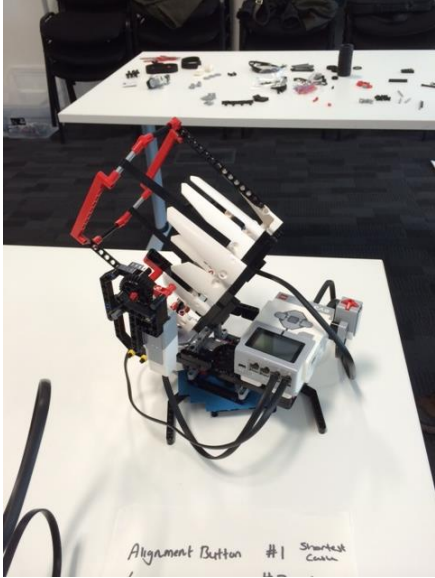# Salop Teaching School Alliance
# CPD Case Study Outline

| | |
|---|---|
| Project Title | CPD Training in the use of Lego Mindstorms to promote Computer Science |
| School/Organisation | Idsall School |
| Date Project taking place | Summer Term 2014 |
| Aim of Project | We want to increase the engagement in STEM activities and computer science within the school. In order to do this we are purchasing Lego Mindstorms education kits to use both within lessons and during extra-curricular activities.<br>Once the kits are purchased we need to carry out in house training to ensure a selection of cross-curricular teachers are trained in using this resource. |
| Project Details | Twilight sessions were organised to facilitate the training of teachers in both the ICT departments and the science departments. Staff members from these departments who received the training were also involved with the running of the school STEM club.<br><br>Session 1: (Run as 2 twilights)<br><br>Staff were introduced to the construction side of using Lego Mindstorms. Discussions were held about how this relates to different areas of the curriculum. It was noted that building different models to solve certain problems provided many different scenarios for the students to develop their programming skills.<br><br>Example: A model robotic telescope could be built from the kit which could then be used in Physics lessons to demonstrate scientific principles, or used with the GCSE astronomy club, or used in a computer science lesson to give a real world problem that the students had to solve by writing the correct program.<br><br>Session 2:<br><br>The second session (Run as 2 twilights)<br><br>Staff were introduced to the Lego Mindstorms software. All staff had the opportunity to write their own programs during the training session. Again the emphasis was put on how the programs could be used in a variety of ways for the students. The basic ideas of programming could be introduced and pupils can see an instant result if they get it correct as they would see their robot move.<br><br>More detailed scenarios could be presented to the students which would then ensure they had to think logically and use more advanced programming blocks (logic and maths blocks). |

| | |
|---|---|
| Sustainability Aims | Now we have more staff trained in using Lego Mindstorms it gives us the flexibility to deliver an after school club and also use this equipment across several departments to engage pupils in the classroom. |
| Who was involved? | Jennie Reeve<br><br>Stuart Kettle<br><br>David Reeve<br><br>Nigel Scully |
| Outcomes | The staff involved found the training useful and could see many applications for the equipment in their lessons. All staff members were successful in using the programming software and since the training sessions we have created some scenarios that allow pupils to problem solve using the Lego Mindstorms. |
| Project Evaluation/Impact Outcome | In total 4 members of staff were trained in the initial sessions. These members of staff have since disseminated their knowledge across the science and ICT departments.<br><br>All members of staff involved could see how this equipment would increase the engagement of pupils in both science and computer science lessons.<br><br>Staff members have already started to develop resources linked to their own curriculum that use Lego Mindstorms as the catalyst to bring together computer science programming with theoretical science.<br><br>For the following academic year this equipment along with the members of staff who have received the training will offer an after school activity to encourage year 9 pupils to take computer science as an option for year 10.<br><br>Photograph of the model robotic telescope we designed as part of our training sessions:<br><br> |

*Please note your case study will be placed on the Teaching School website therefore if any photographs are supplied we will assume permission has been obtained by the person being photographed or parents/carers.*

17/07/2017