

Young geographers

'Our present-day knowledge of the child's mind is comparable to a fifteenth-century map of the world – a mixture of truth and error ... vast areas remain to be explored'

Arnold Gesell,
cited in Fisher, 1995.

Over the past few decades there has been a growing interest in primary geography research and the misconceptions which many children hold about the world around them. The way in which children learn about places is complex and researchers are only slowly piecing together the story. Part of the problem is that there is no entirely logical or inevitable sequence of events. Learning is for many people a surprisingly idiosyncratic process in which ideas are acquired in an apparently random manner. Most people do not become systematic thinkers until they reach adolescence or even later.

It is also remarkably difficult to discover what is actually going on inside a child's head. We were all young once, but it is impossible to recapture the sense of awe and wonder which children experience on doing something for the first time. Adults can often only observe and deduce what seems to be happening from the outside.

Despite these complexities there is, however, one clear message: the skills and competencies of young children appear to have been consistently underestimated. In part this is due to an uncritical acceptance of Piaget's theories. Few people nowadays would contest Piaget's central thesis that children pass through developmental stages as they grow older. However, the age at which this happens, and children's ability to operate at different levels of understanding, is much more variable than was first thought. The more we find out about different aspects of geographical learning the further the roots go back into childhood.

Spatial awareness

Children first begin to discover the location of objects as they play with toys in their cots. Initially, taste and touch provide the main clues, but after about three months their vision improves and they become capable of focusing more sharply on objects. From about ten months onwards children begin to actively explore their environment. As they develop the ability to crawl, and then walk, the scope and range of the places they can visit expands enormously, though parents usually restrict these early forays for fear of dangers. However, as youngsters grow in ability and confidence, so they are allowed to go further afield. This introduces them to the environment beyond the front door.

Maps are essential tools in the discovery process, but how do young children learn to use maps and find their way from place to place? Palmer and Birch (2004) describe an investigation by Bluestein and Acredolo which provides some interesting insights. Sixty 3-5 year-olds were asked to find a toy elephant hidden in a room. They were given a map that showed the layout of the furniture with the position of the toy marked with a cross. The results were impressive. Half the three-year-olds, three-quarters of the four-year-olds and all the five-year-olds were able to find the toy. Generally the children had little difficulty interpreting the map and appeared to understand that the room, furniture and toy were shown symbolically. Subsequent investigations showed the importance of aligning the map. When the map was rotated by 180 degrees only the oldest children were able to use it correctly and even they had difficulty.



Photo | Kathy Alcock and John Collar.



Children respond to their surroundings using all their senses. **Photo** | Shaun Flannery.

Exploring the local environment

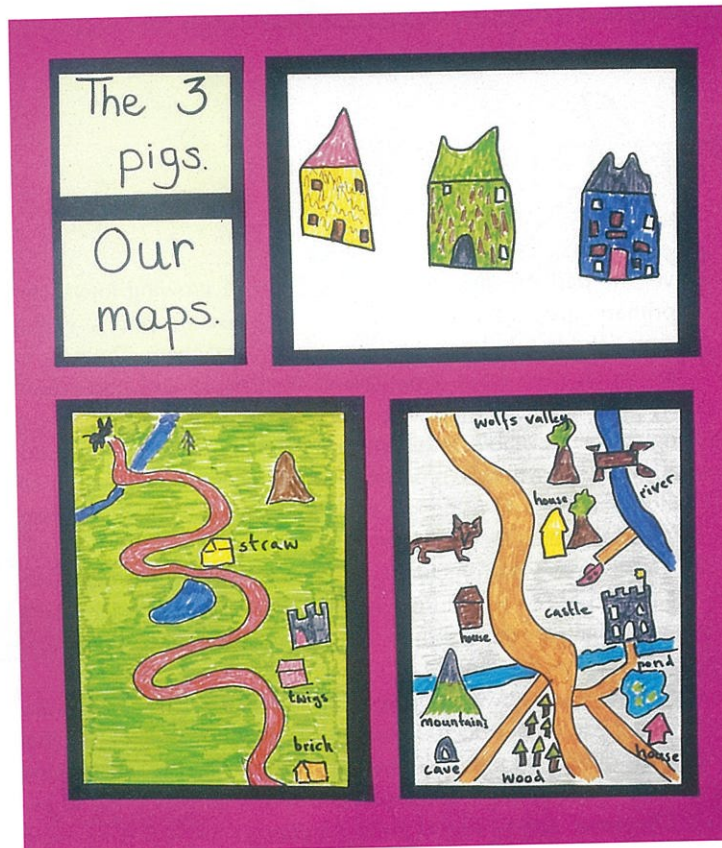
Most of us remember the place where we were brought up in some considerable detail and often recall it with fondness. These first impressions of the outside world stay with us throughout our lives and provide a rich source of experience. Authors such as Laurie Lee, Virginia Woolf, George Orwell and Marcel Proust recall their early memories with great sensitivity in their novels. Our sense of identity, it seems, derives in some part from the social and physical environment in which we spend our childhood.

The way children interact with their immediate surroundings is important not only for their psychological well-being, it also promotes their educational development. Many play activities involve rehearsing or re-enacting previous events and situations. Through imitation children are able to give full reign to invention and fantasy. Piaget argues that make-believe play allows children to assimilate knowledge and forms the basis of a child's thought even before it can speak. Certainly the opportunity to model and manipulate experiences seems to be an essential part of the learning process.

Several researchers have attempted to find out more about children's private geographies. The classic study was undertaken by Hart (1979) who made a detailed investigation of a New England township over a two-year period. Hart discovered that the children put a particularly high value on water features such as rivers, lakes and ponds. They also favoured trees for climbing and hiding games. The places they feared matched the archetypal scary places of children's literature – attics, cellars and abandoned buildings, and bedrooms and garages at night. Very few of the children selected places for their aesthetic qualities alone. Hart comments on the way children treasure informal routes and pathways which they often use as 'shortcuts' even when they are actually longer. Other researchers, too, remark on children's affinity for secret routes and alleyways. As they explore their surroundings children construct private geographies which meet their physical and emotional needs.

The names they invent for their favourite places offer further insight into children's thinking. In activities such as rollerblading, Ross (2005) reports how children give special names to hills and playing spaces, along with minor details such as 'the gap in the hedge'. These personal

Figure 1 | Drawings of the route taken by the wolf in 'The Three Little Pigs' by reception, year 1 and year 2 children.



Other researchers investigated cross-cultural issues. One study considered the mapping abilities of four-year-old children in a number of different countries. After discussing the features on a vertical aerial photograph, the children were asked to trace a route from one house to another. Not only were the majority of the children able to complete the task successfully, they all demonstrated an ability to interpret the photograph whatever their cultural background.

Further evidence that spatial reasoning is universal and not related to cultural background comes from a study in rural Kenya conducted by Matthews (1995). Here pupils aged seven to thirteen were asked to draw a map of their village. Despite being almost completely isolated from

Western influences and never having seen a formal map, the majority of the pupils completed the exercise successfully. Furthermore they recalled their environment in vivid terms using plan views and other relatively sophisticated representations.

Another issue which has occupied many researchers is whether there is a difference in spatial ability between boys and girls. Wiegand (2006) provides a useful summary of the research, concluding that boys tend to draw maps which are spatially more accurate than those drawn by girls. Boys' maps are also better organised and contain more route information. However, Wiegand also notes that spatial ability is a complex term which encompasses a number of qualitatively different abilities, so research studies into mapwork and gender often yield contradictory results.

One question to emerge from this research is whether gender differences in mapwork are innate or whether they reflect social and cultural influences. In the past, primary age boys were allowed considerable freedom to explore their surroundings which may have helped to develop their spatial understanding. By contrast, girls were allowed out less often and not permitted to go so far. It remains to be seen how changing social attitudes and modern technology will impact on the quality of children's maps.

In general, research provides compelling reasons for introducing children to mapwork from an early age. Many infant school teachers already take the opportunity to create 'pictures' to show journeys associated with stories and fairy tales. The route taken by the wolf in 'The Three Little Pigs' is a typical example (Figure 1). However, the fact that children seem to draw maps spontaneously long before they learn to read or write suggests that spatial awareness is a fundamental skill which should be developed in nurseries and other pre-school groups as a basic educational entitlement.

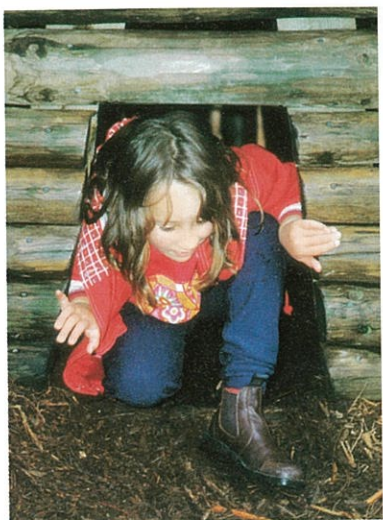



Figure 2 | Exploring their environment helps children develop their sense of attachment and identity. **Photo** | Diane Wright.

names usually denote the activities that can be done in a particular spot rather than its physical appearance. This preference for functionality was also noted by Owens (2003) who describes how a metal bar used for fastening a door was variously identified by reception class pupils as a meeting place, something you can lean and swing on and something you must not touch.

In thinking about pupils' perceptions of the environment it is important to recognise that their experience may be limited and not to make assumptions. For example, Owens (2003) discovered through discussion with reception class pupils that many of them had no idea that there was a field attached to their school. Similarly, there are adolescents living in London who have never travelled by bus or

underground or ventured across the River Thames and those from the Channel ports have never been to mainland Europe.

At the same time children are naturally curious and inventive. They invest their surroundings with personal meaning and interpret them according to their needs. It is worth remembering in this context that the most intensively used play areas are often small patches of dirt rather than designated facilities. Children also need places where they simply loiter or daydream (Figure 2). Edmund Gosse, the Victorian naturalist, is one of many authors who have left us with a description of their childhood pleasures:

 *By the side of the road, between the school and my home, there was a large horse pond. Here I created a maritime empire – islands, a seaboard with harbours, lighthouses, fortifications. My geographical inventiveness had its full swing. Sometimes, while I was creating, a cart would be driven roughly into the pond, shattering my ports with what was worse than a typhoon. But I immediately set to work, as soon as the cart was gone and the mud had settled, to tidy up my coastline again and scoop out anew my harbours.* (Gosse, 1965, p. 136)

It is through transactions of this kind that children come to invest their environment with meaning. The attachment to places which we develop as adults is derived from these childhood interactions. We identify with our home area in lots of different ways. Some people support their local football team, others become involved with local history or trace their family tree. Historically people used to believe they belonged to the soil of a particular place in an organic and religious relationship. The Romans recognised the spirit or essence of a locality (its *genius loci*) by setting up shrines to local deities. Anthropologists have recorded similar beliefs among the original inhabitants of Australia and North and South America.

These studies remind us that the quality of an environment is a very complex issue. As well as quantifying physical and human processes, geographers seek to take account of subjective and personal responses. What a place is like is not simply a matter of fact. It depends equally on how we perceive it and what we feel about it. Contemporary concerns over personal security and the relentless growth of road traffic are serving to erode children's personal freedom and their links with the environment. Malone (2007) argues that today, in westernised countries around the world, many parents are restricting children's movement to such an extent that it is damaging their social, psychological, cultural and environmental development. The 'bubble-wrap' generation is being deprived of opportunities to take

initiatives, learn survival skills, develop a sense of adventure, gain self esteem and accept responsibility for their actions. In addition, children are failing to keep physically fit and healthy.

Restoring this richness to children's lives is a challenge which schools cannot expect to meet on their own. However, they can at least promote pupils' awareness and provide some form of environmental experience. Geographical fieldwork has a unique contribution to make to this process. On one level fieldwork can consist of environmental walks and simple data collection activities in and around the school buildings. It can also involve work in local streets and journeys to nearby places. In addition many schools organise some form of residential experience or school journey.

It may also be possible to make better use of the daily journey from home to school. In a study of 150 key stage 1 and EYFS pupils, Large (2004) found that those who talked to an adult about their journey were much more aware of the route than those who did not, even if they travelled by car. Parental involvement was the crucial factor in turning children from passive participants to active learners. Equally, teachers can encourage pupils to engage with their surroundings by setting them challenges such as identifying the nearest postbox or making a survey of front door colours.

Distant places

Children's ideas about distant places develop alongside their knowledge of the local area. Fairy tales and picture books often provide settings which are way beyond a child's immediate experience. Some stories involve journeys to the other side of the world. Others describe adventures in mountains, forests or deserts. Birds and animals provide much of the interest in young children's literature. Pictures of lions, tigers and other creatures frequently decorate the walls of toddlers' bedrooms and many children first learn about Africa and Australia through wildlife.

At the same time, images of the wider world are beamed into our homes through the media. Satellite images and scenes from foreign lands appear regularly on our televisions. Soap operas, with their focus on people and strong storylines, are a particularly powerful influence, although they give a surprisingly limited impression of places. Advertisements and magazines are another source of images and information. Children's natural curiosity about distant places feeds off these stimuli. At first they may not be too sure about the difference between real and fictitious places. They will probably also be very confused about distances. However, as they

grow older they gradually begin to sort out their ideas into a more logical framework.

As well as being exotic and exciting, some psychologists have postulated a deeper reason for children's interest in faraway lands. It is suggested that infants try to cut loose from the restrictions of family and neighbourhoods by thinking about imaginary or distant locations. In this way they begin to acquire detailed information about specific places such as villages, harbours and small islands. As well as being reassuring, a knowledge of the boundaries of the world builds up children's self-confidence and helps to



Photo | Paula Richardson.

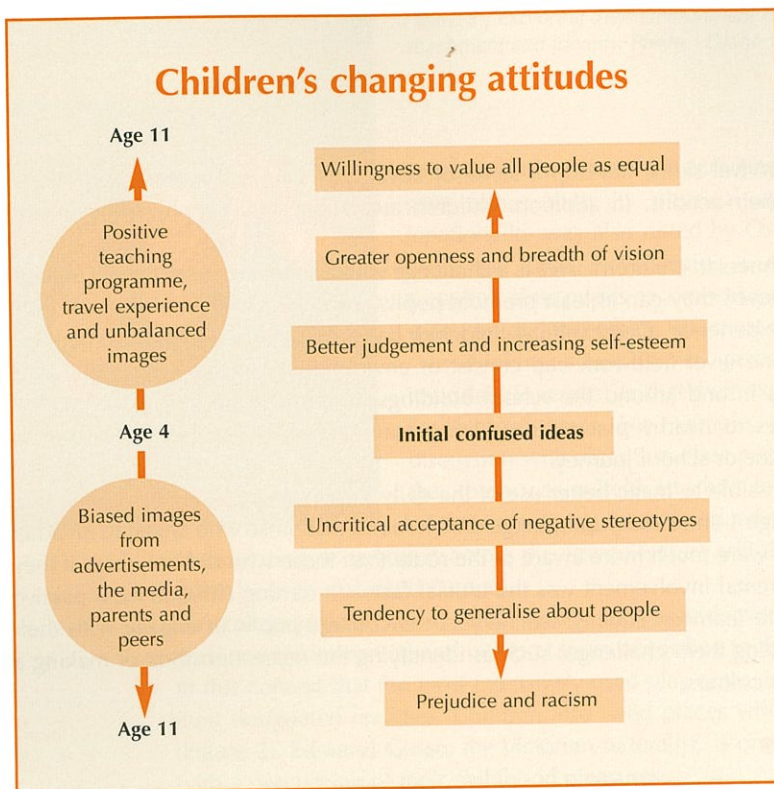


Figure 3 | Positive images of the developing world are best developed in the primary years before attitudinal rigidity sets in.

develop their sense of individuality. What then are the images of the Earth which young children carry around in their heads? Wiegand (2006) reports on a number of studies. In one of these, primary school pupils were asked to write down the names of all the countries that they knew. The seven-year-olds typically named about five countries, focusing especially on the larger land masses such as America, Africa, India and Australia. By age 11 the pupils' knowledge had expanded and they were on average able to name 15 countries. Generally they appeared to have a good

knowledge of Western Europe but the countries of Africa and many other parts of the developing world still did not feature significantly on their mental maps.

What children think about a country is of course more important than the ability to name it. In recent years numerous activities have sought to reveal their images and ideas. Generally it appears that infants and lower juniors tend to associate countries with food and animals but are likely to be confused. Older children exhibit a wider range of responses but also include an increasing number of negative images such as war, famine and poverty.

Disney (2005) conducted a detailed study of children's perceptions of other countries. During the early stages of a schools linking project, two classes of year 5 children in Nottinghamshire were asked to draw pictures showing how they imagined the locality of their Indian partner school. The drawings fell into roughly four categories:

- **stereotypical images** – traditional villages with straw or mud huts, animals and people carrying baskets on their heads
- **exotic images** – fairy-tale images of domed buildings, snake charmers and scenes from stories such as the Arabian Nights
- **undifferentiated images** – this (rather uncommon) response was characterised by drawings of supermarkets, roads and houses which could have been in England
- **complex images** – palm trees, markets, blocks of flats which appeared to be based on some knowledge but also included traditional stereotypes.

Disney concludes that these representations are fairly consistent with previous research. When Graham and Lynn (1989) invited groups of pupils to discuss photographs of the economically developing world they found 'a large proportion of infants and many less mature upper juniors associated the scenes in Bengal and Bangladesh with hunter-gatherer lifestyles,



Figure 4 | We can help children to relate to people in other parts of the world by stressing common human needs and emotions. **Photo** | Stephen Scoffham.

one declaring "They sleep on skins from the bears they've killed with spears". Over twenty years later, Martin's work on children's ideas about The Gambia (cited in Maddern, 2010) discovered similar responses. It appears that Western children associate life in economically developing countries with primitive customs and are quick to adopt negative stereotypes.

Teachers need to be aware of these findings so that they can provide classroom activities which will broaden pupils' thinking. If left unchallenged, crude stereotypes can easily harden into prejudices, especially when reinforced by peer or group pressure. Infants, it appears, learn attitudes in the same

way that they learn facts. Stereotypes are thus fairly easy to dislodge at this age. By the time pupils reach secondary school their attitudes are much more entrenched and difficult to modify (see Figures 3 and 4).

Teaching strategies

The fact that children develop their geographical understanding from an early age has significant implications for teachers. To begin with, it is important to discover what pupils already know before teaching them something new and to engage with their personal experiences, which are often highly individual. Not only does this serve to eliminate repetition, it also helps with lesson planning. New knowledge, as Bruner has pointed out, is much more secure if it is keyed into existing patterns of understanding. Conversely, misconceptions can obstruct even the best-planned lesson, confusing pupils as they seek to grasp new ideas.

Regarding curriculum content, there are strong reasons for introducing children to geography from the earliest ages upwards. Children are naturally curious about their surroundings and we can harness this energy to enhance their knowledge and understanding. One of the aims of curriculum planning is to ensure that pupils have a reasonable balance of topics and are introduced to new ideas in a logical and progressive manner. Blyth and Krause (1995) have proposed a model of progression in geography which is particularly compelling.

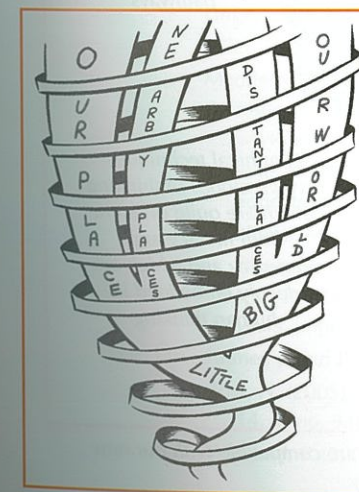
They see the curriculum in terms of four main strands:

- 1) the local area
- 2) nearby places
- 3) distant places
- 4) the wider world.

Basing their ideas loosely on Bruner's spiral curriculum, they argue that all four strands need to be represented at each stage of development. However, as children grow older they will revisit the strands in increasing breadth and complexity. One of the strengths of this model is that it acknowledges how the local and the distant are intertwined. Another advantage is that it acknowledges that pupils need to consolidate their learning by revisiting it in a number of different ways (Figure 5).

In recent years there have been a number of new developments which have further illuminated our thinking about primary geography. Perhaps the most profound comes from research into the workings of the brain.

Figure 5 | Primary geography involves studies of both the local area and distant places from the earliest years.



Using radioactive trackers, neuroscientists are able to identify which areas of the brain 'light up' when we do particular tasks. Not only has this shown that very simple activities can involve complex brain operations, but also that almost everything that we do involves both an emotional and intellectual component. It seems our 'thinking' and 'emotional' brains work in tandem and cannot easily be separated.

One of the reasons why the emotions are so crucial is because they focus our attention which in turn drives our learning and memory systems. Deep and meaningful learning can only occur when we are emotionally engaged. This in turn depends on a secure and affirmative classroom environment.

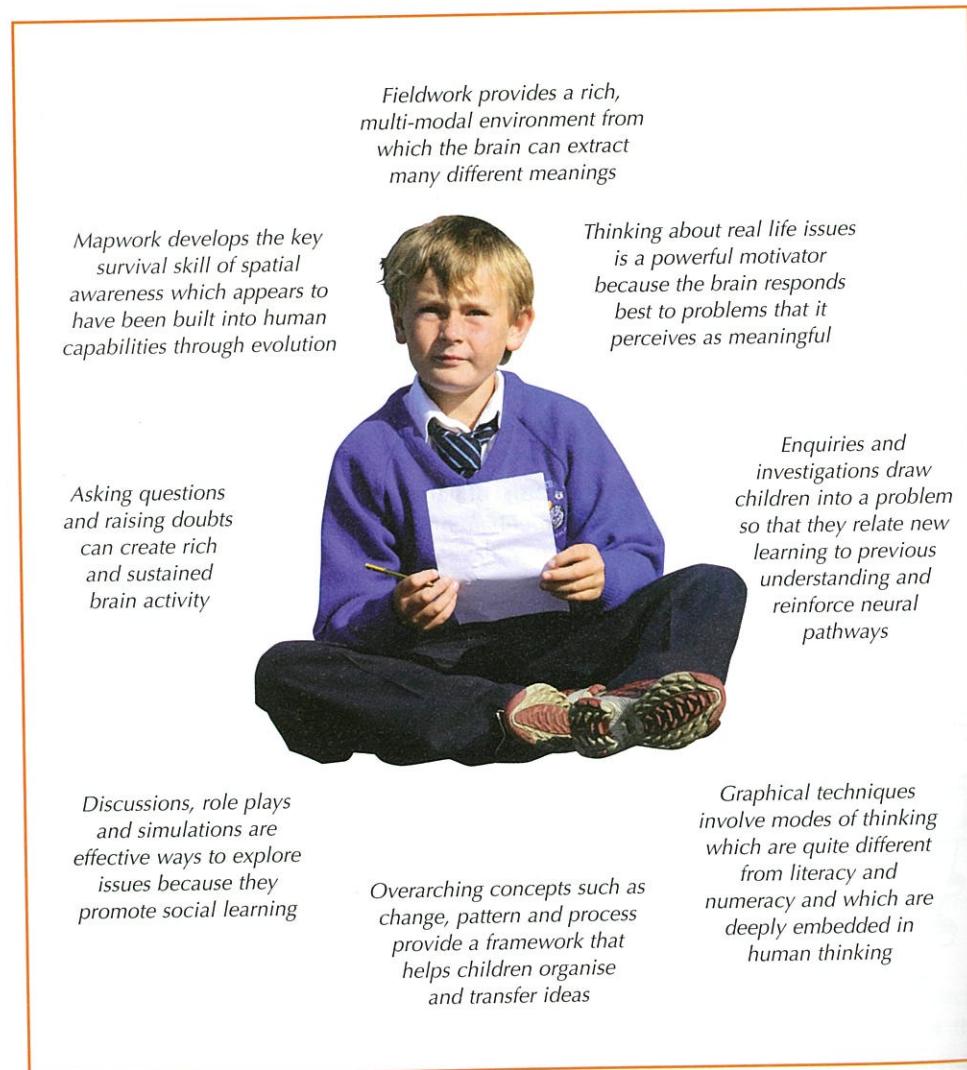


Figure 6 | Many of the strategies used in primary geography teaching are compatible with our new understanding about the working of the brain. **Photo** | Shaun Flannery.

Fortunately geography, because it is such a rich and varied subject, provides young children with a great number of entry points, any one of which can harness their enthusiasm. In addition, geography teachers have a long tradition of linking classroom learning with the outside world which makes it more personal and meaningful. They have also promoted methods of learning that encourage pupils to ask questions, test hypotheses and transfer ideas from one situation to another. These different approaches, which practitioners know are effective from long experience, are increasingly being validated by empirical evidence from the new science of learning (Figure 6).

Investigating the quality and character of different places is an essential component of any worthwhile geography curriculum. Children are uniquely equipped to undertake these studies as they have a freshness of vision and a strong natural desire to explore their surroundings. As the 19th-century educationalist Friedrich Froebel put it, children 'seek adventure high and low' in their 'desire to control the diversity of things' and 'see individual things in their connection with the whole' (Lilley, 1967). We need to encourage them in this endeavour from an early age.

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Stephen Scoffham
July 2010

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Foreword

Over the last few years, the long and enduring staple crop of history-led television programmes have given way to a dizzying spread of geographical fodder. What began as a twinkle in Michael Palin's eye, grew with the indigenous wanderlust of Bruce Parry and the homegrown beachcombing of the *Coast* team, and has taken root with the latitudinal travelogues of Simon Reeve and the expeditionary zeal of programmes like *Operation Borneo* and *Land of the Jaguar*. Add to that the glossy specials like

Planet Earth, *Earth: The Power of the Planet* and *How Earth Made Us* and you realise that a new star has been born in popular culture: the planet.

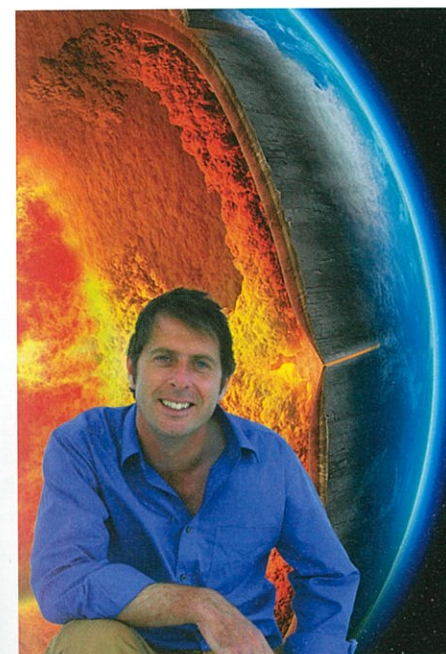
I'm never sure if the mass media drives or is driven by the public mood, but this burst of primetime entertainment drawn from the world around us seems to me to be firmly rooted. Global geopolitical issues that have gestated in geography classrooms around the country for decades have now crept into homes and workplaces, as questions about climate, hunger, resources, population, and migration become the everyday conversations. Folk for whom geography once meant a bemused recollection of oxbow lakes are now routinely debating the merits of recycling, the efficacy of renewable energy sources, and the legitimacy of government carbon emission or immigration policies.

It is clear to me that geography is no longer the blue trivial pursuit but something with real currency in modern society. Not everyone will want to study it, but with geographical issues being among society's most pressing concerns, our future depends on those who will. And of course, it all starts with you.

Teaching geography in primary schools helps young people make sense of the abundance of information that they acquire from the television, the media, from conversations at home and from their own observations. Geography helps young people to become more aware of their planet and develop into informed individuals in an increasingly challenging and unpredictable world. This book offers fantastic support that will enable you to help your pupils on this journey.

Iain Stewart
July 2010

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