session introduced the pupils to a history mystery set in a different time period. There was a mix of fiction and faction genres; the first mystery was ‘The Mr. Men Mystery: Little Miss Sunshine and the Missing Cake.’ The common aim was to present the pupils with problem solving activities which needed to be discussed and reasoned out in collaborative learning. Through these activities we planned to observe and record the pupils’ development of different thinking skills.

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<thead>
<tr>
<th>Date</th>
<th>Programme</th>
<th>Detail</th>
<th>History – The National Curriculum for England [<a href="http://www.nc.uk.net">www.nc.uk.net</a>]</th>
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<td>Skills, Processes, Procedures and Syntactic Concepts</td>
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<td>Intervention Strategy</td>
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<td>Skills, Processes, Procedures and Syntactic Concepts + Victorian Britain, substantive knowledge</td>
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<td>Strategy 3</td>
<td>Archimedes and the King's Crown</td>
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<td>Concept webs Exit tasks The Mystery of the Man in Black</td>
<td>Skills, Processes, Procedures and Syntactic Concepts + Britain 1500-1700, substantive knowledge</td>
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1.8.2 The Intervention Strategy, Thinking Skills and CACHE principles: Schema and Concrete Preparation

The Intervention Strategy’s teaching-protocols aimed to develop the pupils’ thinking as history detectives. As such, the teaching-protocols’ learning outcome was the development and assimilation of the schema required to undertake historical enquiries.

The skills and processes foci were a crucial element to each lesson; skills and processes related to: what to do, why to do it and how to do it. Pupils needed to be led into the processes, the schema involved historical investigation: the skills, procedures and concepts.

The stories with the familiar characters and common everyday issues drove the pupils into the crux of the mysteries through the magical imaginative devise of Uncle John’s ability to send the story characters back in time. Here we deliberately emphasized concrete preparation, moving from the known to the familiar.

A case in point was the Mr Men Mystery, we realized that all pupils might not know these books, so we bought a class set for them to refer to. The actions of the characters introduced the schema we aimed to introduce and develop, schema that enabled pupils to

- question;
- plan an investigation;
- search for evidence;
- follow up ideas;
- interview and interrogate historical agents;
- interrogate sources,
  - extract evidence/data
  - evaluate evidence/information;
- form hypotheses;
- seek for understanding collectively;
- draw conclusions,
- justify opinions,
- consider alternative points of view
- communicate understanding using specific genres and modes of communication

1.8.3. The Teaching-protocols

The lesson plans were teaching-protocols that followed a similar format. A teaching-protocol is a highly detailed procedure that outlines the stages in which a teaching strategy is implemented. As such, it is a loose framework that allows for adaptation and modification according to circumstances of the curriculum, the children, the teacher and constraints of time, environment and other extraneous factors. The teaching-protocol framework presented pupils with a familiar scaffold that related to existing schema, even though each problem was different.

The title for each lesson set its theme. Each lesson had a key question or questions for pupils to address, usually a standard of three. For example the questions related to the baseline assessments were:
- How can I show my thinking and understanding?
- How can we investigate as detectives to solve a history mystery?
- What may we do next time?

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<td>Skills, Processes, Procedures and Concepts of History as a Process of Enquiry</td>
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<td>These syntactic elements permeate the learning of the content below</td>
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<td>Concept webs Exit tasks The Mystery of The Man in Black</td>
<td>Britain 1500-1750</td>
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</table>
The planning of the Intervention Strategy and its implementation took fully into account and highlighted the seven Cognitive Acceleration Principles and those of the Nuffield Primary History Project. The Nuffield principles permeate the teaching, with contrasting emphasis on different aspects during a protocol.

In sections 2.1-2.7 we examine how the CACHE - Cognitive Acceleration principles were reflected in pupil learning with specific reference to pupils identified as being Gifted and Talented in the two classes we taught for the CACHE Intervention Strategy. While the evidence might appear subjective and anecdotal, it is illustrative and illuminative, as it is drawn from an extensive archive of research data.

2.1 Cognitive Development & Schema: - CACHE Principle 1

The Intervention Strategy provided pupils with the schema, the metacognitive strategies then enable pupils to solve history mysteries through them working as History detectives. The key was to use the child’s world with its interest in Harry Potter, story and imagination as vehicles for involving the children in carrying out historical enquires. For each history mystery the HEI mentor wrote a separate booklet, ranging from The Mr Men Mystery of the Missing Cake to the Mystery of the Man in Black. Each book enabled the pupils to become involved in solving the history mystery.

The History Mysteries followed a common thread with a preface to outline the characters and the setting. The key characters were two children: Jane and Sam who were able to travel back in time to experience at first hand some of the most interesting, exciting and amazing things which happened at the different periods of time when the history mysteries happened. Jane, as a young witch, had magical powers and portrayed a forthright sense of justice. Sam her best friend became an ally in all the adventures. Other key characters included: Uncle John, a famous teller of stories and a wizard, but a modern one with a micro-chip in his wizard ring; mum, dad, sister Rose and a mêlée of pets who could also assist with the investigations, and a deadly dull school teacher, Miss Woodhead, with whom Jane was constantly at war. The introduction in each of the books gave an outline of the people and places relevant to the story, a timeline and a map.

The stories began from the familiarity of the household at 2, Aelfred Road from which the characters were transported into the past.

*Uncle John looked at Jane and Sam: ‘Ready for your next history trip. Jane said she would like to visit a house like this one. I will see what we can do.’

With a twist of his wizard chip ring the room suddenly became dark. Sam and Jane realized that they were flying back through time. But, where would they arrive? When? Why? (Nichol, J. 2005: 12)

Through the shared reading of each story the pupils were lead into the crux of each history mystery.
The introduction of the idea of working as a history detective was woven into the fabric of each story. As Jane and Sam encountered different dilemmas in their journey into the past they had to decide how to investigate the problems they encountered. (Jane’s magical powers and her seeing mirror with its hidden ear piece enabled her to reveal information.)

But, the children mirrored how to set about solving an investigation. In the Mystery of Queen Victoria’s Missing Wedding Ring Jane took the lead:

‘The first thing is to ask these questions. Who might have stolen the ring? When was it stolen? Where was it taken from? How was it stolen? Why might it have been stolen? What might have happened to the ring? And then we have to work out how we might find clues that will help us answer the questions. When we have the clues we have to think about the evidence that they contain, and try to build up a picture of what happened. So, the first thing I would like to do is go upstairs and look at the scene of the crime. We will also need to search the whole building and the garden. And I need a list of everyone who was staying in the house whom I will interview.’ (Nichol, J. 2005: 36)

In this way the practice of asking questions became embedded in the pupils’ reconstructions of the history mysteries as they undertook the investigations. The reading of the stories was a regular part of each history mystery session. The reading and the working out went in tandem, so the pupils in effect worked along side the fictional characters and the plot was not revealed in advance.

The methods of archaeologists were shown through the description of how Mr Chambers and Mr. Brown unearthed the first treasures from the burial chamber at Sutton Hoo in ‘The Magic History of Britain; the Mystery of the Empty Grave.’

‘He calmed down and gave each of the children a pastry brush and showed them how to clean the objects that the archaeologists had photographed and recorded on a detailed grid where they had been buried. Once cleaned each object was placed in a box with a label on it. Jane also noted down and stored everything that as excavated and where it was found on her seeing mirror plan.’ (Nichol, J. 2005: 39)

The evidence for the pupils’ ability to develop a schema for solving the history mysteries was found in the group planning for how to investigate the Magic History Mystery of Queen Victoria’s missing Wedding Ring:

‘What we will do?
Plan
Group 3: - “if Lord Ashley’s servants are jealous. (sic)
- Search for fingerprints, the bedroom & outside the bedroom window”

Group 4: “-sort out clues
- Pick out crime suspects
- Search for fingerprints
- Interview people”

Group 6: “Read through the clues go to where it happened and see if you can find any clues.”

Group 8: “-ask questions
- Search for clues
- Interview everybody in the house
- Interview the maid”

Group 1: “- interview”
- Search the scene
- Ask questions

Group 2: 
- Ask questions
- Investigate the house? (look for fingerprints)

Group 5: 
- Ask helpers in the house if they had seen anyone creeping around
- Have you seen anyone walking around the house that doesn't work there?

2.2 Concrete preparation: CACHE Principle 2

The pupils needed to know the context: the starting point that they should be able to access, assimilate and build upon. This introduced pupils to the intellectual problem, the context and the vocabulary required to help pupils to think and talk; the vocabulary, the procedures, skills and concepts that they will use. The learning had to build upon secure, established foundations.

These precepts are noted by Margaret Boden in her writing about the interdependence of creativity and knowledge, that, 'creative thinking cannot happen unless the thinker already possesses knowledge of a rich and/or well-structured kind.' Boden (2001, 95) She also raises the issue of how the readiness to think creatively and to persist in doing so in the face of criticism and failure, is strongly affected by self confidence. (ibid)

As well as this we laid procedures for effective working: in pairs or groups using guidelines for roles. So the members of each group had generic roles and sub roles, in order to help working together. These were made explicit to pupils early in the lesson, recorded by groups on their notes sheets and referred to during and at the end of tasks.

Key words and concepts were included on lesson plans and cross curricular links were stated. The intended learning outcomes – the aims and objectives, related to the key questions were detailed. In each lesson the aim was for the pupils to develop their ability to: recall and present ideas; develop an understanding of what a history mystery investigation involves; to know how constructing an understanding of the past can be done from a creative and imaginative perspective which involves fiction.

Each of the history mysteries was introduced to the pupils from a known position; a situation or genre with which they could understand and empathise.

For the story and problem solving of Archimedes and the King’s Crown the introduction was through a study of the genre of comics. In this case with the pupils in Year 5 there was huge enthusiasm and obvious surprise when the comics were distributed. The pupils were able to unpick the genre of the comics as a medium for story telling. (See Appendix 10) All of the pupils created a web and built upon this adding all the shared ideas.

Then as part of the problem solving session pupils were able to draw their own cartoon version of the story of how Archimedes solved the problem of the gold in the king’s crown.
The King's crown

King

The goldsmith is caught

Never you have betrayed our king!

Get off me!

Archimedes: AH!

The finds out about the crown

Archimedes in bath

Gold's density is more than metal's so he checked the density.
The fake gold crown

The king going mad because he just found out the BAD news!

The goldsmith scared.

Archimedes relaxing in his bath.

Archimedes weighed the crown and the materials.
The familiarity of the Mr. Men characters was used in the first history mystery following the baseline assessments. All the pupils seemed to remember these figures from sharing the stories before. The pupils said that they knew the books because of their birthdays. This mystery was cited by one identified gifted and talented pupil in Year 6, as her favourite mystery, ‘I liked the Mr. Men one best because of the pictures and it was easy.’

The simplicity of the Mr. Men characters led the pupils into quite complex reasoning. Feedback from one group from Year 5: ‘There are a couple of suspects: Little Miss Bad (she met Mr. Mean,) because she hated Little Miss Sunshine; she may have played a trick on Mr. Sad, it was to be his cake. Or Mr. Lazy because he was tired he might have had it; he was too tired to go out to the cake shop. But, it might not have been Little Miss bad because it doesn’t say she passed by.’

The school plans drawn by the pupils to show how to keep school safe and secure were evidence of their ability to construct a mental map of a situation. This in turn linked with the dilemma presented by terrorism now, and in the past, and prepared the pupils for the task of drawing the Man in Black in the Cellar and building up the picture of the story as it unfolded.

2.3 Cognitive conflict: CACHE Principle 3

The challenge to face problems which could not be solved independently was fundamental to the Intervention Strategy. Each history mystery presented problems to solve with the collaboration and support of peers and / or the teacher. The role of the teacher was to provide ‘scaffolding’, structures and supports at each stage: to groups and if necessary to the whole class. Pupils were encouraged to raise their own questions, if they then appeared to flounder then the action of the teacher in questioning and engaging groups or whole classes in dialogue aimed to move thinking on. In some cases this was to provide a suggestion for a way forward in an investigation; so that more information could be gathered to help the students to come up with solutions to the problem.

There were many examples of this recorded in lesson observations or on tape. One child reflected on this in an interview following Intervention Strategy 2, “When we came up with a suspect we went over to Mrs. B. We asked for the suspect’s card, and then Mrs B. said, ‘Um, excuse me, but no-one’s said about the identification.’ So we all sat down again...then we had to get the card. Um, we were like sorting through and discussing who we thought was the suspect; we kept on changing it. And then in the end we came up with two.”

The working through of cognitive conflict was dependent upon sensitivity on the part of staff to know when to intervene and when to step back, and also on the self management of groups to work together. To encourage this, the groups were usually self selected by the pupils' initiation, on the proviso that there were always two members and a maximum of four. Group members then chose their role: leader, organizer of information, monitor and reporter. These roles were referred to during sessions and in the feedback time the reporter were expected to fulfill their commitment to explain their group’s resolution of the history mystery. Pupils were encouraged to change roles and groups were not necessarily static within sessions, sometimes new groups were created.
as tasks changed. One particularly diligent group explained their strategy when interviewed later:

C Mc: Now, when you had to sort out who had which job: how did you do that?
Child A: Um, well, I was the reporter last time, so B was the reporter this time.
C Mc: Right.
Child A: And it just changed because C was the leader last week, so I was the leader. D was the organizer of the cards, so C was the organizer of the cards and B was the monitor last time so D was the monitor.

2.4 Social Learning: CACHE Principle 4

The act of working together at ease in a non-threatening environment was a key principle in CAcHE. In each of the sessions there was an emphasis upon listening to and valuing each other's ideas and opinions; whole class discussion initially led by the teacher, but developed by individuals and groups, were an obligatory part of the beginning and closing section of each history mystery. Time was set for individual: reading, reflecting and note making, but most of the session time was taken up with collective problem solving. The volume of discussion and the 'busyness' at times had been almost overwhelming from the point of view of monitoring progress, and it was judged necessary just to let the debating and arguing within groups to take its course.

Observation notes following an early intervention session:
- There are good things that have come out of this.
- It was worthwhile; the groups did enjoy it and co-operated very well with each other. I know social learning is only a part of what we’re about, but from that point of view it was successful and I think we can build on this. And I don’t mean to try to justify it just because it was fun.
- There was a lot of purposeful and enjoyable reading.
- A huge amount of speaking and listening in the groups and whole class.
- There is a lot of evidence of deducing, as seen in the feedback time and on the group sheets.
- Very interesting observations from the group monitors e.g.
  Group 1 “I think we worked well.
  There were some sawables. (sic squabbles!)
  We had some good ideas.”
  Group 2 “We worked out the mystery by listening to others ideas.”
  Group 3 “We worked together, gave each other ideas, shared cards and talked a lot.”

In the first session of History Mystery 3: Archimedes and the War of Syracuse the pupils in year 6 had been set the problem of reassembling in order extracts of Plutarch’s writing which explained how the city had been attacked and how the war machines of Archimedes had defended the city.

The second session presented the pupils with the task of designing and making a war machine which could have been used to defend the city of Syracuse. First they unpicked the text pooling ideas to establish that the Greeks used: ropes, hooks, winches, long beams of wood, pulleys, levers, arrows, darts, grappling hooks, (Crane’s beak) and catapults.
The reporters gave a practical demonstration of each model and explained the technique.

**Group 1:** We put rope on to hook to grab the ships.

**Group 2:** We've nearly made a catapult. It fires an object by pulling this string.
(Adds one more piece of masking tape.)
George: explained the working of the pulley.
[Projects object across the room – fantastic!]

**Group 3:** Well this is incomplete… the pulley pulls a massive weight. You let go from this, the weight pushes up the hook. The hook collects the ship.

**Group 4:** This is a catapult with wheels at the bottom. You push the lever down and it fires. [Demonstrates effectively.]

**Group 5:** This is a crane and you have a rope to pull harder; you let go the split pin to make it move, and the catapult works.
[Demonstrates effectively.]

**Group 6:** We aimed to make a catapult, base constructed.
[Jack explained the mechanism in detail.]

In History Mystery number 5: the Mystery of the Empty Grave, a warm up task was the paired solving of a jigsaw. This was a photograph of the ship which was excavated at Sutton Hoo and had been cut into sets of pieces with varying levels of difficulty. Groups carried out an archaeological ‘dig’ of the site, piecing together a copy of the plan of the burial-deposit found in the centre of the ship, and wrote a report. All these activities were carried out in groups of mixed gender and ability in both cohorts.

### 2.5 Metacognition: CACHÉ Principle 5

The pupils’ ability to think-about-thinking; to use language to rationalize and explain their thinking in an act of reflection was best captured in the interviews which were undertaken a different times during the course of the research. Some of the most lucid responses were from pupils who had been observed as working effectively as a group. It was important to probe in questioning, but to avoid guiding the responses. The aim of the interviews was for pupils to explain their thoughts about the tasks and how they had undertaken them. This extract is from a group interview following History mystery 2: The Mystery of Queen Victoria’s Missing Wedding Ring:

<table>
<thead>
<tr>
<th>CMc</th>
<th>Can you try and explain your thinking then Clare? And then you realized that you had to work out what had happened; how did you feel then?</th>
<th>setting scene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clare</td>
<td>That it was going to be difficult; but then it got easier.</td>
<td>challenge</td>
</tr>
<tr>
<td>CMc</td>
<td>What made it easier Clare?</td>
<td></td>
</tr>
<tr>
<td>Clare</td>
<td>Because we were starting to co-operate better. Just as it got along</td>
<td>social learning</td>
</tr>
<tr>
<td>Ben</td>
<td>And we also um got more cards…And I was quite surprised that Lee got it right. (Giggles!)</td>
<td>metacognition – how he felt about the solution of the mystery</td>
</tr>
<tr>
<td>Gill</td>
<td>A bird flying through the window!</td>
<td>remembering</td>
</tr>
<tr>
<td>CMc</td>
<td>Lee got it right quite early on, didn’t he?</td>
<td></td>
</tr>
</tbody>
</table>
All | Yes,
---|---
Gill | And, then he changed his mind because his table did.
| cognitive conflict and social influences

Parts of this interview are continued in Appendix 1. One child trying to explain their thinking said, 'It was like all the ideas were whizzing around.'

One aspect of the research was to interview the identified gifted and talented pupils as a group; in sessions they usually chose to work with other peers. They always appeared to be pleased to have time to share their ideas together and enjoyed each other's company. Three of the identified Year 6 boys worked together in and out of school on computer web cam projects which they explained with enthusiasm.

They were all able to explain how they had tried to solve the mysteries:
- I looked at the facts and discussed possible suspects
- I looked at the facts and asked questions
- I used logic; piecing the clues together. For example when we used the interviews to resolve the Red Christian Mystery
- I found evidence and motive. I asked myself: who, why, when, where?
- I looked at clues and compared ideas
- We told each other our ideas and then chose the most likely one – like in the ring mystery
- I sorted out the suspects then checked their motives e.g. Richard Lane's motive could have been his betting problem.

2.6 Bridging: CACHE Principle 6

Bridging took place both within the practice of the research and across other areas. For example the pupils in year 6 readily created their own history mystery stories related to a pair of missing earrings. This work in English also included oracy, drama and writing.

In Year 5 the pupils chose to restructure the key characters of Jane and Sam as lead roles in a class assembly on their chosen theme of homelessness. The opening scene depicted Jane returning home with a new project in view. Through the wizardry of Uncle John and Google Earth Jane and Sam could visit areas around the world where natural disasters or political decision making had made people homeless. In English lessons in Year 5 pupils wrote police reports related to the Death of Red Christian and diaries from the point of view of key characters in the history Mystery of the Empty Grave. Pupils' the ability to put forward a reasoned argument was observed as groups gave feedback, and also in class discussion of school council propositions and persuasive writing.

In the investigation: Archimedes and the King's crown a gifted pupil explained the significance of the density of liquids in predicting whether the different metals would float or sink in the water.

The final intervention of the History Mystery of ‘The Man in Black’ showed that pupils could apply ideas in a new context: from creating a map of how to keep school safe to then recreating the scene in the cellar before the arrest of Guy Fawkes.

The repeated cycle of introducing the protocols to solve the history mysteries through the stories reinforced the concept of bridging. As a new mystery began the pupils reiterated
the key questions relating to who, when, why, what and where and the steps to be taken: to search and observe; to investigate people and places; to interview and to question and to seek for scientific findings.

2.7 Mastery Learning: CACHE Principle 7

The aim for pupil engagement on a task to last as long as it takes for the pupil to master the task was the ideal. This was difficult to assess accurately for all pupils; the judgement of when to move on to the next part of the problem was inevitably a compromise for some individuals. But, the intention was that progress in lessons proceeded at pace which was compatible with the perceived understanding of the pupils, not to lag, but to give sufficient time for concepts to be assimilated. This was negotiated, with the pupils giving an indication of more time being required to complete a task, and agreed times set. This flexibility meant that some sessions were longer than others, but a feature of the research strategy was to establish regular short breaks between bursts of high activity. This was often an indication of the challenge and demand of concentration which took place during the tasks; there was a need to relax, review and take time between episodes. The flexibility of using blocks of time: a whole morning or an afternoon session in the primary timetable, was a benefit here, rather than slotting in hour or half hour sessions. The blocking of time gave a distinction to the CACHE intervention, from the regular timetable.
Section 3 Conclusion and Next Steps: Dissemination

3.1 The identification of gifted and talented pupils for the purpose of this study had been carried out through: teacher identification using the school’s guidelines; an analysis of the Non Statutory Standard Attainment Tasks for each year group prior to the research and the results of nferNelson Cognitive Abilities Tests as part of the baseline assessment. The introduction of the latter assessment highlighted both pupils who had not been previously identified as well as those who had. The triangulation of these three identification factors appeared to give a fairer picture as it balanced out possible teacher bias and/or anomalies of pupils who may be perceived to have under or over exceeded their prior attainment in the Non Statutory SATs.

A reflection upon the observations during the research also highlights the borderline pupils who had not been identified as gifted and talented, but whose contribution to lessons was highly valued. Another issue which was raised was the notable oral contributions, often from less able writers and lower performers on standard tests, who thrived in the research where an emphasis was put upon oracy: in questioning, discussion and practical group tasks.

3.2 The data collection for this study became vast. It would have been more manageable if the collection had focused only on identified gifted and talented pupils, but inclusion which was central to the study precluded this. Without the collection of evidence from all parties it would have been impossible to try to identify any difference in impact upon the whole range of pupils.

3.3 Impact upon pupils / parents was hard to show in quantitative data. Examples of how pupils coped with strands of the CACHE intervention are provided in section 2. The specific impact for identified gifted and talented pupils is in their samples of work. The enjoyment of the tasks was very evident in the enthusiasm to participate during the sessions. But mere enjoyment, though an essential part of learning cannot be easily measured.

The research took place over roughly nine months and was followed by Statutory and Non Statutory SATs which were externally marked. The results for reading and writing in each cohort were high; well above national expectations.

The exit assessments in comparison with the baseline assessments showed a significant understanding of the protocols of solving a mystery; the understanding of history as an investigative subject rather than the assimilation of information and an understanding of the skills needed to do history. The pupils’ perceptions of history as a subject were changed.

The development of pupils speaking and listening skills was marked and remarked upon by visiting staff.

Parents reflected at parents’ consultations on the positive effect of the intervention in terms of pupils’ engagement and learning.

3.4 Impact upon staff meant that teaching had to be re-assessed in terms of how the intervention was delivered. The intervention’s emphasis upon skills fitted well with the school’s policy and planning. The act of reinforcing the protocols and creating a schema
for pupils to assimilate was new and needs training and support; this would be followed up in the dissemination of the research.

3.5 Dissemination will follow during the next term. The findings will be shared with staff and governors and the implications for changed practice within school will be agreed. The research will also be shared with local primary networks of teachers and support staff involved in teaching both history and Gifted and Talented pupils in the LEA. A report will be presented at the Midlands History Forum and the West Midlands GATE.
References


DfES 0698-2004 G Key stage 3 National Strategy Strengthening teaching and learning in science through using different pedagogies Unit 2 Active questioning


www.becta.org.uk/research/research.cfm?section=1&id=539
www.cie.uce.ac.uk/essential/english/bloom.html
www.gtce.org.uk/research/raisecasestud.asp 13/03/05
www.primaryhistory.org.uk
www.ncl.ac.uk/dental/oralbiol/learning/weaknesses.htm
## Appendix 1
### Extracts from interviews

| CMc | Yes...yes..  
<table>
<thead>
<tr>
<th>S_, I think what I'm trying to ask is: when you had a problem like – we've got to solve this mystery, what were the steps you felt you had to do, in order to do it? I mean you've talked to me about talking. But what did you feel you had to do?</th>
<th>probing</th>
</tr>
</thead>
</table>
| Gill | And we asked Lord Ashley, and on one of the purple sheets we interviewed; Lord Ashley and um he knew it wasn't one of the servants because he trusted them all. Like we were a bit...you know, a bit naughty? | metacognition - understanding of character's opinion  
(deciding to try new idea?) |
<p>| Others/ Clare | It sounded like everyone, well ...loved everyone | |
| Gill | ...So, we thought to begin with, we thought it was Charles the butler and Margaret the cook, because they wanted to get married and it said that they didn't have enough money. | explaining their reasoning |
| Clare | (interrupted) And it might be...because the person who it was, was least suspected because.. | [this hypothesis had been observed by support staff: the girls tried to persuade the boys in the session] |
| Gill | Because if they were least suspected | |
| Clare | They had more of a chance of doing it | |
| Gill | Yes because how would they know that they were going to be caught out | metacognition |
| Clare | Because like the coach man, who was supposed to be outside. So why would anyone then know the coach man did it? | cognitive conflict &amp; metacognition – re thinking the argument |
| Gill | Yes, why would a coach man come in(side)? | |
| Clare | Exactly | |
| Gill | Yes | |
| CMc | Right, you explained that in your feedback at the end didn’t you? Very well. Now, can you think of any activity that you have done before, which helped you, to do this one? | probing |
| Gill | Yes (immediately) | |
| Clare &amp; others | Yes, we did the other one. | developing a schema |
| Gill | The one with Miss... | |
| Clare | little Miss. Sunshine | |
| Gill | Yes, and the missing cake | |
| CMc | Right, so how did? How did doing the Mr. Men mystery first help you with this one? | |</p>
<table>
<thead>
<tr>
<th>Others</th>
<th>Can you...</th>
</tr>
</thead>
<tbody>
<tr>
<td>(All at once!)</td>
<td></td>
</tr>
<tr>
<td>CMc</td>
<td>Just a minute, let’s listen to Ben. Sorry Ben.</td>
</tr>
<tr>
<td>Ben</td>
<td>Putting, putting like in sequence, like order and um</td>
</tr>
<tr>
<td>Gill</td>
<td>Yes</td>
</tr>
<tr>
<td>CMc</td>
<td>Right, can I just stop you a minute? When you say ‘put it in sequence and order’ Can you just dig a bit deeper in your thinking there and explain?</td>
</tr>
<tr>
<td>Ben</td>
<td>Well, um, well it’s important to put all the people in order so then maybe you could get it <em>(solve the problem?)</em> then</td>
</tr>
<tr>
<td>CMc</td>
<td>Right. When you said ‘order’</td>
</tr>
<tr>
<td>Ben</td>
<td>Yes</td>
</tr>
<tr>
<td>CMc</td>
<td>Can you just explain to me? Well. I mean you could order numbers smallest to highest. How? What is the order that you are thinking of? Just, just try and explain to me; it’s quite a hard question.</td>
</tr>
<tr>
<td>Ben</td>
<td>Well, maybe the most suspicious to the least?</td>
</tr>
<tr>
<td>CMc</td>
<td>Right, right and you were doing that weren’t you? ‘Cos you were doing all that talking and you were trying in your heads to do that? What helped you to make the decisions?</td>
</tr>
<tr>
<td>Ben</td>
<td>Talking</td>
</tr>
<tr>
<td>Bill</td>
<td>And (murmurs) make...</td>
</tr>
<tr>
<td>CMc</td>
<td>Bill, speak up.</td>
</tr>
<tr>
<td>Bill</td>
<td>Maybe, because ah maybe they think that maybe like one.. Or three persons think that somebody that they suspect; that suspect will be someone, but one person should think that a different suspect. I think ah..that the one person would maybe give up. So maybe he or she will try and demonstrate because we, because we haven’t got any choice.</td>
</tr>
<tr>
<td>CMc</td>
<td>Right, so partly, it was going with the majority of what you (as a group) thought? So if three people thought it was possibly that, and one person didn’t, you then pursued that line for a bit further? Yes? Now did you interview anybody? Did you ask for any interviews?</td>
</tr>
<tr>
<td>All</td>
<td>Yes</td>
</tr>
<tr>
<td>CMc</td>
<td>Why did you ask for interviews?</td>
</tr>
<tr>
<td>Gill</td>
<td>Because, mnn, because you want to know what, where all the servants was (sic) and what they did. What did they hear any funny noises or did they see a shadow or anything. And so yes about all the cards that we could get to sort it out. <em>(Laughter)</em></td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CMc</td>
<td>Let’s just go on with this. And thinking about your thinking; can you explain how you did your thinking? (pause) Or how you moved solving the problem further on? Go on then Ben, or somebody who’s…go on then Grace.</td>
</tr>
<tr>
<td>Gill</td>
<td>Um ’cos we thought about the last mystery that we did. Because the last mystery would help us a lot um how we um how we would do it</td>
</tr>
<tr>
<td>Gill</td>
<td>Yes so we…it…the first one did help us a bit</td>
</tr>
<tr>
<td>CMc</td>
<td>Right, can I just interrupt you there? Can you remember what we did as a whole class with the Mr. Men mystery; that we didn’t do, with this one?</td>
</tr>
<tr>
<td>Clare</td>
<td>We had pictures on the cards.</td>
</tr>
<tr>
<td>CMc</td>
<td>You had to put it in an order of sequence, that’s right. Can you think of a sort of ‘historical’ word for putting it in an order?</td>
</tr>
<tr>
<td>Ben</td>
<td>Chronicle order?</td>
</tr>
<tr>
<td>CMc</td>
<td>Chronological order, that’s right. Thank you for telling me that, ‘chronicle’ order is lovely! Yes Gill?</td>
</tr>
<tr>
<td>Gill</td>
<td>And because the first one was easy because on each card it says who followed who. <em>(murmur of agreement)</em> And at the end it just totally gave it away who it was because they were carrying the cake. <em>(Laughter)</em></td>
</tr>
<tr>
<td>CMc</td>
<td>Right, right.</td>
</tr>
<tr>
<td>Gill</td>
<td>But, but the second one, it, it was different because you had, you had to think because you didn’t have any cards you just had writing.</td>
</tr>
<tr>
<td>CMc</td>
<td>So which did you prefer doing?</td>
</tr>
<tr>
<td>Gill &amp; Clare</td>
<td>Oh, Queen Victoria (unison)</td>
</tr>
<tr>
<td>CMc</td>
<td>Can you tell me why you thought that was better? Just a second. Let’s listen to Clare first.</td>
</tr>
<tr>
<td>Clare</td>
<td>It was a bit harder</td>
</tr>
<tr>
<td>CMc</td>
<td>So, another word for hard?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Clare</td>
<td>Tricky</td>
</tr>
<tr>
<td>CMc</td>
<td>Another word for tricky?</td>
</tr>
<tr>
<td>Clare</td>
<td>Complicated</td>
</tr>
<tr>
<td>CMc</td>
<td>Complicated, it was more complicated – Challenging? It was more challenging wasn’t it?  leading</td>
</tr>
<tr>
<td>Others</td>
<td>Oh Yes</td>
</tr>
<tr>
<td>CMc</td>
<td>It was more challenging (giggled agreement). But did you still feel that you could solve the problem, did you feel..(yes!? How did you feel? probing</td>
</tr>
<tr>
<td>All</td>
<td>Yes</td>
</tr>
</tbody>
</table>