

# Physical activity at Forest School

Research funded by the Forestry Commission and the Central Scotland Forest Trust.  
Research carried out by Rebecca Lovell, University of Edinburgh.



## Background

Although it is recommended that for the maintenance and promotion of good health children should accumulate at least sixty minutes of moderate and vigorous physical activity (MVPA) every day (Chief Medical Officer 2004; Scottish Executive 2003), significant percentages of children are not sufficiently active to meet this recommendation. The most recent survey of children's health behaviours found that amongst 11 year old Scottish children just 25% of the girls and 40% of the boys met the recommended one hour (Currie, et al. 2008). Amongst 15 years olds even fewer were sufficiently active; 9% of the girls and 21% of the boys. These findings are cause for concern as low levels of

physical activity are linked to health problems such as overweight and obesity, cardiovascular disease, type 2 diabetes and to certain cancers. Encouraging children's greater participation in physical activity is, therefore, a key approach to the improvement of public health.

Children spend significant amounts of their time at school yet have little real opportunity to be physically active there; this is likely to have a considerable impact on their overall levels of physical activity (Waring, et al. 2007). It is, therefore, important to focus effort and attention on increasing children's opportunities to be physically active during their school day.



# Physical activity at Forest School



## Forest School

This research investigated the value of the outdoor learning programme 'Forest School' as a source of school time physical activity. The Forest School approach, which has been used in the UK since the mid 1990s, and is supported by the Forestry Commission through the Forest Education Initiative (FEI), can be distinguished from other forms of outdoor learning by the following factors;

- it takes place in woodlands or forests and the Forest School site will typically and ideally be close to the participants' school;
- the emphasis is on education *in* the outdoors rather than specifically education *about* the outdoors, the participants also take part in a range of non-academic activities including active games, art projects and building dens;
- it is a sustained experience, participants generally attend once a week or fortnight (for a whole or half day) for at least 12 sessions, and some attend throughout the school year.

## The methods

The research was conducted in two phases.

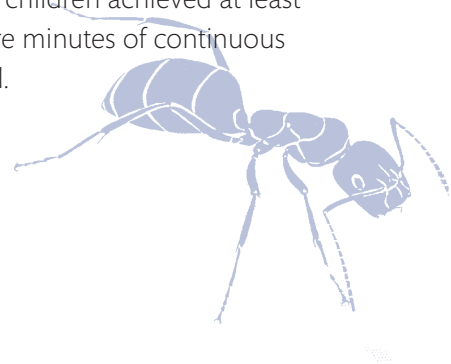
The first phase investigated the children's rates of physical activity during Forest School sessions; the total amount of physical activity, time spent at different intensities of activity and the number of continuous bouts of activity were measured using accelerometers. These results were compared to measurements of activity during typical school days (days with and without timetabled physical activity – 'active' and 'inactive' days).

During the second phase the children were interviewed in pairs, the aim was to understand their perceptions and experiences of the physical activity both at Forest School and in other contexts.

One group of children (aged 9-11) from a school in the central belt of Scotland took part in the research, 26 in the first phase and 24 in the second.

## The results

- The children were found to be significantly more active during Forest School than on the typical school days; the levels of activity during Forest School were 2.2 times greater than those on the active school days and 2.7 greater than on the inactive school days (see figure one).
- The children, on average, exceeded the daily recommended one hour of moderate and vigorous physical activity (MVPA) on the Forest School days (89.4 minutes). On the typical school days the children, on average, did not meet the recommendation (active school days 29.1 minutes, inactive school days 20.5 minutes).
- The children engaged in a higher number of bouts of continuous MVPA on the Forest School days in comparison to the typical school days (see figure two). Two thirds of the children achieved at least one bout of 20 or more minutes of continuous MVPA at Forest School.



# Physical activity at Forest School

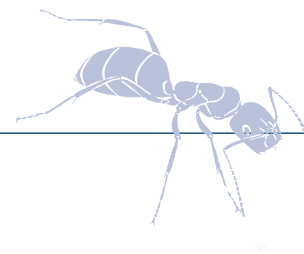
- The physical activity during specific activities on both Forest School days and typical school days (the walks to the Forest School site, an active game played at Forest School, and the PE lesson and break times of the typical school day) were compared, and again it was shown that Forest School resulted in greater amounts of activity and at a greater intensity.
- In studies of children's physical activity girls are consistently shown to be less active than boys; however there was no significant difference in the amount of activity during Forest School between the boys and the girls. Significant differences were found on the typical school days.
- All the children greatly appreciated the opportunity to take part in Forest School; the physical activity, both the types and the amounts, was a significant factor in their enjoyment. The children thought that while at Forest School they had the opportunity to take part in more physical activity than in the typical school setting and that the activity was, in general, more enjoyable.
- The children enjoyed active games, building the dens and just being able to 'run about'; they were not so keen on the walks to and from the site – an aspect of Forest School which they found a bit boring.
- The children also appreciated the opportunity to use their local green space, something which few reported having had much prior experience of. The children reported feeling safer and happier in the forest during Forest School than at other times.
- Certain barriers to physical activity were not relevant at Forest School; in particular 'bad' weather and the threat of getting dirty, which the children reported prevented them from playing and being active in the outdoors at other times, were actually viewed as positive aspects of Forest School.

## The conclusions

This research indicates that Forest School could contribute to the public health agenda as the physical activity was of sufficient duration and intensity to be of benefit to the participants' health and wellbeing. Forest School may also represent a relatively novel way of introducing greater amounts of physical activity into the school day; the Forest School learning experiences are inherently active, this contrasts with the more traditional approach of discrete periods of learning and physical activity during the typical school day. This research has also highlighted the potential value of Forest School as an approach to reducing the inequality in levels of physical activity between boys and girls. Finally Forest School provided positive experiences, for both the boys and the girls, of physical activity in their local green spaces, places which were otherwise feared and little used. It is possible that these positive experiences in childhood may track through to adulthood and promote greater use of forests and woodlands as a context for physical activity (Ward Thompson, et al. 2008).



# Physical activity at Forest School



## Figures

Figure one: Average levels of activity on the normal, the PE and the Forest School days.

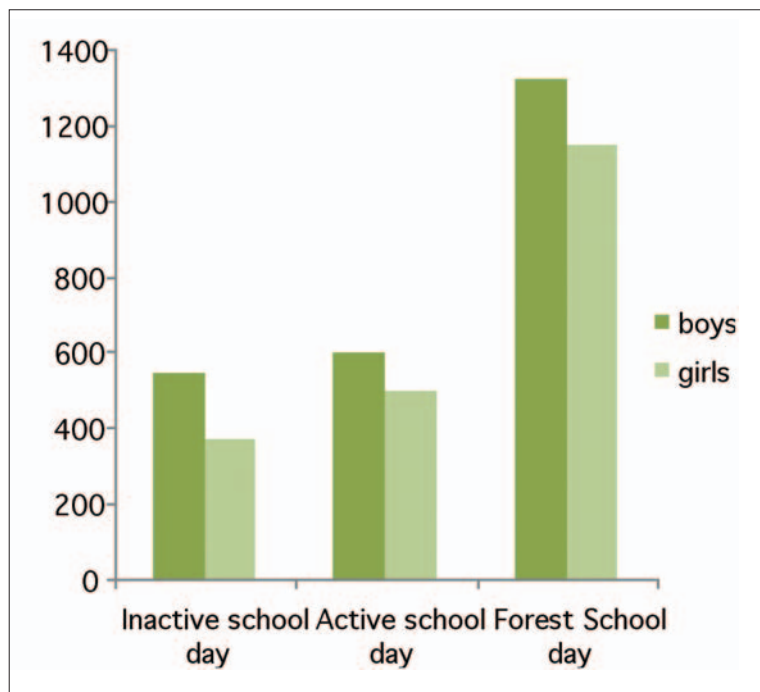
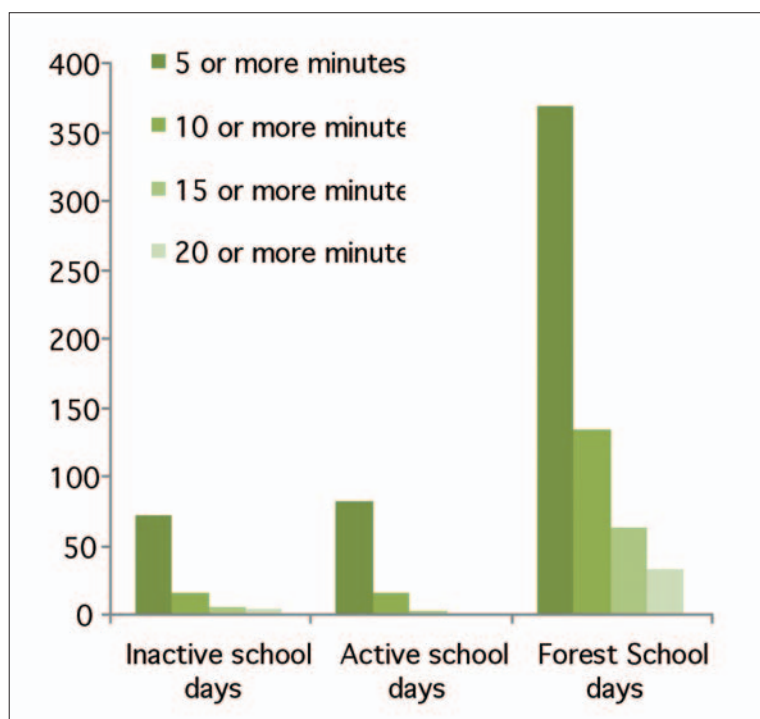


Figure two: Total number of bouts of sustained moderate and vigorous physical activity on the normal, the PE and the Forest School days.



## References

**Chief Medical Officer** 2004 'At Least Five a Week', London: Department of Health.

**Currie, C., Gabhainn, S. N., Godeau, E., Roberts, C., Smith, R., Currie, D., Pickett, W., Richter, M., Morgan, A. and Barnekow, V.** (eds) 2008 *Inequalities in young people's health: HBSC international report from the 2005/2006 survey*, Copenhagen: WHO Regional Office for Europe.

**Scottish Executive** 2003 'Let's Make Scotland More Active', Edinburgh

**Ward Thompson, C., Aspinall, P. and Montarzino, A.** 2008 'The Childhood Factor: Adult Visits to Green Places and the Significance of Childhood Experience', *Environment and Behaviour* 40(1): 111-143.

**Waring, M., Warburton, P. and Coy, M.** 2007 'Observation of children's physical activity levels in primary school: is the school an ideal setting for meeting government activity targets?', *European Physical Education Review* 13(1): 25-40.

## Contact

National Health Advisor

Tel: 0131 3146187

Email: kevin.lafferty@forestry.gsi.gov.uk

Central Scotland Health Advisor

Tel: 01698 368555

Email: hugh.mcnish@forestry.gsi.gov.uk

Highland Health Advisor

Tel: 01349 862144

Email: angus.mcwilliam@forestry.gsi.gov.uk

[www.forestry.gov.uk/centralscotland](http://www.forestry.gov.uk/centralscotland)