

## EXTENDED SCHOOLS PARTNERSHIP

### Case Study: Learning maths through sport

#### *What is this case study about?*

It looks at an Olympic SATS Maths Booster / Sports programme for Year 6 pupils from schools in East, Central and South Bristol which was held in the first week of the Easter Holidays 2009.

#### *What were we trying to achieve?*

We built on a programme run by the African Caribbean & Caribbean Heritage Attainment Project (ACHAP) and the School Sports Partnership (SSP) which was piloted at Easter 2008.

During the programme the 24 youngsters who took part used sports such as cricket, football and volleyball linked with booster sessions in Maths, English and Science, to help them gain better results in their SATS.

It was organised by Shirelle Gayle (Primary School Co-ordinator for ACHAP) and Heather Beach (SSP Development Manager). The sessions were spread over four days and were held at The City Academy, St. George, where both organisers are based. The pupils came from schools in East Bristol.

The pilot project generated much interest, and Heather Beach believed it could be developed and used as a tool to support SATS revision courses in primary schools across Bristol, and help pupils raise their attainment levels.



## *Who was involved?*

Funding for the 2009 Olympics SATS Maths Booster/Sports Programme came from Bristol City Council's Extended Schools Partnership and Services team. The programme ran from April 6-9 inclusive.

Heather Beach Sports Partnership Manager and Jan Pritchard CYPS Networked Learning Adviser acted as the strategic leads, worked with Extended Schools Partnership Managers in three areas of the city: Rachel Rodgers (East Central 3); Tony Billingham (East Central 2) and Mike Smith (South 3).

They formed teams at three venues across the city to run the programme.

**Bristol Brunel Academy** - Lucy Cowgill (School Sports Co-ordinator); Louise Elleker, PE teacher; Mandy Thorne, a maths teacher who is manager at Bristol City Football Club's Study Centre which is part of a national network of sporting clubs called Playing for Success, and Jonathon Pearce, a mentor, (Playing for Success)

Pupils attended from two of the academy's feeder schools, Hillfields Primary and Summerhill Junior, attended.

**Brislington Enterprise College** - Nicola Lambert, School Sports Co-ordinator; Amy Saints, sports coach and Russell Tanner, a maths teacher, who is deputy manager at Bristol City FC's Study centre and Katherine Small, a primary school teacher.

Pupils from West Town Lane Primary, Broomhill Junior and Hillcrest schools attended.

**City Academy** - Mark Saunders (School Sports Co-ordinator); James Mooney (Sports teacher); Ian Worley, Katarzyna Klocek and Agata Kujawka (maths teachers).

Children from Barton Hill, Hannah More, May Park, St. Nicholas of Tolentine and Whitehall Primary Schools took part.

Sarah Claridge, a yoga teacher, took sessions at all three venues, spending a morning at each.

## *What did we do?*

The programme at Bristol Brunel Academy was typical of the three venues.

The morning started with snacks for children who did not have breakfast followed by an introductory chat.

A maths activity which had been split up into two 45-minute sessions called Bolt Lightning, involved a series of questions centred around sprinters Usain Bolt and Shelley Ann Fraser, the men's' and women's gold medallists in the 100 metres at the Beijing Olympics 2008.

The pupils had to work out various timings and speeds of Bolt and Fraser and other competitors in the race from basic information which they had been given.

They also worked in groups of three where one pupil would be the athlete, another the starter and the other at the finish line with the stop watch to work out their own speeds and timings in the 100 metres and compare them with those of Bolt and Fraser.

The Bolt Lightning sessions were broken up by a brain gym and followed by speed stacking, yoga or games.

Brislington Enterprise College was the only venue to run an all-girl programme which included trampolining and cheer-leading.

At the end of the week each venue held a celebration ceremony when all the students were given a special mug, a calculator and a maths booster book.



**Mandy Thorpe** said:

“We were giving the children an enjoyable maths experience where they could go away feeling pleased with themselves and more confident in their maths skills. This project was consolidating on what they already knew with the aim of tipping them from Level 3 into Level 4 for their maths SATS.

“Not only were they learning through doing but also finding out that maths is fun. After the shot-putting exercise they had to work out various distances and timings in metric.

“Throughout the week there was an emphasis on team work. The youngsters were also mixing with children from other schools who will also be going to secondary school in September.

“It was a very active week with lots of exercise, quizzes and maths to keep the children motivated”.



**Russell Tanner** said: “The challenge at BEC was thoroughly enjoyable. I felt that it was well organised with a busy mixture of activities which brought a bit of learning to life as it were.

“The level of motivation and enjoyment was reflected by the excellent attendance; 17 children and no drop outs helped by a healthy but not over-weighted staffing ratio. The all-girl group helped the less naturally engaged girls in terms of PE be fully involved and grow in confidence as they were not encouraged by the group rather than out competed and intimidated as they may have been in a mixed group. I think this goes for the maths as well and could be a model to follow in terms of setting groups for a lot of subjects in secondary schools.

“In terms of the maths, pupils certainly became more confident with averages, conversion between units of measurement and working with time.

**Nicola Lambert** said:

“ We used sport to facilitate their maths learning. With trampolining and cheerleading they were working out things like various angles and speeds. It’s an alternative way of learning. This will also get the children into a mindset that the 2012 Olympics will be held in this country.

“Each session was designed to give the children self-confidence to go into the SATS exams understanding the maths they will have to do.

“They were also getting a feel of what a secondary school is like.

“The impact this programme has will be measured in their SATS results. That’s the truest way of finding out”.

**Katherine Small** (*Primary schoolteacher*): “I felt the sessions went brilliantly. The idea of mixing sport and maths works really well. I was surprised how different it is to work in just a girl environment. I normally work with mixed classes. It was calm and peaceful. The children listened extremely well. Behaviour was spot on and co-operation between the girls was wonderful.

“A couple of girls on the first day gave us the impression the impression that they were not confident/keen on physical activity but by the end they were joining in confidently and even excelling in the sporting activity”.

**Rachel Rodgers** (*Extended Schools Partnership Manager - Bristol East Central 3*) said: “Last year the primary schools in the EC3 area had one of the lowest attainment rates in Key Stage 2 at Maths. Only 50 per cent of the children were at Level Four. This was lower than in any of the other localities in the city and way below the national figure.

“This is one of the most depressed wards in the country with an average of 50-60% per cent of the children on free school meals.

“The schools in this area have a high transient population with children moving in and out. It means that the schools have challenging tasks to deal with.

“With this booster programme we are hoping to raise the children’s attainment level so that they will be in a position to take on maths at secondary school level. But we need to be realistic about what we can achieve in the time - four mornings.

“During the week they have been concentrating on basic number skills.

## What was the experience like for the parents/carers?

"She's really enjoyed this week. It's given her some structure to the holiday with lots of focus on physical activity as well as the maths. She is very confident with sport and also looking forward to her SATS now". *Parent/Mother.*

"Eleanor was not at all keen to come on Monday and I did have to drag her to a certain extent. Once she was here she loved it – all the maths, games and especially the yoga.

She came home buzzing, confident - "I totally get averages"- and energetic. Thanks so much; exactly what she needed. *Parent/Mother.*

"Giving the higher achievers value and the ethos of it's ok to be bright, has been of great value for the girls' further schooling". *Parent/Dad*

"My daughter has made good improvement and her confidence has been boosted. Let's look forward for next year. I would like to thank all the staff involved. See you next year!"  
*Parent/Dad.*

## What difference did it make?

### Some comments from pupils who attended the booster programme.

**Sascha** (aged 11): "It was really fun and I've learnt a lot. We were not just covering stuff we had already done but we were learning new things and different ways to work out things. In a classroom you are sat at tables but here we do sports, run around and get exercise. If this wasn't happening I'd just be sitting at home doing nothing".

**Samantha** (aged 11): "I liked the way we did maths through sport. I think it's a great way of getting people ready for their SATS. I had forgotten how to do averages but this helped me. I think it's a great way of learning.

"I'm glad this has happened otherwise I'd be at home sat at my computer or playing on my trampoline. I will tell other people that this will help them in their SATS. It's great fun and everyone enjoyed it".

**Toni Marie** (aged 11): "I thought it was fun. In the classroom I find maths boring. I've learnt a lot about working out distances. I didn't know how to find averages but now I do".

**Mariam** (aged 11): "It was quite helpful for me. We have been taught new ways of working out things like averages. It will definitely help me in my SATS."

**Hattie** (aged 11): "There were more people to help us than in school. In the classroom there is just one teacher and they can't help everybody at once. This week has made me more confident especially in measurements. I am also better at averages. Linking maths to PE and the Olympics made it good fun. I have also made more friends"

**Rosalind**, (aged 11): "I liked this week because the maths lessons were linked to PE. Everything we have done was a fun activity. I have been doing the long jump and it was linked to distance measuring. I have also learnt more about conversion.

**Jess:** (aged 11): "I think it is going to help me in the SATS. There were four teachers and 20 of us. The teachers were always wandering around helping us which made everything more friendly. We didn't do anything in a classroom. We did everything with worksheets in the sports hall. It was a good experience to be in a big school. I have also learnt that working together can be fun".

**Haleemah** (aged 10): "It will be a week I'll never forget. Doing PE and learning fractions at the same time was a fun way of learning"

**Aleesha** (aged 11): "I found doing fractions hard but the sport has helped me".

**Callum** (aged 11): "I am not good at working in teams but this has proved I can do it. I really recommend this way of learning. Usually at school we are only learning with books but here we were having fun and this helps me to remember the maths. Maths in school can get boring but I've learnt quicker here."

**Casie:** "I am better at maths and more confident with working out averages. I have also got better at trampolining and can do yoga".

**Sophie:** "I feel more comfortable about maths and I have made new friends".

**Gina:** "I am better at understanding differences and basketball".

**Connie:** "I'm better at basketball and averages and using calculators".

**Erin:** "I'm better at yoga, trampolining, cheerleading, running, doing averages, dividing and multiplying, adding and subtracting".

**Erica, Yasmin and Nikki** all wrote that they "understood averages better now".

Also at the City Academy the African Caribbean & Caribbean Heritage Attainment Project ran its SATS Booster programme. This combined English, Maths and Science sessions with sport and ran for whole days with classroom based revision in the mornings and sport activities in the afternoon.

Pupils from Barton Hill, May Park, Hannah More, Easton, St. Nicholas of Tolentine, Whitehall, Bannerman Road and Millpond Primary schools took part.



**Shirelle Gayle**, (*Primary School Co-ordinator for the African Caribbean & Caribbean Heritage Attainment project*) said: “This programme is a brilliant opportunity for all children to be engaged in positive learning in a fun and enjoyable way. It is a creative learning process and is a good opportunity for the children to reflect on how maths, English and science are all applicable to everyday life”.

**Cherice** (*aged 11*): “Sport is a good way to help people with their learning. The teachers were very helpful. I don’t normally like maths but here it was much more fun”

***Who to contact for more information on this case study***

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