

# COMPUTING **AT SCHOOL**

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NETWORK OF  
EXCELLENCE

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SCIENCE  
TEACHING

## Lead School Audit Report 2015

### COMPUTING **AT SCHOOL**

Lead School  
2015 - 2016

Funded by:



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## Executive Summary

At the end of November 2015 the Computing At School Network of Excellence (NoE) had 526 schools registered as CAS Lead Schools for Computing, with a further 944 schools registered as CAS Member Schools. There are 576 primary schools and 1013 secondary schools<sup>1</sup> with 266 Lead Primary Schools and 362 lead secondary schools.

Whilst being registered members of the CAS Network of Excellence the CAS Lead Schools receive no grant or other funding from the project and it is always fascinating to hear about the range of activity being undertaken by the CAS Lead Schools as they embed Computing in their own curriculum but also look outward to other colleagues and help them too.

There is a strong connection for the majority CAS Lead Schools between internal development and success and participating in outside activities e.g.

- visiting other schools to share experiences, resources and ideas
- enabling colleagues to visit
- collaborating with other departments on resources and schemes of work
- hosting, participating or attending local CAS hub meetings
- running CPD training for colleagues in the local catchment

In many of the comments received time is short but the benefits of contributing in this way was valuable in:

- enhancing one's own understanding and knowledge of the subject
- picking up new ideas and tips for the pedagogy of computing
- enhancing the status of the subject in the school
- career development and professional recognition for computing teachers in the Lead Schools

A key factor for the success in the CAS lead Schools is having a strong and supportive senior leadership team who have made time in the timetable for computing and have created space for staff to attend and deliver training. Through the new CAS Regional Centres we will continue to champion the Lead Schools and encourage other schools to participate in the NoE but in particular to work with local head teachers and leadership teams to ensure colleagues are being supported this way.

## Headline statistics

- 426, of the 586 Lead Schools on record were required to submit an audit in September 2015 (72.7%)
- 280 were approved CAS Lead Schools for academic year 2015-16 ((65.7%)
- 140 schools of those approved have a CAS Master Teacher on staff (50%)
- 112 schools did not fully complete the audit and have thus been downgraded from a CAS Lead School to a CAS Member School<sup>2</sup> (26.3%)
- 34 schools did not fully complete the audit but have a Master Teacher (23%)

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<sup>1</sup> Some schools are 'all-through' and include both primary and secondary phases

<sup>2</sup> Work is ongoing to determine the reasons for either partial completion or no attempt made to complete the audit

- 20 schools of those not approved have a CAS Master Teacher on staff (13%) and these will be followed up individually to determine the reasons

## Background

Lead Schools are an important component of the Network of Excellence (NoE) CPD programme run by [Computing At School](#) (CAS). When schools join the NoE they are joining the NoE, and thus CAS, as an institution committed to raising the standard of computing teaching in their school. Lead School status is available to any school inc. primary, secondary, middle, academy, free, independent etc.. Some local education centres for example City Learning Centres may also fulfil the role of a Lead School. Lead Schools receive no direct funding for the work they undertake as part of the NoE from the Department for Education.

When a school registers to join the NoE they can self-designate as a **Lead School**. This means their school will, in addition to supporting Computing as a subject in their school, seek to support other schools in their local area as they develop computing provision.

Lead School status provides, among other benefits:

- enhanced public recognition reflecting the teachers' expertise and commitment to Computing and Computer Science in the school curriculum;
- provides career development for staff;
- demonstrates a commitment to the subject for staff (existing and prospective), pupils, parents and governors;
- opportunity for existing staff to apply to become a CAS Master Teacher

Each Lead School must fulfil the following essential criteria:

- To recognise that Computing as a subject is important and it is part of the school development plan
- To develop or have developed a broad and balanced computing curriculum that shows clear, planned progression where cross curricular opportunities are identified
- To support (at least one) other school in the local community through sharing good practise.

In addition, it is hoped that all Lead Schools will play an active role within the CAS community by e.g.

- Publishing classroom resources or contributing to discussions on the CAS Community Website.
- At least one teacher in a Lead school has active CAS Membership e.g. runs a Computing At School hub or offers support by presenting at CAS events, hub meetings or conferences.

## The Lead School Audit

At the end of each academic year the Lead School is required to complete an audit of their activity in order to renew their status for the next academic year. Those schools that pass the audit have their status renewed for the next academic year (2015-2016). For those that do not pass the title is removed but opportunity provided for them to reapply as part of the following year's audit process.

This report summarises the audit of all schools registered as Lead Schools up to the end of February 2015<sup>3</sup>.

For this year the audit was available through the CAS Community Forum thus enabling all school details to be pre-loaded simplifying the completion process for the Lead School contacts. A copy of the seven audit questions can be found in Appendix 1. Each respondent was asked to rate their school (0-5) for questions 1 to 3 and then provide a commentary to explain how they have fulfilled the criteria and a justification of the score awarded. The remaining four questions expected a yes/no response.

The 0-5 grade has the following meanings:

- 0: no response
- 1: you have not started yet, but intend to do so this year
- 2-4: you are somewhere on the journey
- 5: no room for further improvement

Each school was also asked to provide a reference to be used for borderline cases and some sampling of evidence

The scores provided were totalled and a pass score determined by the system. A panel of reviewers reviewed each audit submitted and either:

- Passed the school, based on information provided
- Flagged the school for either (a) discussion with other panel members, or (b) request for more information
- Requested further information from the supplied reference
- Failed the school, based on information provided

NB. Responses to question 7 will be used to follow up later in the year with suggestion(s) of a project the Lead Schools may wish to undertake with each other to further develop both their internal provision but also external collaboration with other schools.

## Audit Summary

### Audit by phase of education

426 of the 586 CS Lead Schools on record were required to submit an audit in September 2015. These covered all phases of school education from early years through to post 16. 59% designated as secondary schools, 32% designated as primary schools, 2% designated as post-16, the remainder are designated as 'not applicable' which is Edubase's way of identifying independent schools or special schools.

*Table 1 Total of audit schools by phase of education*

School Phase	#
16 Plus	9
All Through	7
Middle Deemed Secondary	5
Not applicable	23

<sup>3</sup> Where a school registers as a Lead School midway through a year they will be required to complete an audit at the end of the school year following their registration.

Nursery	1
Primary	135
Secondary	246
<b>Grand Total</b>	<b>426</b>

280 schools were approved for continued Lead School status (65.7%) from the following school phases:

*Table 2 Total of approved schools by phase of education*

<b>Row Labels</b>	<b>#</b>
16 Plus	6
All Through	5
Middle Deemed Secondary	3
Not applicable	14
Nursery	1
Primary	84
Secondary	167
<b>Grand Total</b>	<b>280</b>

146 schools did not complete the audit, or only partially completed the audit. At 34% this is far higher than expected. All schools were given four weeks to complete the audit and regular reminders, three in total, issued at key intervals. In some instances the schools completed only a part of the audit usually omitting to supply at least one reference to support the answer for question 3 “Your school supports other schools (at least one) in your community through sharing your good practise. “ In some cases the commentary supplied to support their answers was insufficient to justify the score they awarded themselves and requests for further information were additionally sent. Some of these partially completed schools are still being followed up.

*Table 3 Total of schools not approved or incomplete audits by phase of education*

<b>School Phase</b>	<b>#</b>
16 Plus	3
All Through	2
Middle Deemed Secondary	2
Not applicable	9
Primary	51
Secondary	79
<b>Grand Total</b>	<b>146</b>

All schools with a CAS Master Teacher on staff are automatically a CAS lead School. These schools are still required to complete an audit but 34 did not do so, or have not done so yet.

## Question Responses

Question 1: Your school recognises that Computing as a subject is important, and this is part of your school development plan.

The aim of the question was to ascertain the importance placed on Computing by senior leadership in the school. At a time when a new subject is being introduced it is believed to be important that the curriculum managers were both aware of the change and of the need to support staff responsible for introducing the change.

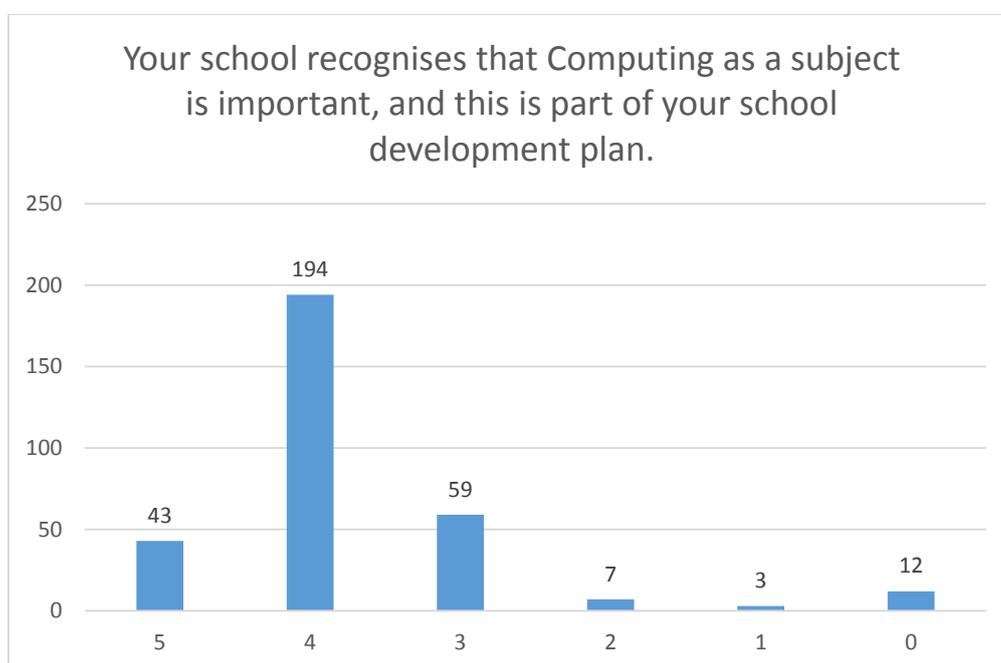


Figure 1 Computing is part of the school development plan

Question 2: Your school has developed appropriate schemes of work for all years that reflect and support the new National Curriculum

This question invited respondents to expand on the school development plan and evidence that schemes of work are now in place for all years or the new National Curriculum:

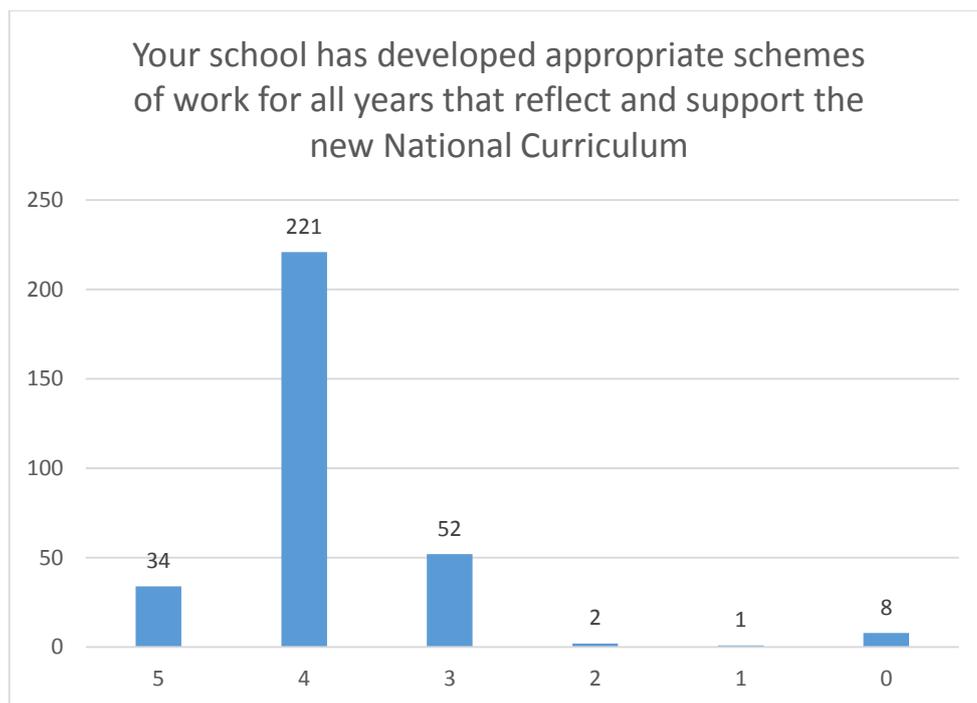


Figure 2 All years scheme of work in place

### Question 3: Your school supports other schools (at least one) in your community through sharing your good practise.

One of the main aims of the Lead School programme is for the school to support at least one other in their local community. What support is provided will, of course, be different from place to place but it is hoped that department staff might make themselves available to meet staff from another school, say, once a term formally or informally, to share notes, lesson ideas etc.. As the Lead School programme matures this will become a more important aspect of Lead School status and was regarded as a key determinant in not approving many schools this year. From comments received it is clear that for any schools the emphasis is still on building their own provision and there is little time to look outwards and support others but over claim to provide some provision. Nearly 10% are doing as much as they can and can do little more, while 49% indicating they are doing a significant amount.

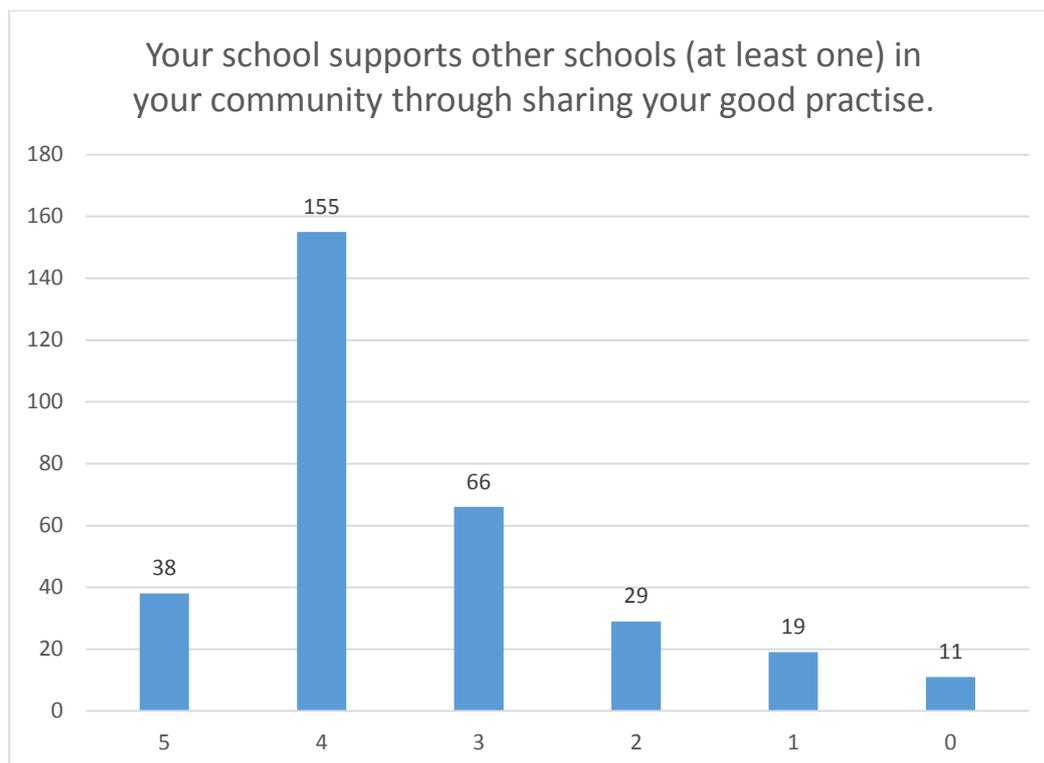


Figure 3 Support for other schools in the area

For many of these schools this was evidenced through work with their feeder primary schools, contributing through local networking meetings and for some running their own CPD courses. The evidence provided was through a free form comment and thus determined by what the respondent chose to include, or omit or forget to include but from a random sample of 100 audits the following were mentioned:

- 26.5% have some level of activity with primary schools including running CPD courses, advising on curriculum, visiting the school, co-teaching and transition projects for the pupils
- 23.9% mentioned they were active with one or more CAS hubs
- 59% providing some form of CPD to other schools and teachers inc. course, visits, sharing of resources etc.
- 7% presenting at local or national conferences/workshops
- 6% working with their own parent cohorts either by drawing on them as a resource or helping them understand the new curriculum
- 40% mentioned supporting their internal provision by running clubs and/or entering pupils for a variety of competitions
- 5% developing links with local industry

**APPENDIX 1 – Lead School Audit 2015 questions**

1. Your school recognises that Computing as a subject is important, and this is part of your school development plan.
2. Your school has developed appropriate schemes of work for all years that reflect and support the new National Curriculum
3. Your school supports other schools (at least one) in your community through sharing your good practise.
4. Please comment on the above as fully as you can to support your renewed status as a CAS Lead School
5. Do your staff attend and support a local CAS Hub?
6. Do your staff actively support CAS activity e.g. contributing to forum discussions, share resources, presenting at a local hub meeting or CAS conference, running a local hub?
7. Would your school be interested in collaborating with another local lead school on a project?

## **APPENDIX 2 – Sample of comment responses expanding on Lead School provision**

### **Eggar's School, Hampshire**

- Close links to numerous primary schools through primary computing development sessions with teachers (at our school and visiting primaries) (termly)
- Numerous Primary coding/computing sessions run with primary year 4/5/6 students. We have a delegated Primary Computing Liaison Teacher who focusses on Primary Computer Science development sessions.
- Curriculum development sessions with feeder primaries and technical support to set up hardware sessions.
- Curriculum leader is active on CAS hub contributing ideas and beginning discussion groups.
- Digital Leadership initiative is now embedded across the school (November DL Conference champions and the IBM BrightSparkz Champions 2015)
- Curriculum Leader has now completed the BCS Computer Science Certification (Chris Legg) and is soon to apply to become a master teacher
- Attendance at the Portsmouth Hub Meetings last year
- Increasing size of the Computer Science option groups (now increased by 10 students from last year)
- Supported the training of SCITT Computer Science teachers for 2014-15 and following years
- Ran interview lessons for applicants to SCITT and learn alliance computer science teaching ITT.
- Code club ran last year and is now due to embed across the school in 2015-16 with a number of external programming experts supporting pupils.
- Involved in the STEM Hampshire group looking into developing Computing Science Hardware inclusion in the curriculum
- Involved in the Faraday computer science challenge this year using the new microbit
- Curriculum Leader has just completed an MA in Computer Science focussed Education from the University of Chichester
- One of our female Computing pupils has represented Hampshire on the national digital youth council for the past year.
- Computer Science focussed independent learning day ran in 2014-15 which looked into how computer science made space travel possible.
- Supporting secondary partner schools with Controlled assessment task “ advice, guidance and collaboration on unit completion
- Terming meetings with nearby partner Computer Science secondary schools to discuss the computing curriculum and swap ideas.
- The school is currently implementing a school wide BYOD scheme which we intend to incorporate in the Computing curriculum for all years.

### **Alder Grange Community and Technology School, Rossendale**

We are a BCS approved school for interviewing for Initial Trainee Teachers of Computing for the Bursary and have hosted and conducted interviews for the Bursaries , feeding back to BCS our recommendations.

We have a strong partnership with Edge Hill to support the training of Initial Teachers in Computing and within the department have a successful training record preparing initial teachers in the subject for the future.

Our CAS Master teacher Phil Hackett, has hosted, devised and led a number of Computing training sessions offering these to schools in the local community and to teachers within our own school, promoting a love of the subject and advocating new and innovative ways to teach Computing.

We have attended training for distributing and using the BBC Micro:bit in school and are incorporating aspects of this within the scheme of work for Year 7.

We are planning to start running our own hub (Rossendale, Bury & Rochdale areas) to increase attendance at provided CPD sessions as well as build links to facilitate on-site training at other schools. The hub will also be a way to facilitate networking between schools as well as the sharing of ideas and resources.

A Computing / Coding club has been in place throughout the entire year with pupils given the opportunity to enter national coding competitions provided by establishments such as Cambridge University. Opportunities to participate in Computing events outside of school are actively encouraged and promoted- events such as Hack Manchester in October is to be attended by a group of GCSE Computing pupils from our School. We have provided opportunities for students to attend talks from University representatives promoting /clarifying the correct courses for future areas of interest in Computing.

We have run a Code Club for girls at KS3 and plan to extend this to other years this year.

As a school we actively promote the Hour of Code encouraging all pupils, staff and parents to participate.

We run Computing competitions to engage whole school participation in Computing activities.

Our CAS Master Teacher is delivering a session at The University of Manchester Regional Conference this October.

As a school we utilise and contribute to the CAS resources website, sharing best practice and use of appropriate resources.

### **Wyvil Primary School and Centre for Children With Speech and Language Impairment, London**

I have continued hosting an annual Computer Science day, held on the last Tuesday of January. Wyvil hosts the event for eight primary schools who make up the Oval Cluster. Each school sends 8 AGT pupils. The event consists of four workshops that promote computer science. Each year I look to provide taster sessions for aspects of computing that will inspire the participating schools. This year the sessions included cup stacking algorithms, motion activated Scratch games, Kodu and Lego Mindstorms.

This year James Marsh successfully completed the five day CAS Master Level 1 training. He has become an important member of the school ICT team and is able to lead and support on the delivery of computing and ICT across the school.

Our Computing curriculum continues to evolve as the pupils abilities in computing improves. I reflect on strengths and weaknesses and make alterations that reflect this. There is a noticeable improvement in the pupil's computational literacy skills over the last two years as they become familiar with the concepts of coding. I ran a Code Club in Wyvil and our Federation partner Vauxhall for a second year. I felt by the end of the second year that the Computing curriculum was

successfully delivering much of what the Code Club was offering. I have decided this year to change this to a Digital Leaders Club, which will offer a variety of projects that will develop new skills. This will include programming Arduino kits, 3D Printing and app development.

I have delivered two professional development events for the Oval cluster, one as part of the NQT programme and another for the Schools direct trainees. Both sessions explored the concepts of Computing and computational thinking and how these are delivered in the curriculum.

I attended a fantastic four day IBM Summer School organised by London CLC and IBM. As a result of this event we now have an IBM partner who will be coming into to support the Digital Leaders Club. The plan is to use the Arduino kits to explore the concept of 'The Internet of Things'.

The Wyvern federation now includes Aurora House, a centre for Children with Autism. I have been working at the centre for a half a day a week over the last year. I have been working with the children to support their development of ICT and coding skills. The challenge was finding the right applications that would enable them to develop their coding skills. It is very much a bespoke approach, depending on the needs of each individual child. Using apps such as The Foo™s, Lightbot and Scratch Junior I have been successful in introducing concepts such as cause and effect, sequencing code and debugging simple errors. I look forward to continuing this work and developing their coding skills as well as exploring way to use ICT to develop their learning more generally.

With James Marsh, our CAS Master Teacher, I have planned a two day course, Computational Thinking in the Primary Phase that was to run at the Lambeth Teaching Schools Alliance. Despite extensive promotion, including the CAS website, the course was cancelled due to lack of uptake. We plan to run the course again in spring next year.

We have continued our partnership with the IET and Bechtel, participating in the First Lego League Tournament in December last year. This year will be our fifth time participating in the event and we have arranged for a volunteer from Bechtel to work with the team on preparing for the event at the end of November.

### **Dereham Neatherd High School, Norfolk**

1. Supporting colleagues (11-18)
  - a) This year we have provided support for several other secondary schools with and without Sixth Forms. This has been done by visiting colleagues in their own school; hosting network events and electronically. For example: We continue to work with Wymondham High School to help with curriculum development at KS3/4. This includes teaching, learning and coursework moderation. We have supported other schools in a similar way.
  - b) Hosting CPD/network meetings focused on KS3/4/5 Computing. We have hosted initial meetings with colleagues from several other school embarking on delivering Computing within the curriculum with a focus on all key stages. We continue to liaise with these schools electronically.
2. Supporting colleagues (primary). We have a regular local primary school Computing network where we meet to discuss Computing and share good practice. We also identify support needs and try to provide this.
3. Primary School events. An example of a primary event we ran this year was an 8 hour coding course teaching principles of programming using Small Basic. This was attended by 16 students from 5 primary schools.

4. Computing events for students. We have taken students to several events such as the Oxford University Robotics competition, Norfolk Scratch off and UEA Computer Science information days.

#### **Sunbury Manor School, Sunbury**

- Running the CAS Sunbury Hub and hosting events for Primary and Secondary colleagues.
- CAS Master teacher - Beverly Clarke - has contributed articles to two editions of SwitchedOn magazine over the past year
- Supporting wider colleagues in the Czech republic and The Netherlands, advising on how we have implemented the National curriculum
- Interviewing potential candidates for the CAS\BCS scholarship
- Running a workshop at the BCS for CAS\BCS Scholars
- Distributing resources such as the primary and secondary teachers toolkits
- Attending the Surrey IT\Computing subject leaders quarterly meetings - distributing resources and talking about CAS
- CAS Master teacher - Beverly Clarke - has published her resources on the CAS website for usage by other teachers
- All key stage 3 pupils follow the Computing National curriculum and we also have students taking GCSE Computing.
- Sharing resources as and when with the local community