

Two Year Olds Outdoors

Play, learning & development

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Introduction

“Children experience the world with their whole being - body, spirit, energy, minds, hearts, compassion, tears, laughter, anger, pride, learning, understanding, love, and soul. Children play, grow, and feel the world around them intensely.”

[Rusty Keeler 2008]

Daily opportunity to spend time in rich outdoor environments is of crucial importance for all children, and this is especially true for children throughout their third year. The rapid development of physical skills and manual dexterity, and the explosion in language and imaginative play each open up new ways of being and relating outdoors, and a vast range of possibilities for exploration, discovery and play. The two year-old child is intensely driven to explore and is hugely disadvantaged if this is restricted to a range of indoor environments, however varied. As adults entrusted with the care of very young children, we are duty-bound to provide the best possible circumstances for their well-being and healthy development.

“Very young children have a very special way of relating to the outdoor world. It is of enormous interest to them... They have an inborn affinity, curiosity and fascination with the natural world: sky, wind, rain and shadows; plants, trees and leaves; sticks, pebbles and rocks; water, puddles and mud; dogs, birds and beetles and people. Children use their whole body and whole self to engage with, explore, dismantle and think about the world – and this is very apparent when young children are in the real, outdoor world.”

[Jan White 2009]

The outdoors is a very special place for two year-olds, providing wonder, excitement and unlimited stimulation. As you watch this film, here are some of the things you might identify that the outdoors offers two year-olds:

- access to space with opportunities to be their natural, exuberant physical and noisy selves;
- fresh air and direct experience of how the elements of the weather feel;
- contact with natural and living things, to maintain their inborn affinity, curiosity and fascination with all things belonging to the natural world;
- freedom to be inquisitive, exploratory, adventurous, innovative and messy;
- a vast range of real experiences that are relevant and meaningful and that make sense;
- endless opportunities for discovery, play and talk so that new experiences can be processed understood and used;
- an environment that feeds information into all the senses at the same time;
- involvement with the whole body giving deeply felt meanings and all-round physical health;
- movement experiences that develop essential structures within the brain and nervous system;
- emotional and mental well-being, where self image and esteem grow;

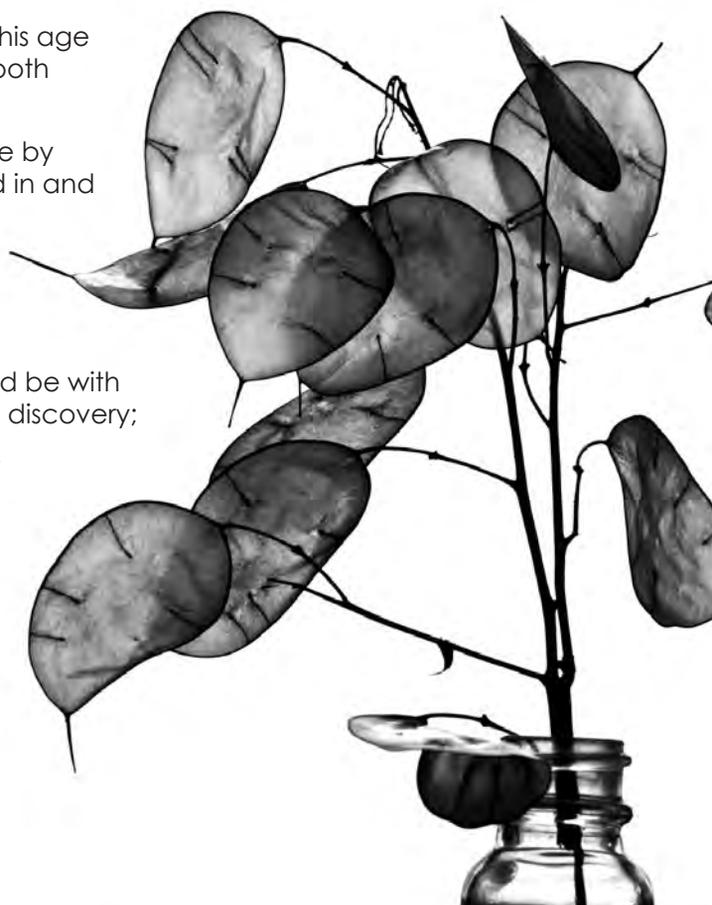
- social interactions that build relationships, communication, social skills and enjoyment of being with others;
- lots of opportunities to set themselves challenges and to learn how to keep themselves safe;
- and a place that meets the way they learn best and allows them to express feelings, thoughts and ideas in a way most suited to them.

[Jan White 2008]

This film has been made to support parents, practitioners, providers and inspectors in early years settings, and students, trainers and advisors in early childhood education to develop their understanding of, and commitment to, the role of the outdoors for children from 24 to 36 months. Watching the sequences repeatedly will enable adults to tune more deeply into just what it is that two year-olds want to do and know about when they are outdoors. It will also give a great deal of food for thought and discussion towards the development of appropriate provision and practice that is fulfilling for children and adults alike.

The film aims to:

- show how much two year-olds get from being outside and why it is so important for them;
- make the special nature of being outside apparent and clear, so as to build the rationale for outdoor provision in all early years settings;
- show what the outdoors offers two's, how it meets their interests and supports well-being and learning;
- illustrate how being together outdoors offers powerful contexts for the development of language, imaginative play and friendship;
- help adults tune in and see more of what is really happening in the play of two year-olds;
- emphasise movement and exploration for this age group, showing how experience develops both brain and body;
- indicate what environments are appropriate by illustrating what two year-olds are interested in and what they want to do;
- expand adults' thinking about what is appropriate provision - and that this is so much more than tarmac and toys;
- make adults WANT to take two's outside and be with them, to share in their pleasure, delight and discovery;
- show that two year-olds must have outdoor experiences every day (several times in a day) and all through the year;
- make parents expect and demand outdoor opportunities every day for their child.



The notes have been written primarily to help viewers to observe more closely some of the significant things that are taking place for the child in the sequence. The section entitled 'things to notice and understand' aims to focus attention on issues that are important to know about. The sequences show a great deal about child development in general, and can be used very effectively in this way. The focus of the notes, however, is to bring attention to those elements that are particularly relevant to being outdoors. Understanding more about these issues will support practitioners to develop both provision and their practice outdoors. There are common themes across the six children, such as 'the role of movement', because these themes are of great importance during this year. Within these themes, development can be seen as we move from Tristan at 28 months, to Jordan at 36 months.

The notes for each child also have a section called 'prompts for developing practice'. The aim here is to identify what makes outdoor provision effective and satisfying for both child and adult, and to give prompts for closer observation of the film sequences followed by focused discussion. Improvements in provision and practice are more likely when understanding of these issues is developed and positive thinking about barriers, objections and stumbling blocks is carried out.

Above all, every adult living with and supporting two year-olds wants to give them certain messages, and hope that they will come to believe these things about themselves. Close examination and consideration of the film and accompanying notes should support adults to use the huge potential of the outdoors to make young children feel that:

- they are good to be with – it's great to be doing things together outdoors;
- they can feel good in their body – responding to children's drives for doing, moving and using their whole body, and helping them to take pleasure in how that makes them feel;
- they are capable and competent – offering the right level of intellectual, emotional and physical provocation and challenge, and using experiences to help children gradually learn how to look after themselves and others;
- they are trusted and responsible – setting things up so that children can play independently and support each other, and providing plenty of first-hand experiences and meaningful real tasks;
- they are curious and adventurous – offering an environment full of irresistible spaces, materials and experiences;
- they are creative and inventive – having an open, flexible approach that encourages young children's great imaginations and values the unexpected.

[Jan White 2010]

This quotation, written in 1956, seems as relevant now as it was then:

"If a child is to keep alive his inborn sense of wonder... he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in."

[Rachel Carson 1998]

We hope that being able to closely observe and come to understand these six deeply curious and sociable two year-olds will help you to tune into their real natures and passions; and that you will want to share in their pleasure, delight and discovery, every single day, throughout the year.



Tristan

2 years 4 months

Things to notice and understand

The special nature of the outdoors

“If we don’t capture the potential of the outdoors, we are missing the point – and missing the huge capacity of the outdoors to help young children to thrive and grow, adding greatly to what the indoors can do.”

[Jan White 2009]

Watching the incredibly rich experiences Tristan has with his Mum in the garden, the street and the local shops and park, it is clear that the outdoors is a very different place to the indoors for a two year-old. Rather than attempting to ‘take the indoors out’, it is vital that children’s outdoor experiences capture the special nature of the outdoors, providing what the indoors cannot. Several viewings of Tristan’s various outdoor experiences, combined with plenty of discussion, will enable practitioners to analyse and come to appreciate the phenomenal range of differences that exist between inside and outside environments, and just how much developmental value these contain for two year-olds. Young children are very tuned to these differences and this is why they want and need to be outdoors so much, and why outdoor provision is so important for them. Paying close attention to the differences and complementary experiences available – what makes the outdoors special – will help teams to reach a shared belief in the importance of the outdoor half of the setting’s environment. This awareness will also guide decisions about just what experiences the outdoors should be providing for all children in their care.

Like so many two year-olds, Tristan is a really ‘outdoor boy’ who finds being outdoors very stimulating and responsive to his needs. To such an active explorer and thinker, the outdoor world is fantastically inspiring, feeding body, soul and mind in equal measure. Two year-olds are driven with a biological imperative to find out about and make sense of the real world – the natural physical world and the world of humans - and the outdoors in all its complexity and richness has a huge role to play in this. With his rapidly developing brain and mind, Tristan can both seek out opportunities and create his own experiences, drawing on material provided by a developing memory and an emerging capacity to imagine what is not actually there. In the film, we can particularly see how much the natural world stimulates and supports these imaginative abilities.

Tristan’s Mum has a strong commitment to ensuring that he spends plenty of time outdoors every day, both as part of their routine and at his nursery. Whilst the garden provides much for Tristan, she has also long experienced the value of

taking him out into the various outdoor environments in their locality. He thrives on these experiences and especially on their familiarity. His well-being is served by his confidence that he will be able to go outside whatever the weather or time of year, and that he will be able to return and revisit these places soon: “come back later” and “come back soon” are refrains that he and his Mum share and that he knows will be true.

“Think of some ordinary, boring, everyday walk, the couple of blocks to the local 7-eleven store. Taking that same walk with a two year-old is like going to get a quart of milk with William Blake... The trip becomes a hundred times more interesting, even though, of course, it does take ten times as long.”

[Gopnik, Meltzoff & Kuhl 1999: 211]

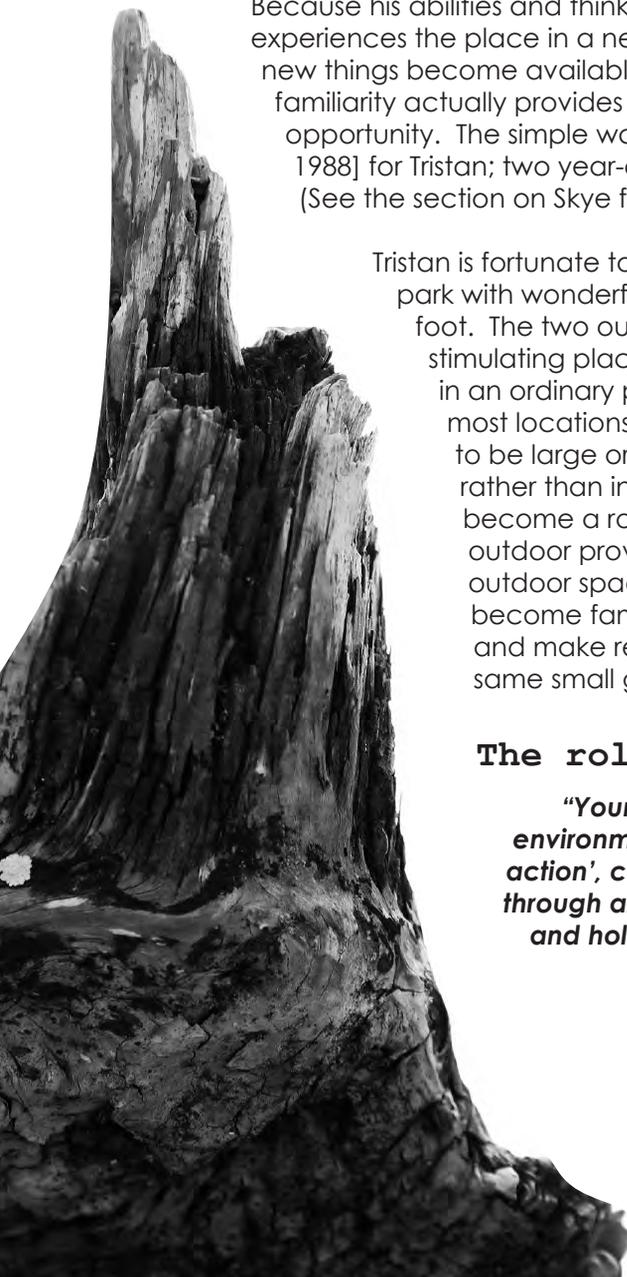
Having walked at his own pace, without being hurried, along the street outside his house many times throughout his life, Tristan is alert to every feature and event, from the miniscule to the grand. What could easily be passed by in a hurry (in a buggy or car) as having no value to him, on the way to something more significant, is in fact very important to this ardent meaning-maker. The immediate locality and community provide the most relevant and interesting spaces for two year-old explorers and these are the very places they most want to take their time in, to experience as fully as they can. Each time Tristan revisits something along this journey, he adds to his understanding, builds new thoughts and has novel ideas. Because his abilities and thinking processes are constantly developing, he actually experiences the place in a new way. As he changes physically and mentally, new things become available in the same environment, so that the security of familiarity actually provides an ever-changing landscape of sensation and opportunity. The simple walk along this street has very high ‘affordance’ [Heft 1988] for Tristan; two year-olds do not need to go somewhere new all the time! (See the section on Skye for more on affordance).

Tristan is fortunate to have both an active local high street and a local park with wonderfully natural areas on his doorstep and accessible on foot. The two outdoor environments both provide extremely rich and stimulating places for the unhurried two year-old. However, he lives in an ordinary part of a large city. It is possible to find rich places in most locations – for children of this age such places do not need to be large or exotic, but they do need to be experienced on foot rather than in a buggy. Small daily forays into the local area can become a routine part of practice, providing another layer of outdoor provision (and a superb way of augmenting limited onsite outdoor spaces), when adults seek suitable and nearby spaces, become familiar with them so as to feel comfortable using them, and make regular, frequent visits and journeys in them with the same small groups of children.

The role of movement and physicality

“Young children learn about themselves and their environment through movement. Movement is ‘thought in action’, children have first to experience the world actively through all their senses before they can think in the abstract and hold thoughts on the memory of those things in their heads as pictures, concepts or symbols.”

[Margaret Donaldson 1978]



Tristan engages in a huge amount of movement through the space, opportunity and challenge that being outdoors provides – no wonder two year-olds sleep well when they have lots of outdoor play! Young children absolutely love to move and are driven to develop their physical abilities from birth onwards. This drive for movement is perhaps so strong because of its fundamental influence on all other aspects of a child's life. Young children need huge amounts of time and opportunity to engage in a wide range of playful physical experiences in order to develop the right foundations for health and happiness, both now and in their futures [White 2008b]. Movement is a child's first 'language', providing the primary means of experiencing and thinking, and, although we become largely unaware of it, it remains our dominant sense throughout life [Hannaford 1995, Goddard Blythe 2004]. Young children take in information about the external world by physically and bodily interacting with it; they build understandings by moving through it and manipulating it; they think by moving and express their thoughts through movement; and they gain understanding of their bodies, themselves and how their body relates to the world by experiencing the sense of movement. Watching Tristan reveals how much movement, sensation and action are at the heart of the two year-old child's exploration, development and learning.

However, opportunity for this much movement is being alarmingly reduced in the lives of very young children, as they spend more time strapped into car seats and buggies by adults in a hurry, have limited opportunity for energetic play and their 'boisterous' activity is increasingly frowned upon. Lack of movement makes a child frustrated and lack-lustre, and it severely prevents healthy emotional and neurological development.

There is much to notice and understand about movement in the sequence on Tristan. The idea that seems to be of persistent concern to him (his attention to how things move along a pathway and the trajectory that they take) is best understood through movement of his whole body and he seeks ways to actually feel this sensation, investigating his schematic interest at a sensori-motor level [Bruce 2005]. When Tristan pushes vehicles up the slope and feels the exhilarating fast motion down it, and when he falls through space as he jumps off the wall followed by feeling the resistance of the firm ground, his experiences feed both this schematic exploration and provide excellent stimulation for neurological development of the proprioceptive sense (body awareness) and the vestibular sense (balance and coordination) - see the sections on Skye and Jordan for more on this. Broad steps, different levels and sloping ground are highly valuable features in a nursery garden for two year-olds, especially where the gradients and levels vary to offer different experience and challenge opportunities. Plato saw true playfulness in the need of young children, both animal and human, to 'leap'. He suggested that leaping expresses faith in yourself and your environment. The opportunity to jump from different heights and land safely is incomparable, a test of self and gravity [Greenman 2007: 292]. Nursery School pioneer Margaret McMillan also saw 'jumping-off places' as an important feature of an outdoor environment for the very young [McMillan 1930:29].

In the garden, on the pavement and in the park, Tristan finds numerous ways to use and extend his rapidly developing powers of locomotion. Notice how he adds skipping and swinging his legs out to the side to the now-mastered skills of running. Through much clambering, jumping and landing, he is building loco-motor skills, balance, coordination, bone density, muscular strength, control and agility. He is seeking and finding lots of stimulation for fundamental perceptive and neurological development, and keeping his mind in an alert, ready-to-learn

state through the release of the neurotransmitter dopamine and the activation of attention centres [Hannaford 1995]. And in doing this he is also developing an awareness of his own body and a sense of himself in space, gaining pleasure and stimulation from movement, feeling good about his body and building a sense of being 'me'. All of the children in this film show us aspects of the vital role that being physical has for two year-olds, and that it is a really important part of life throughout this year. At a time when research reports continually raise alarms about the physical and mental health of our children and adolescents [for example, Department of Health 2009, British Heart Foundation 2009], practitioners and parents need to become more knowledgeable about the deeply important and highly pervasive significance of two year-olds' movement needs, so that they become much more tolerant and supportive of their natural movement behaviours.

The clambering that Tristan is able to engage in at the park is a wonderful example of the way in which young children get to know about themselves and learn how to use their body as they grow. As he playfully explores the physical environment, he is mapping or 'calibrating' himself against it. This calibration of our body to the physical environment helps us to operate smoothly without being clumsy. Because of the rapid development during this year, this is more a process of constant adjustment, and it is important that the child learns how to continually 'recalibrate' (the clumsiness common in adolescence is due to another period of recalibration). Tristan is able to add self-awareness and the language of movement to his bodily sensations during this adjustment: "Balancing - too slippery ... not too slippery".

"If children engage in enough calibration and recalibration actively early on in their lives, they may be able to navigate new spaces more successfully as they grow up"

[Hughes 2001: 148]

Sensory development/ use of the hands

Tristan's movement play also has a very important role to play in the development of his vision and spatial awareness. Vision is a remarkably complex sensory system that is a great deal more than 'eyesight'. Well functioning visual processing allows us to understand objects, space, movement and time through different elements that combine in the brain, allowing us to keep ourselves safe and to interact meaningfully in our environment, socialise and learn. Vision, unlike sight, is not a skill we are born with but is rather one that we develop gradually as our senses integrate through movement [Stock Kranowitz 2005: 158]. Movement teaches the brain to make sense of incoming signals from the eyes, develops the aspects of vision that gives objects and space a sense of depth and allows us to make sense of what we see so that we can move competently in it. It helps to develop control of eye movements, such as being able to fix steadily on an object, efficient movement from point to point (such as word to word when reading) and to track a moving object. When we move, our brain integrates visual information with stimulation from various internal body senses to link up what the world looks like with what the body feels like – movement, balance, muscle control and postural responses are crucial for proper vision development. The strongly tactile nature of the outdoors, the opportunity to move on lots of different kinds of surfaces and having a wide range of things to handle and manipulate, all contribute strongly to our human reliance on vision to survive and thrive.

It is interesting to note that boys' and girls' eyes specialise in different ways. Female sight is best adapted to detect colour and texture, focusing on 'what is it?' while the male visual system is better adapted to detect location, direction and speed, answering the question 'where is it, where is it going and how fast is it moving' [Sax 2005: 22]. It seems likely that many boys' highly movement- and action-focused play behaviours feed this orientation, seen especially with Tristan and Jordan in this film, while Skye, Leila and Erin's interests centre much around materials, objects and face-to-face interaction. It is important to be aware of these differences in an early years setting, where the workforce is predominantly female and the indoors is seen as the main place for 'learning'.

It is fascinating to carefully watch Tristan's delicate responses to the muddy patch as he pokes it and ponders about it. Connected to the pointing behaviour so characteristic of very young children, he is now able to use his extended first finger to examine the feel and consistency of the mud and then to scoop some up to transfer it and spread it onto a new surface. Humans have a unique ability to control finger movements individually, giving us an amazing range of abilities. In the book *The hand: how its use shapes the brain, language and human culture*, Frank Wilson suggests that the human hand has played a key role in the evolution of our intelligence and creativity [Wilson 1998] and many professions do make use of the hands to 'do' their thinking. Tristan has the materials, climate and permission to do his thinking with the help of his developing dexterity.

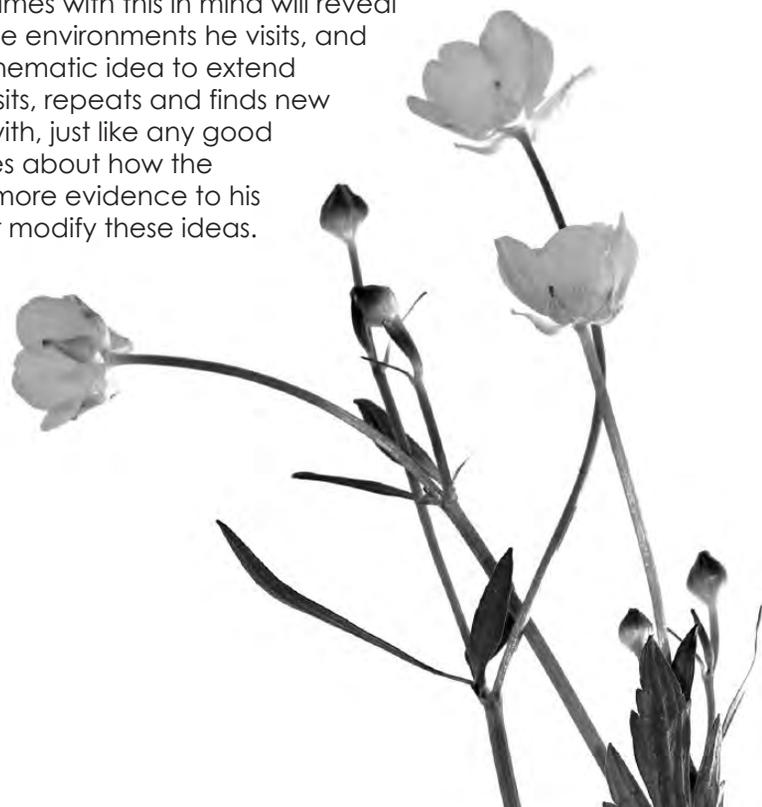
"Our brains evolved to think with their hands long before they perfected the art of inner speech and logical reasoning"

[Bill Lucas & Guy Claxton 2010]

What matters to two year-olds: schemas

There is a clear theme running through Tristan's interests, actions and explorations. He seems to be very aware of the way things move along a particular direction or pathway, the trajectory that they take and the line that this can make – this is known as a trajectory schema [Arnold et al 2010]. He is especially interested in feeling what this motion is like through moving his body along various pathways (see above), but he also notices lines of movement and things that move in the environment and is fascinated by how he can make such lines with the water squirter. Watching the sequence several times with this in mind will reveal just how attentive to this idea he is, in all the environments he visits, and how he uses words associated with the schematic idea to extend his thinking and understanding. As he revisits, repeats and finds new examples to investigate and experiment with, just like any good scientist he begins to build and test theories about how the world works. Each new experience adds more evidence to his existing ideas or prompts him to expand or modify these ideas.

This kind of prolonged investigation involves gaining understandings of some 'big ideas' [Rich et al 2005] that are significant in lots of ways, such as along, to and fro, here and there, there and back again, up and down, and results in an ability to think about space and how movement can occur in it.



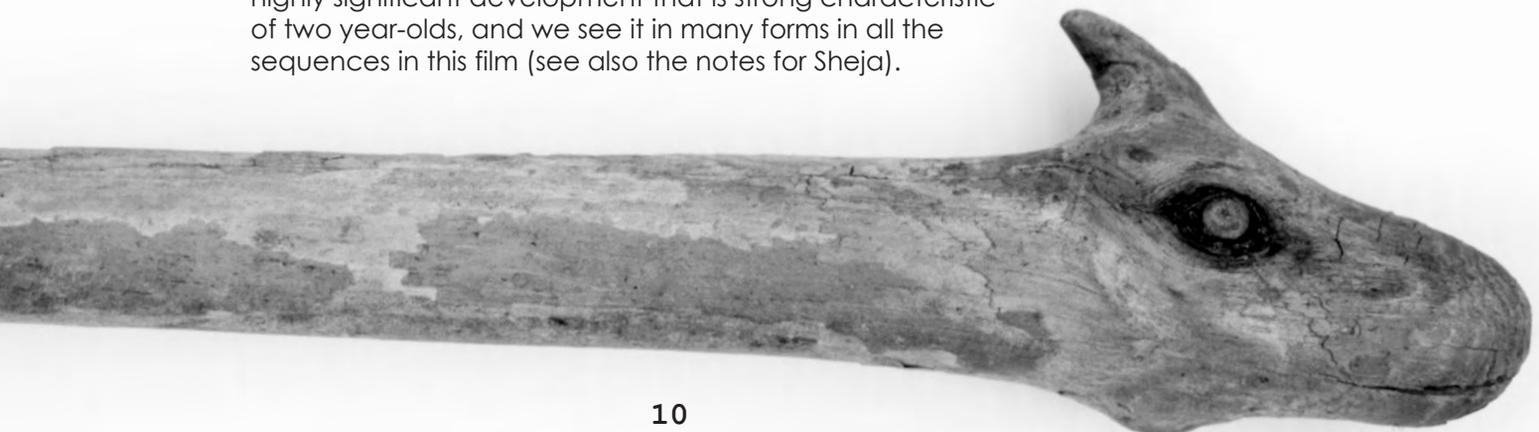
In running repeatedly along the track in the pavement, he gets a personally felt meaning of the idea of a line and how it begins and ends, giving him an intuitive intelligence of geometry that will serve him well in all sorts of ways later in life and will certainly help in thinking mathematically. An interest in how things move might also be linked to his love of movement and 'doing' (trajectory behaviour was less commonly displayed in the behaviour of girls than boys in a small scale study [Arnold et al 2010: 152]).

The right stuff: materials and resources; emerging pretend play

The outdoor environments that Tristan has daily access to are full of just the right materials to best support his thinking, learning and development. The garden and park provide him with rich experiences with the real physical world and the street and shopping centre give him plenty of access to the real world of adults, so they are all of enormous interest to him. It is well worth taking the time to watch this sequence several times in order to take note of all the resources that these environments provide, and consider in what ways they make good materials for a two year-old child – why they are indeed 'the right stuff'. This understanding can then be transferred to the context of your setting's outdoor provision. Here we will consider just two of these, both provided by the visit to the park.

As Tristan pokes his finger into the muddy area, he is able to remember lots of previous encounters with this curious substance. So quite quickly 'what is it?' progresses into 'what can I do with it?' and 'what happens if...?' (see the film notes for *Toddlers Outdoors*, [White 2010b]). Making marks has been a characteristic of humans long into prehistory and is clearly a deeply inbuilt drive – and fingers were probably the first mark-making tools. As well as being curious about what can be done with this substance, in making a mark on his environment Tristan can feel also experience feelings of competency, control and power. This sense of agency is incredibly important for emotional health and social success, and lays a foundation for emerging self regulation, a desire to participate and dispositions for learning. Materials that the child can choose how to use, together with permission and support from tuned-in adults (and a readiness to deal with mess and hygiene issues), make potent resources for imagination, creativity and innovation and provide a powerful learning environment, both cognitively and emotionally.

The landscape of the park is also a fantastic stimulus for Tristan's emerging capacities for imaginative thinking. The way he uses the log pile, a place he has visited many times before, shows how physical and imaginative play operate in parallel – with body and mind constantly feeding each other. More than likely, his creative ideas draw from the stories and books he shares with his parents and other close adults, and this helps his Mum to understand and join in with his imaginative scenarios. The ability to imagine what is not actually there is a highly significant development that is strong characteristic of two year-olds, and we see it in many forms in all the sequences in this film (see also the notes for *Sheja*).



Personal and social development

Tristan clearly thrives on being outdoors and there are many events in this sequence that demonstrate how experiences outdoors can contribute to the growth of an emotionally strong child. His sense of self is strongly related to his use of his body and developing body awareness, coupled with how language enables him to talk about himself. His well-being comes from being so well stimulated and able to pursue his own interests at his own pace. Spending long, unhurried periods of time with someone who understands him and who he cares about adds to his feelings of value and self-worth. Characteristically of young two year-olds, his growing self awareness also gives rise to feelings of separateness [Martin & Berke 2007] and therefore a sense of vulnerability, an emerging awareness of danger and things to be alarmed by, and a need for reassurance by a tolerant, close adult. Tristan clearly still needs the safe base of an attentive, tuned-in adult, who supports both his dependence and independence, in order to feel brave and adventurous.

Tristan appears to be on the threshold of understanding that he has a past and a future. His sense of self and sense of time may be merging towards the 'critical ability that distinguishes the amnesic infant from the toddling autobiographer ... allowing us to star in our own memories' [Ferryhough 2008: 130]. At the fish shop, he refers to a previous experience: "children playing on here". Future and past seem to be held in mind when he talks about going to get an (imaginary) apple and then returns with it; and then so impressively comes up with the solution of chopping it up to share! His awareness of a future enables him to reassure himself about having to leave; "Tristan come back soon". His confidence that he *will* be able to return soon supports him to self-regulate and control his feelings – a very significant emotional development with positive consequences for the focus on friendship that emerges later in this year of life (see the notes on Jordan).

Communication and language development

The outdoors provides enormous stimulation for the development of language at a time when the child is very ready to be stimulated. Everywhere and everything outdoors holds stimulus and provocation for using language to communicate and to think. This film sequence is a wonderful example of the outdoors at work as a place for being together and having relaxed conversations.

Tristan is at the point where the 'language explosion' occurs, and he points to, names, comments on and questions everything in rapid succession. Gesture, particularly pointing with the first finger, has been linked to the evolution and development of language: "the child always points while naming and does not name without pointing" [McGilchrist 2009: 111]. The rapid fire of the two year-old's commentary can be quite tiring for adults, but having shared experiences helps adults to understand what the child is saying and thinking about, so it is very important to work in close collaboration with parents to be able to understand and support the child as much as possible. Liz has lots of opportunity to share genuine interest in a sustained way with Tristan. 'Sustained shared thinking' is recognised as an especially effective teaching strategy for young children [Siraj-Blatchford et al. 2002], and this seems to occur more often and in a natural way when adults share less structured time with children outdoors.

Prompts for developing practice

Organisation

- ❑ Effective outdoor provision requires an ethos and vision, underpinned by a strong rationale, that two year-olds must have access to the outdoors for plenty of time each day, every day of the year. What issues would need to be addressed in a policy to help bring this vision about for your service?
- ❑ Going for very small walks in the locality just beyond the home or setting are clearly of great value and importance for two year-olds. What enables or limits these in your provision? How could organisation be changed to increase the amount that the locality and community are part of your outdoor provision?

Environment

- ❑ In order for the world beyond the setting to be a routinely and frequently accessed layer of outdoor provision, suitable places need to be found and they need to be easily used. Discuss the film sequences to decide what the important components of these two elements are and how this could be harnessed in your setting.
- ❑ Tristan's physical explorations show how important slopes, jumping-off places, clambering and uneven surfaces are for two year-old development. Often, providers feel they should remove all potential hazards, leaving just a 'safe' and flat surface, and safety is of course of paramount importance. Use the film of Tristan and Skye to discuss the balance between benefit and risk.

Adults

- ❑ If short walks into the locality and community are to be part of regular practice in a setting, the practitioners must know these places well, feel totally comfortable about taking children there and able to give the children enough freedom when they are there. Discuss what makes this level of comfort possible.
- ❑ For two year-olds to get the most from being outdoors, they need the close accompaniment of adults with a high commitment to the value of the outdoors who take great pleasure in being outdoors with them, and who see all weather as 'good' weather! Discuss the various ways that the adults in this film show these commitments and dispositions.

Parents

- ❑ A very strong feature of the success of Tristan's experiences outdoors is the slow pace and room for following his interests and ideas. How can we help parents to see the value of just 'mooching' with their child in simple outdoor places, finding time for 'slowness' and gentle conversation?
- ❑ Mud is clearly a wonderful and fascinating material, but dirt and germs as a health concern is a difficult issue which has to be carefully discussed within the team and with parents. How do we enable two year-olds to explore in a safe enough way? Is dirt okay for two year-olds and where is the line (see notes for Leila regarding the 'hygiene hypothesis')?

Skye

2 years 6 months

Things to notice and understand

The special nature of the outdoors

Skye revels in being outdoors. This sequence shows clearly how the special nature of the outdoors adds to and complements the opportunities available indoors. It should be seen as one of the two halves of the whole learning environment, and we must make the most of its potential to provide children with experiences not possible indoors. Being outside gives Skye the space and freedom she needs to follow her drives to move herself and other things around and to be physically active. It offers her a variety of spaces and places, each with its own different feel and stimulation. And it inspires her with all the right kind of irresistible provocations and invitations – she finds so much that is of interest and that matches her internal motivations. This is a powerful environment for Skye to be in; one in which all developmental domains are supported in an holistic and harmonious way.

Every day is different, bringing new stimulus, but Skye also has a familiar, stable environment where she can expect to return to previous pleasures and ideas again and again, and she can also confidently expect to have lots of access to these every single day. When the outdoors is just an expanse of tarmac, rubber surfacing or flat grass, practitioners must set out resources each day and can feel that they should offer something different each day. This can be quite unsettling to a young child. When the richness of the environment comes mostly from the landscape, the natural world and the weather, as in this nursery, diversity of experience comes within a framework of comfortable stability and plenty of opportunity to return. In the same way that Tristan benefited so much from the familiarity he had from a long relationship with his garden, street and park, Skye can find what she needs from an outdoor space that she has spent lots of time in and knows well. This provides part of the safe base that allows the exploratory and social drives to flourish.

The big tyre is a good example of how a rich environment, full of possibilities of many different kinds, can be quite simply created. Set into the ground and backfilled with soil, the tyre provides a very stable climbing and clambering structure. From the top, it provides small children with the fabulous feeling of being high up. As well as a panoramic view over the outdoor space and into the locality (being able to 'see the whole world'), this gives the sensation of being as big and as competent as adults. Landscape architects have long recognised the primal human need for 'prospect' as a way of searching the landscape for danger, food and water [Appleton 1975], and the value of building 'views' into designed landscapes for modern humans. However, the tyre also offers the small,



enclosed spaces much valued by children. The feeling of being inside, especially when the child feels hidden but can also see out, is a potent experience for a two year-old. It meets a deeply emotional requirement for safety and nurture (summed up in the term 'refuge' [Appleton 1975]), enables the exploration of enclosure, envelopment and containment schemas, and generates social interaction and pretend play [Kirkby 1989, Dixon & Day 2004]. When they feel secure, two year-olds start to enjoy spending time together away from adults and need spaces that feel slightly private, hidden and undisturbed. Adults who recognise and respect this need and its value for building relationships and having conversations, as we see taking place in the secluded corner at the water butt between Skye and Sophie, send subtle but significant messages that the children are viewed as competent and trusted, able to look after themselves and to sort out their own dilemmas.

Amongst many other things that this tyre can provide are a wonderful jumping-off point and a great source of mini-beasts. This feature in the outdoor space illustrates the very useful concept of 'affordance' [Heft 1988], which has been well developed in Playwork [Brown 2003]. The child looks at a space, feature, material or object through the perspective of, 'what can I do here?' or, 'what can I do with this?' For example, steps might be used to climb up, balance along and jump from, bounce a ball down, lie along on their tummy, look out from, sit on with a friend or make into a pretend house. Such a feature has high play value for children, but its potential 'affordance' will be lost if the value of what they are doing is not well understood by adults. The big tyre clearly has great affordance for this group of children and as each one develops and grows, so they will be able to do different things with this same resource.

The role of movement and physicality

"Movement is an integral part of life from the moment of conception until death, and a child's experience of movement will play a pivotal part in shaping his personality, his feelings and his achievements. Learning is not just about reading, writing and maths. These are higher abilities that are built upon the integrity of the relationship between brain and body."

[Sally Goddard Blythe 2004]

Like most two year-olds, Skye is a very active child, constantly on the move and keen to practice, test and extend her physical skills. Movement is at the heart of children's health, well-being and development in every domain, and must occupy a central role in any early childhood programme that seeks to support children to become confident, competent and successful individuals. Two year-olds need their lives to be full of movement and physicality: if they are restricted or inhibited, they will not thrive [White 2008b]. As we watch Skye's physical activity on the slide, we can deepen our understanding of how being physical contributes to fundamental neurological development, and how important this is for young children (see also 'personal and social development' below).

Moving fast through space is a motion that young children love and they seek out this sensation at every opportunity on



slopes, slides, swings, roundabouts, rockers, bouncy surfaces, adult bodies and so on. Moving in these ways provides stimulations that wire up motion-detecting organs in the inner ear to the parts of the brain that interpret movements in gravity and space. This 'vestibular' sensory system underpins the development of balance, body control and coordination - which themselves underpin so much else, both physically and emotionally. Having a strong sense of motion and balance allows us to cope in the world, and is a hugely important developmental process [Goddard Blythe 2004] that can only mature through *movement* of the body in space. Young children need very many such movements, every day, over several years to develop this sense fully so that they are comfortable in their body and can move, control and position it with ease. "Immature vestibular functioning is frequently found amongst children who have specific learning difficulties such as dyslexia, dyspraxia, problems of attention, language impairment, emotional problems, and adults who suffer from anxiety, agoraphobia and panic disorder" [Goddard Blythe 2004: 17]. The recent large increases in children with such diagnoses may well be related to the significantly more sedentary lives children now experience from birth onwards. The outdoor environments two year-olds play in must offer features (such as slopes, steps, slides, low jumping-off points, things to twist and turn around and a range of surfaces) and resources (such as rockers, swings, tyres, hammocks, spinning cups and strips of fabric to twirl with) that offer plenty of potential and invitation ('affordance') for children to find these movements in their own way [White 2008b]. They also need adults to understand just how much they need to create the stimulation this neurological system requires and who support them to access it, as Skye also does while jumping down from the top of the big tyre and Tristan does jumping from the wall and running his car down the grassy slope. Coming down the slide head first and up-side-down amplifies the vestibular stimulation Skye gets, as well as offering new perspectives on her world!

What matters to two year-olds: schemas/ use of the hands

Skye has a passion for foraging for, collecting and gathering a group of objects. She loves to transport materials but has also taken this interest further into collecting many different objects at once until her hands and arms are full. She does not appear to select things that are alike, but seems interested in having a diverse range of items in each collection. She then examines and compares them, finding similarities and differences.

Foraging for food is, of course, an ancient drive in humans and a feeling of having plenty is likely to satisfy at a deep psychological level. In *Understanding schemas and emotions in early childhood*, Cath Arnold [2010: 59] suggests that the physical gathering of materials might also be linked emotionally to personal worth. "'Having' lots might be a symbol of needing lots of love and also of being worth lots of love", with the child deriving satisfaction from this gathering and possession. She suggests that for some children, this might help with coping with the difficulties of sharing parental love with siblings, especially new ones – a common experience for children in their third year.

Use of the hands becomes very sophisticated during this year and the fingers can be operated independently. It is interesting that Skye's hands are so much part of her schematic investigations: watch the sequence focusing on all the ways she uses her hands during these activities, including controlling the tap on the water butt. She seems to carry as much as she can, using lots of different strategies, and

then to spend long periods handling her 'treasures' to find out what they are like, what they feel like and what can be done with them (much like the heuristic play of indoor provision [Hughes 2006]), through which she is learning about size, shape, amounts, spaces and the nature of materials – this is maths and science at exactly the right level for two year-olds. She also talks and thinks about their use in the world of adults. This amount of handling gives her hands a wonderful work-out, building strength, coordination and control. Our hands are such an important, but little thought-about, feature of our humanness – they are really an extension of our brain [Wilson 1998] and full dexterity is important for future life functioning.

One of the things that makes this outdoor space so good for Skye is that there are lots of collectible, moveable materials and lots of containers to put them into, move them from place to place and transfer them between. The variety and abundance of loose materials provides a highly motivating and intellectual environment, well suited to her needs.

The right stuff: materials and resources; emerging pretend play

Natural materials provide some of the best resources for the play of two year-olds. They are highly sensory and have a wide variety of attributes. They are satisfying to handle and manipulate. They are open-ended and very versatile – they have no fixed or required purpose, and can be used flexibly, responding to what the child needs from them. Where the resources are loose and mobile, they can be moved and relocated according to the child's desires and drives. If they are abundant and can combine with each other, the possibilities are further expanded. Good outdoor environments are filled with such 'loose parts' and the adults understand the child's need to use resources in this way.

The value of these materials goes much further though. The shapes and qualities of the different natural items remind Skye of features of a face and, with the support of a tuned-in adult, she uses them to represent things she knows about. She has moved from object play in which she explores what objects are like and what she can do with them, into thinking about what the object can become, using them to stand in for something else. This 'dual representation' – Skye knows it is a shell but she can also imagine it as a nose or eye – describes our very human ability to attribute characteristics and meanings to things that don't actually possess them [Medina 2008]. This remarkable capacity for symbolic thought explodes during this year of life, alongside the related explosion in language, and these materials are perfect for driving its development.

Water is also a fabulous material for two year-old players and socialisers. As a very familiar yet fascinating substance, two year-olds have a lot of experience of water and know a lot about its role in the lives of humans. Combined with its openness and the great flexibility in the way it can be used, this makes it a potent resource for pretend play. As we witness with Skye and Sophie, water play activity in the secluded area at the water butt provides a focus of attention for lots of interaction, talk and friendship.

Personal and social development

Skye's well-being and self-image are particularly well supported in this outdoor environment. Returning to watch Skye's physical activity on the slide, we can also broaden our understandings of just how important being physical is for very young

children by considering how it contributes to her sense of self as a capable and sociable person.

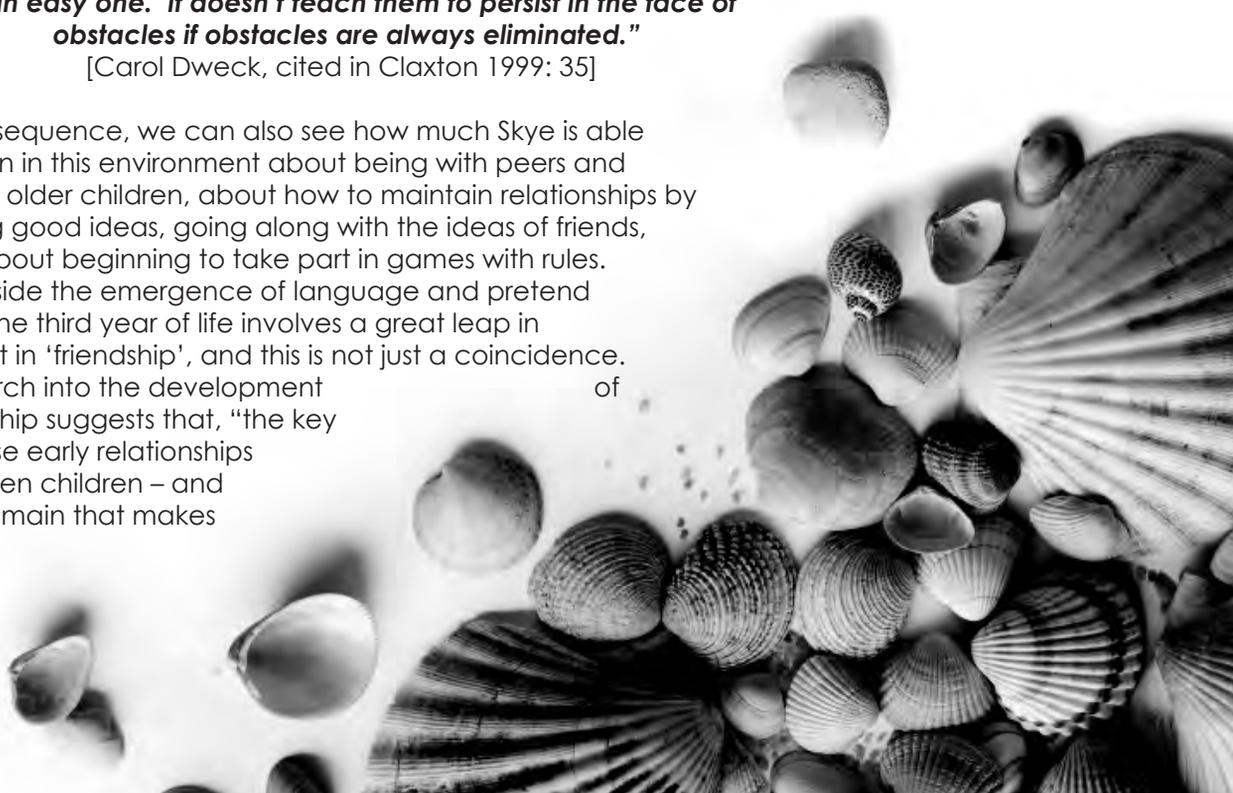
Skye is very keen to copy the physical actions of the bigger girl, Ella. It is remarkable to see just how closely she attends to the older girl's movements and how accurately she mimics them. Following and 'matching' (synchronising) movement has been found by psychologists to be an important element of rapport between two friends [Quilliam 1994: 65]. Imitating and moving together is a powerful means of bonding in young children. Children of this age can be wonderfully inspired by each other: this is more than simply copying, as when the child imitates, she brings her own feelings and ideas to the situation, which can in turn inspire the other child. Skye also has the stimulus to practice what she has learned through watching and being with older children. Successful mixed-age outdoor play is supported in this nursery by a spacious and rich environment that is responsive to each child's abilities and ideas. Being able to do what others do and to join in with things that are socially valued by the peer group (especially doing what big girls do) contributes enormously to personal, emotional and social health [Mackintyre & McVitty 2004]. This is clearly part of the great feelings Skye experiences when she succeeds in coming down the slide up-side-down while playing with Ella.

The third component of Skye's physical play on the slide comes from the motivation to push herself into the emotional zone of 'being on the edge'. Inspired to try by her interest in Ella and what she does, Skye pushes her physical and emotional boundaries, probably feeling a little bit scared but still just within her ever-developing comfort zone. Finding these edges, knowing what it feels like to be at them and conquering fears, especially when this involves several attempts before success, gives rise to wonderful feelings of exhilaration and competency [Sandseter 2009]. Skye's feelings of bravery and self-belief will make her adventurous, robust and socially confident. Being able to take risks safely is an extremely useful life-skill that has implications in all aspects of life [Lindon 2003]. Children who have a strong sense of self-efficacy, who see challenges as things to be relished (an 'I can do it' attitude), and who persist in the face of difficulty have a wonderful tool kit of dispositions for a 'mastery' approach to both learning and life.

"It doesn't help a child to tackle a difficult task if they succeed constantly on an easy one. It doesn't teach them to persist in the face of obstacles if obstacles are always eliminated."

[Carol Dweck, cited in Claxton 1999: 35]

In this sequence, we can also see how much Skye is able to learn in this environment about being with peers and slightly older children, about how to maintain relationships by having good ideas, going along with the ideas of friends, and about beginning to take part in games with rules. Alongside the emergence of language and pretend play, the third year of life involves a great leap in interest in 'friendship', and this is not just a coincidence. Research into the development of friendship suggests that, "the key to these early relationships between children – and the domain that makes



friendship so interesting and developmentally important – concerns the children's shared imaginative play" [Dunn 2004: 22] . During the first months of the third year, children playing with their friends or siblings engaged together in an increasingly complicated way, each making independent contributions to a shared pretend theme, and between 30 and 36 months the children adopted complementary roles (such as mother – baby), showing their growing ability to understand and expand on what their play partner intended.

Skye's pleasure in playing alone is also important: the capacity to be alone is an aspect of emotional maturity [Storr 1997:18]. Skye's confidence in the availability of adults who understand her and are ensuring her safety, means that she can relax and become engrossed in her own private world. Practitioners can be concerned when children of this age withdraw, but opportunity for this is another valuable aspect of a rich outdoor space.

Communication and language development

"Both the sound and the rhythmic elements of music have the power to communicate. In this sense, music is another form of language, and if movement is a child's first language, music is the second".

[Sally Goddard Blythe 2004: 70]



The world of the imagination and the world of language develop in parallel during this third year and are strongly associated; and songs provide the link. In the previous section of the film, it was lovely to hear Tristan's use of refrains from well-known songs, and to see his Mum pick up so quickly on these. These songs relate to favourite outdoor places and events (such as 'down the stream' and 'driving along') and are clearly part of his thinking and vocabulary. They also enable him to experiment with language and to make up new phrases and rhymes. In this section, we again see that songs have an important role for Skye and that the outdoors provides all kinds of stimulus and meaningful contexts for her to sing, listen and join in with others. Two year-olds are very strongly drawn to songs and rhymes, especially where this involves movement and interaction, and this is a fabulous way of building well-being and relationships, and of supporting the development of language and imagination. Songs do everything the developing language-user needs. They help children hear the sounds of words; they give words meaning and help to link ideas to their word-symbols; they provide new vocabulary that the child can remember; they are full of rhyme, alliteration and rhythm; they are full of story, pattern and prediction; and they give the child pleasure and confidence in the use of language. Most importantly, they link voice with movement, so that the brain is activated for learning and the child uses their whole body to make sense and meaning. Making music appears to be one of the fundamental activities of mankind (no culture so far discovered lacks music [Storr 1992: 1]) so it must have a deep psychological value for all children. The outdoors should be a musical place, where young children can be musical in all sorts of ways with their voice, their body and the environment around them [Ouvry 2004].

Adult support and interaction

We have seen just how much Skye's adventurous use of the slide has supported her all-round development. The adults in this setting have made a considered and shared decision that this method of coming down the slide is safe enough for those children who make their own judgement that they can manage it. We also see several examples of confident adults supporting Skye to push her physical-emotional boundaries on the big tyre. There are several elements to the successful harnessing of such opportunities for challenge that being outdoors offers. Firstly, the adults know the children very well and know their personalities as well as their interests, understanding what they want to do and how they need to do it. Trusting relationships between children and adults are well established, such that the children can feel safe that alert and attentive adults are making sure that what they are doing will not cause them harm. Secondly, as a team the practitioners often discuss children's need to be adventurous and to challenge the situation (such as going down the slide 'the wrong way') and work out what their reactions and responses should be. An approach of 'risk-benefit assessment' [Ball, Gill & Spiegel 2008] and 'risk management to enable' recognises the value of the experience alongside the risks, and identifies how to make this positive experience available in a safe-enough way. This in turn makes them feel comfortable and confident to deal with situations as they arise, so that they are calm, positive and responsive [Tovey 2007]. Thirdly, the adults in this film sequence have considered how much support they should provide, and what kind. Settings that are most effective at keeping children safe also ensure that opportunities are used to help children begin to learn how to keep themselves safe [Ofsted 2006]. Providing just enough support to enable the child to be successful, or indeed allowing space for the child to fail and try again so as to build feelings and dispositions of mastery, requires sensitivity, thought and debate with colleagues and parents. We give subliminal but significant messages to young children through our reactions and responses that can have great impact on their self image and esteem.

Prompts for developing practice

Organisation

- At the end of this sequence, we hear Skye complaining about having to go indoors. Young children need to know that they will be able to go outdoors every single day, without fail, preferably several times a day, and to have very gentle transitions between indoor and outdoor time. The most effective and satisfying outdoor play occurs when children have free and easy access to the outdoor environment, or at the least, when adults take children outside whenever that child needs it. How can you work towards this in your setting? What issues would need to be addressed in organisation to help bring this vision about?
- Risk management is vital to safe, satisfying and effective provision, both indoors and out, but must take into account the *benefits* of an experience for the child (for example, by employing risk-benefit assessment [Ball, Gill & Spiegel 2008]). Use the sequence of Skye on the slide, together with these notes, to prompt a discussion on the benefits of such experiences, and how risk and challenge might be suitably balanced for the two year-olds in your setting.

Environment

□ Although quite small, this nursery garden has lots of different spaces, places and materials. Watch the film to identify all the features that make this a rich environment for Skye's investigations and play, and how this has been achieved in a small outdoor area. Extend this discussion to consider what your outdoor space could provide to offer a developmentally appropriate outdoor environment for two year-olds.

□ Small, private spaces are deeply significant places for young children. Share memories of the hidey holes and dens you played in as children, recall how this play made you feel and consider what a child might gain from such experiences – physically, emotionally, socially and cognitively. Outdoor environments in settings need to have lots of small nooks and crannies and materials that can be used to make them – what could be done in your outdoor environment?

Adults

□ As we see from the sequence with Skye and Sophie, the child's need and right to feel 'out of sight' is beginning to matter at this age. When practitioners feel that they must be able to see children at all times, they send unintended negative messages to the child about their competence to look after themselves and that they are not trusted. How can space and time to allow friendships to deepen away from adults be given, without making adults anxious?

□ Adults working with this age group must have large repertoires of songs and action rhymes, both traditional and popular, that can be drawn on spontaneously, whenever the right moment arises. How can this be supported for play outside?

Parents

□ Effective outdoor provision requires an ethos and vision, underpinned by a strong rationale that is fully shared by parents, that two year-olds must have access to outdoor environments for plenty of time each day, every day of the year. How can you engage parents in the value of daily outdoor provision for their child? What opportunities can you find at all stages of your communication with parents to help them understand your approach?

□ Parents may be understandably concerned about the risks of their two year-old playing adventurously, and having daunting or scary feelings. How can we help parents understand the value of such rich learning experiences and how they are managed in the setting?

Sheja

2 years 9 months



Things to notice and understand

The special nature of the outdoors

One of the strongest aspects of the 'special' nature of the outdoors is the amount of freedom it provides young children. In Sheja's outdoor play, we can see several elements of this potential freedom. There is the freedom of space to move, to use the whole body and to interact energetically with both the environment and with other people. There is also lots of freedom to make a noise and a mess! With such freedoms, there is also the stimulus, provocation and flexibility to be freely inventive. Most of all, as we see with all the children in this film, there is the freedom for two year-olds to follow their own agenda. And because of this, with the presence and support of understanding, tuned-in adults, we see these children being highly curious, engaged and creative.

While Tristan accesses huge variety through the different outdoor environments he visits each day, Sheja's nursery environment shows how much variety is generated simply through daily changes in the weather and by having a variety of spaces and places to come back to every day. Places and objects feel and behave differently each day, the amount of cloud cover affects light and wind levels, rain changes all the surfaces and things happen beyond the fence. We are blessed in the UK with four different weather systems, bringing constantly changing weather and (with appropriate clothing) unexpected delights. Add to this the gradual changes provided by the seasons, and every day brings new and exciting experiences.

In a rich nursery garden such as this one, there is plenty to catch a two year-old's attention; but what goes on outside the fence can also be of great interest. Having some boundaries that children can look through and see the world beyond adds another dimension to outdoor provision. However, a totally open space with only wire-mesh fencing can feel insecure, overwhelming and lacking in the nurture of an enclosed area. Taking photographs with the children helps adults to find out what an outdoor space looks and feels like for two year-olds.

Chance and serendipity are also strengths of the outdoor environment, especially when nature is present. Interesting things happen all the time outdoors, and since two year-olds are so interested in the real world they notice all sorts of things that adults might overlook, from tiny things on the ground (or slide) to huge things beyond the fence, such as the bus and the plane that Sheja hears. Making the most of this is one of the pleasures of working with young children, but it requires attentive and alert practitioners and an open, flexible routine and planning system. Two year-olds should not be constrained by a closely planned timetable or more than a few preset activities outdoors. Rather, practitioners need to be ready and able to draw on resources, ideas, games and songs that respond to the moment or motivation.

When two year-olds have daily access to outdoor provision and long periods of uninterrupted time outside, they can come back to things that have interested

them, revisiting them to work things out in their own time. As you watch Sheja, look at how he returns to things he knows about and connects experiences together to deepen his understandings about his world.

The role of movement and physicality

Like other children of his age, Sheja incorporates running, stopping and starting, turning corners, kicking, leg swinging and falling into his life outdoors. Movement of this kind, especially in the natural light and fresh air of the outdoors (see the notes for Leila), is a powerful mood-lifter. Movement makes us feel alert and energised, and stimulates the production of neurotransmitters that control movement [Hannaford 1995], leaving the mind in a ready to learn state and giving the body a wonderful feeling of 'life in every limb'.

Recent research has identified over a hundred differences between the brains of human males and females, that relate to the evolutionary focus of men as hunters and women as finders and nurturers [Featherstone & Bailey 2010]. Many of these physiological differences result in boys having a strong urge for energetic, action- and movement-oriented play, which is well accommodated in the outdoor environment. Football is highly physical, social and interactive and of great interest to many boys, especially during the recent World Cup in South Africa. Research suggests that running together and chasing is the way that relationships and friendship bonds are formed between boys, and gives an important 'way in' for joining the play of others [Holland 2003: 70] – Skye also engages in following and chasing games.

What matters to two year-olds: schemas/ sensory development

As well as feeling the world through movement, two year-olds are actively using all their other senses to stimulate the development of nerve connections in their brain and develop their capacity to make meaning from incoming sensory information. The outdoors is intensely multi-sensory, meeting these developmental needs in a multitude of ways. Throughout the film, we can see these two year-olds seeking out sensory stimulation and information all the time, wiring up the brain through experience so that it can both detect, and interpret what it has detected. Each sense also needs to wire up to the others to become smoothly integrated (sensory integration), so that the body can work in the highly effective way it is capable of [Stock Kranowitz 2005]. Having well-developed and well-integrated sensory systems is extremely important to life functioning and learning, so it is not surprising that young children are so driven to do this work on their bodies. And since we cannot do it for them, it is our task to ensure that they are doing this as much as possible.

Sheja is notably focused on sound and hearing, being particularly attracted to making sounds himself and alert to noticing them in the environment. The abilities to hear and to modulate



sensations of sound underpin our ability to really *listen* to sounds around us and understand their meaning. This is a very rich area of perceptive and cognitive development for him, especially as he acquires two languages. The outdoors is a wonderful place for the development of all the different elements of this very important and complex sensory system. The world is full of sounds, and young children have to learn how to hear them separately (discrimination), understand what they relate to (recognition), work out where they are coming from (direction), how far away they are (distance) and how they are moving (tracking) [Stock Kranowitz 2005; 177]. As with our eyes, having two ears working in harmony allows us to locate and move towards sounds. Movement, hearing and vision all influence the development of each other and must become very well integrated – moving and doing matter for developing the ability to listen and to understand auditory information. Indoors, sounds bounce back from walls and can get confusing and become overwhelming. Outdoors, the range of sounds to make and learn about is endless and fascinating. Because the adults working with him understand his interest, their reactions feedback to Sheja and intensify his pleasure and attention to this area, especially in the sessions of reciprocal sound-making with Stephen. In this he is also experimenting with cause and effect (when I do this; that happens), exploring ‘what will happen if...?’ and developing a sense of agency and self-efficacy (when I do this; I can make something happen). The opportunity to make big sounds and to be vigorous and energetic through striking things feels good as it stimulates the proprioceptive (body awareness) system in muscles and joints (see the section on Jordan).

The right stuff: materials and resources; emerging pretend play

Like Skye, Sheja has access to some really good materials for his play and development. The pots and pans are very good for feeding his interest in sound and rhythm making, but could also be used in plenty of other ways [see *Toddlers Outdoors*: Siren Films 2010]. The scraps of wood that he uses to play as instruments demonstrate many of the qualities of excellent outdoor resources. They have great potential for object play – ‘what is this thing?’, ‘what can I do with this?’ and ‘what can I make it do?’ They have many qualities and attributes that children might be interested in, such as their texture and shape, how they fit together and how they feel in the hands. They have lots of affordance for use in many ways, such as construction and pattern-making. Sheja has discovered the very satisfying result of hitting two things together to produce sounds. By experimenting with actions he can develop his understanding of cause and effect by asking ‘what happens if...?’ It seems that understanding causation is necessary for the development of the imagination and being able to think about what might be as well as what is [Gopnik 2009]. Two year-olds have enough accumulated experience of causation to be able to predict such outcomes, based on growing theories about how events are linked. Based on lots of concrete, bodily-felt experiences, Sheja is now able to image the future and think in an abstract way.

Because of their open-ended nature, Sheja can harness this rapidly developing imaginative capacity to also use these great resources to represent something that is not actually present. Very significantly, he is seeing and using the objects in two simultaneous ways. He still knows that they are pieces of wood, but now he is using the wood to represent something else: Sheja is asking ‘what can this object become?’. He is using the wood pieces symbolically to stand in as instruments which he can play, and his voice to represent their sounds. Although this capacity can begin before the age of two, this ‘dual representation’ [Medina



2008] is a feature of the third year and a really exciting stage! Dual representation describes our ability to attribute characteristics and meanings to things that don't actually possess them: humans possess a very advanced capacity to make things up that are not there. Although the wood pieces are non-prescribed, they also have characteristics that are suggestive of the real instruments he knows so well, so are perfect for capturing and feeding his interests and make-believe play with an adult who joins the pretence.

As this symbolic ability progresses through the third year it parallels the huge development in using words to represent objects and ideas. Words are the ultimate symbols as they give us the remarkable ability to manipulate ideas in our heads and to communicate ideas without the object or event being present. We use lots of other symbols to think and to communicate (such as numbers, letters, signs, money, maps), so this really is the beginning of something amazing. But just look at how simple the materials are that enable Sheja to do this! It is very important to remember that the foundation of abstract thinking comes from a great deal of experiential, embodied play. It also comes from exposure to simple, open-ended resources that the child is motivated to explore, understand and use in whatever way they need to.

This is a very powerful learning environment. The child can be architect and author of the play possibilities rather than a passive receiver or reader of the provision, so creating their own play and play environment. A positive feedback spiral is set up, described by the idea of 'compound flexibility':

"If an environment offers children plenty of flexibility or adaptability, then that child will develop a sense of flexibility as a person, feeling able and capable of playing more flexibly and within all manner of playful combinations."

[Philip Waters 2005]

Personal and social development

There are many events in this film sequence that demonstrate how being outdoors contributes to emotional and social success. Sheja's growing confidence is related to his clearly high level of well-being. This is rooted in the security he feels from being with attentive, tuned-in and playful adults, especially the safe base of his key person, Stephen. It also comes from the stimulation the outdoors provides that meets his need to discover and analyse the world, and the freedom and support he has to follow his own drives and passions. The ongoing opportunity for movement and action supports his sense of physical self and feeling good in his body.

He also has lots of reason to feel good about himself. The appreciation of his interests by adults makes him feel recognised and valued as a person. At this time of developing interest in being with other children, it is particularly beneficial that what he is good at is an inspiration for other children, including slightly older ones. As a producer of good ideas to imitate and join in with, Sheja will experience feelings of proficiency, leadership, social competence and belonging. This is a powerful context for building self-image and interaction skills, leading to high well-being and happiness [Roberts 2010].

Communication and language development

There are many elements of Sheja's experiences outdoors that support him well to interact, communicate and pick up English naturally and easily in addition to his home language. He has rich resources for play that develop his ability to think symbolically - verbal understanding cannot proceed without the ability to recognise and use symbols [Buckley 2003: 85]. He has the freedom to follow his own agenda, with tuned-in adults who understand and support his motivations. He feels very good about himself because he is relaxed in this environment and gets lots of positive feedback from both adults and other children. He is in a very interesting and stimulating environment with plenty of opportunity to pursue his interests and for sustained attention shared with an adult. His preoccupation with sound specifically supports him to develop the very wide range of listening skills needed to hear, interpret and use sounds, words and language. Because he interacts with children of different ages, he has plenty of provocation to copy sounds and words, and signing by his key person supports his interpretation of words. Sheja's developing body control, body language and careful listening are all helping him while he acquires another language. Sheja's enjoyment of making music and singing outside will also strongly support his acquisition of language (see the notes for Skye). Children are helped to internalise language through music and songs, which is a non-threatening way for additional language learners to learn the majority language [Buckley 2003: 173].

Adult support and interaction

Like Tristan with his Mum, the close relationship Sheja has with Stephen and Gwen is vital for his well-being and his ability to make good use of being outdoors. The sense of self and the confidence he has both come from how well the adults in the settings are tuned in to him. All children should get a personal and positive approach outdoors that is equivalent to Tristan's experiences with his mother (though not identical since practitioners are not the child's parents), so that they feel relaxed and important. This is not easily achieved in a group setting, and there will be many 'behind the scene' actions that have led to this very comfortable situation. Because adults and children spend lots of time outdoors so that quality interactions can emerge, because Stephen is able to spend plenty of focused time with him, or carefully watching his explorations and play, and because staff frequently discuss their observations with others in the team and parents to gain more information and new perspectives, Stephen is able to pick up on the more subtle clues about this child and be quick to understand and respond. Notice the way he imitates and mirrors Sheja's ideas when 'playing' the wood-piece orchestra: copying rather than leading is a powerful strategy for adults to use with children. Deepening understanding helps us to actually see more of what is taking place. This is the key to child-initiated learning and also to effective and satisfying outdoor play for and with two year-olds.

“Fooling around, shaking the order of things and disturbing a fixed way of being’ is a characteristic of play outdoors where ... children have greater freedom to innovate and develop their own rules. Humour and nonsense play ... often thrives outdoors, where there is greater freedom and where adults can be more open to playful romping”

[Helen Tovey 2007: 21]

Different children need different interaction styles from adults. Whilst she is gathering and examining her treasure collection, adult interaction might well

be intrusion for Skye, as it would be while she is playing with Sophie at the water butt. But Sheja often derives great pleasure from the more boisterous and silly interactions with Stephen. Larking about and being physical is such an important part of boy's lives, and the ability to joke and make others laugh is a great social talent for boys [Provine 2000]. Roly-poly play, including gentle tickling, is an important form of play for children under three. Boisterous, physical interactions with others are popular and essential ways for boys to play, and a large amount of research has shown that boys learn much behaviour control through this form of interaction [Brown 2009]. Men have a different way of playing with children and they intuitively understand the need for 'rough and tumble' types of play – something that many women have considerable trouble with. Two year-olds must have plenty of close, caring physical contact, outdoors as well as indoors, and this can be a good way of relating and building feelings of affection and friendship for boys. However, adults' worries about inappropriate touch and children hurting each other has led to children not getting enough of this essential input. Policies around physical play and touch must be carefully thought through with the child's needs at the core of decisions [Carlson 2006].

Prompts for developing practice

Organisation

- Stephen clearly enjoys the times when he can focus his attention on Sheja, but there are several other children playing outdoors at the same time. In outdoor play, the adults have several roles that need to be shared and juggled. Team work and a commitment to enabling each other to have time for this level of interaction are necessary, so that overall supervision is not compromised. This is not easy to achieve – could you make this happen in your setting?
- Mixed age play can be highly beneficial for both younger and older children, and the outdoors often seems to support this interaction, perhaps because the needs of children are so well met in the outdoor environment. Having closely watched both Sheja and Skye, discuss the benefits and organisational issues for your provision.

Environment

- While watching the film of Sheja, focus on the materials he uses and consider what makes them good resources for two year-old play outdoors. When there are abundant supplies of simple stuff; when children can do what they need with them; and when they are open to emerging symbolic (pretend) and interactive play, they have high play value. Use this to review the resources provided outdoors in your setting to ensure their value for play and development.
- Extend your discussions to also consider how well the outdoor resources are organised, so as to make them accessible and easy to use for adults and well presented to children. Does the flexibility of the outdoor space itself support flexible use of these resources?

Adults

- In this film, we repeatedly see the benefits of adults really knowing the child well – this is brought about in these settings by a key person approach. Use the □ sequences to debate how adults can share their knowledge about children between key groups and with parents to maximise the ways they can support all children, especially in a bilingual situation [Siraj-Blatchford & Clarke 2000: chapter 3].
- Noticing the subtle details of young children's play and recognising their significance ensures that responses more appropriate and effective, and makes the job very rewarding. Discuss what this film has made you more aware of or interested in about two year-old play outdoors.

Parents

- It is really important for the practitioners to find out and share lots of information about Sheja's experiences with his family in order to know how to interpret his play behaviour and best support him, including exchanging knowledge about his growing vocabularies in both languages. The words he is using at home can then be used in parallel with English words both indoors and outside. Share ideas for how this can be done in a busy setting with busy parents.
- Men are often more comfortable with physical and silly play and more inclined to play in this way to meet the rough & tumble and 'dizzy' play needs of children, especially boys. Do your parents (including fathers) understand this need and what are their views about touch and 'rough' play?



Laila

2 years 10 months

Things to notice and understand

The special nature of the outdoors

Laila looks relaxed and enlivened in this film: she clearly loves being outdoors at this nursery and is interested in natural things. The natural world has the remarkable ability to make us feel calm and stimulated at the same time. Because we evolved in natural, outdoor places, nature modulates the human mind into an alert, ready and interested state [Kahn & Kellert 2002]. We can see Laila enjoying the lovely feel of the wind on her face, hair and clothes and noticing its effects on the surrounding plants – and it motivates her to share her delight with Carol. The weather also brings a great deal of sensation, effect and interest, and this is a compelling reason to ensure that young children have plenty of time outdoors, every day throughout the year as required by the Early Years Foundation Stage. Nature brings lots of richness to this outdoor space, in terms of the variety of spaces available (from open areas to lots of nooks and crannies), the surfaces to move on (from firm pathways to soft grass to wobbly stepping stones) and the materials to interact with (such as sticks and flowers). It provides a 'generous' environment which is very responsive to the individual 'unique' child [White 2011] and therefore a place that differentiates well, accommodating a wide range of personalities, abilities and interests. Here we can really see the value of thinking of outdoor provision that is appropriate for two year-olds as a 'nursery garden' rather than a 'playground'. A small area of flat, rubber-covered, risk-averse surface is a very poor space by comparison for any two year-old's developmental needs.

“People also have a sense for the touch of our hands and feet. If modern man is forced to walk on flat floors as they were planned thoughtlessly in designer's offices, estranged from man's age old relationship of contact to earth, a decisive part of man withers and dies. The unseen floor becomes a symphony, a melody for the feet and brings back natural vibrations to man. It is good to walk on uneven floors and regain our human balance.”

Friedrich Hundertwasser (1991)

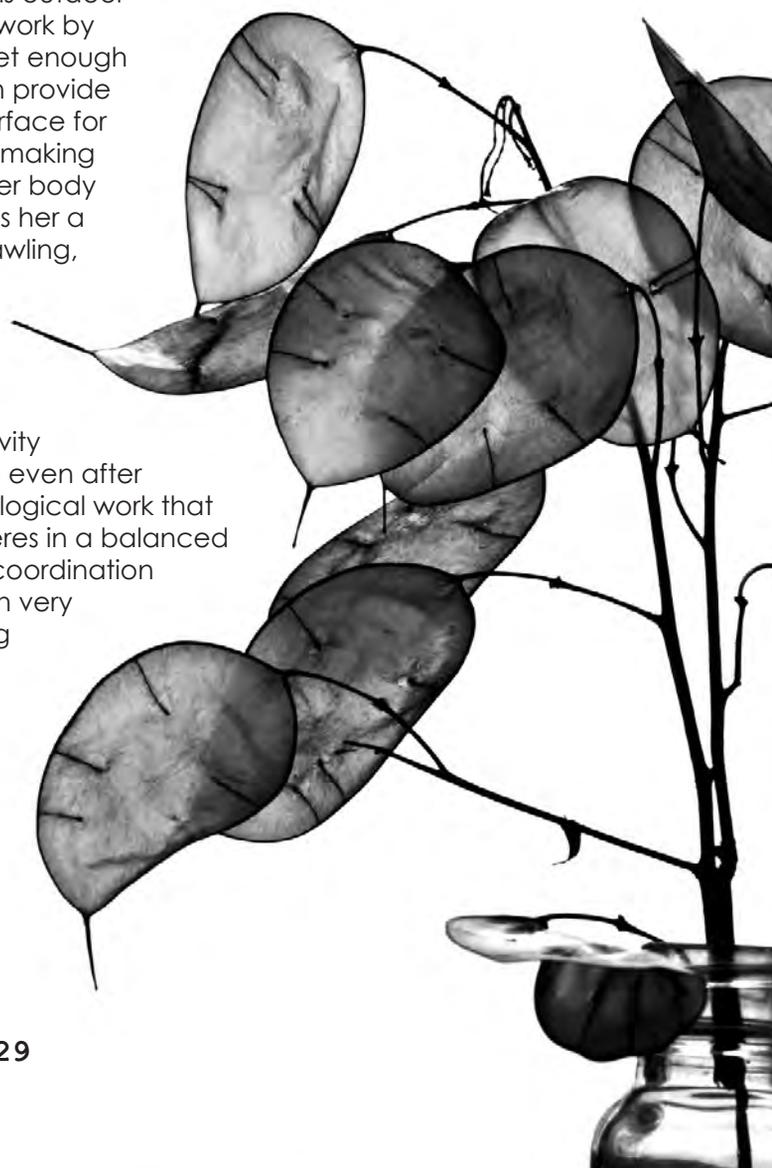
Laila experiences a strong motivation to be active and to move in this environment. She really enjoys and benefits from the physical challenges, and is not daunted by bumpy or difficult ground. Children mastering locomotion and coordination should have opportunities to move in many different ways and a range of surfaces to move on that demand body control, attention and effort. These could include uneven and less predictable surfaces, surfaces with gradients and a variety of levels, and non-resistant surfaces that 'give' underfoot [White 2009]. Two year-olds need to clamber and master the art of going up and down steps and slopes. As we see with Laila, they also revel in being higher up, where they get a different perspective and a sense of power. Motor control and coordination are so important for life functioning and successful learning that we must find a good balance between these explorations and our tolerance for bumps, scrapes and bruises.

Natural light and the higher oxygen levels outside contribute too to Laila's feelings

of well-being and alertness. Sunlight stimulates production of serotonin in the brain, making us feel happy, and the blue wavelengths in it modulate the sleep-wake cycle, helping us to sleep well at night and stay alert in the daytime. Of particular importance at the moment is the role of sunlight in helping the body to make enough vitamin D to grow strong bones, since health research shows that children in the UK commonly have suboptimal levels, with increasing prevalence of disorders linked to its deficiency. Low sunlight levels for much of the year (winter, spring and our commonly cloudy skies at other times) are the reason for the evolution of fair skin in northern countries. For individuals with pigmented skin, exposure time or frequency needs to be increased 2- to 10-fold to get the same vitamin D synthesis as fair skinned individuals, and sunscreen with a SPF of 15 or over blocks more than 99% of dermal synthesis [Pearce & Cheetham 2010]. The researchers propose that by taking the safe sun message too far (coupled with our increasingly indoor lifestyles) we are exposing children to a different kind of health risk. This suggests that, while sunhats and sun protection must be carefully considered to protect the very delicate skin of young children, especially during sunny weather, we should also ensure that children actually get access to sufficient sunlight all through the year (for suitable advice on this issue, contact your local health professionals).

The role of movement and physicality

Laila is working hard on developing her sense of her body (body awareness) and her balance in gravity (vestibular sense). Notice how she feels herself going off balance, saying 'Oh dear', just before she wobbles while standing at the log with Carol. Notice all the features in this outdoor environment that are helping her with this work by offering challenge while enabling her to get enough support. The pathways around the garden provide her with a firm, smooth and predictable surface for walking. The grass is more of a challenge, making a different demand on the way she uses her body and needing more attention, but also gives her a good surface for crawling. Whilst she is crawling, she feels the texture and temperature of the grass on her hands and knees. She also has independence from the need for adult support that is likely to give her good feelings. Crawling is an enormously important developmental activity that young children should continue doing even after they become walkers. It does deep neurological work that results in activation of both brain hemispheres in a balanced way, strong connection across them and coordination of the body, and these have implications in very many aspects of development, functioning and learning [Hannaford 1995]. Reaching out also helps to develop Laila's body sense and arm/eye coordination. Wide, shallow steps support her level of physical readiness to work on the required eye/foot coordination and motor control - balance and body awareness are important in this. The double motivation



of joining in with what others are doing and the pleasure of being high up (see the notes on Skye) gives her plenty of motivation. It is lovely to watch how Carol's use of a relevant rhyme here brings an immediate and enthusiastic response from Laila. Notice how much more of herself she uses to dance and stamp and how alive her eyes become, she also seems to make her own verbal contribution saying, "all fall down". As previously discussed, songs and rhymes are a crucial part of two year-old life and practitioners need to be able to draw on a wide repertoire whenever the right moment occurs.

A particularly inclusive feature for Laila in this garden is the range of well-situated surfaces that are at just the right height to support her balance and locomotion, such as the bench, the adult lap and the tree-stump 'tables'. In an outdoor space for babies who are pulling upright and cruising, and for older children with physical support needs, having plenty of cruising-height surfaces is vital: in Laila's case, she can stand independently with a hand free for manipulation and join in with other children's play.

The right stuff: materials and resources; sensory development

The natural world provides a vast range of highly sensory and appropriate materials for two year-old exploration and play. Laila learns more every time she goes outside, building up her knowledge and understanding of the world. Carol and the other adults can also introduce her to new possibilities every day – knowing her well, they can match these to her interests. Young children are very aware of the miniscule, drawing adults to see things again that they have been overlooking: ants scurrying on pathways, rain water running into a drain and the delicacy of moss growing on a brick wall. This is one of the great pleasures of working with two year-olds, at their pace and on their agenda. It is really important that we slow down and properly attend to the things two year-olds want to share with us: what have they really noticed; why did it capture their interest and what thinking does this tell us they are doing? Every experience that children of this age have is deep, complex and significant for the child. Appreciation of this, and striving to understand the detail of what is happening, results in pleasure and satisfaction for both the child and the adult. The best learning happens when the educators consider themselves as co-researchers with the children, helping them to discover more of what interests them and continuing to learn alongside the children – both about the world and about how young children think and develop.

The natural materials we see Laila use in this sequence are excellent for supporting the development of movement and control in her fingers and hands. She receives, handles, positions and arranges flowers with the delicate movement and fine control required for fragile objects, choosing, placing and organising them whilst sensing and verbalising their qualities. A good outdoor environment for this age has abundant quantities of safe, pickable and collectable flowers, leaves and other plant parts. Laila may well be more aware of the smells of these materials and in the outdoor space generally, because this sense diminishes through childhood as vision matures, taking up a substantial portion of the brain area devoted to smell in babies and other mammals.

Containers to gather their finds into, for filling and moving around the garden respond to many of the schematic interests of two year-olds. We can see that this is very helpful for Laila as she has one hand occupied for balance much of the time. Another very good natural resource is the stick, the primary child's toy for generations:

“When children pretend with sticks, they cultivate their creativity and develop their imagination. They explore as they search outdoors for just the right one. They are the original building blocks for creative play. Sticks also promote free play - the freedom to invent and discover. They encourage playing outside instead of inside. Sticks are all around us; they are natural and free. Sticks are not only possibly the oldest toy, they’re possibly the best!”

The National Toy Hall of Fame, USA

Although practitioners and parents have a very realistic and understandable concern about germs and hygiene when young children are exploring the outdoor world, this needs to be balanced with the value of exposure to the normal bacteria that live in every part of our environment. Medical opinion seems to be growing in support of the ‘hygiene hypothesis’, first proposed in the 1980’s, which suggests that early childhood exposure to bacteria in the environment ‘primes’ the immune system to prevent allergies [Davies 2009]. The young child may need such exposure in order for their developing immune system to learn how to protect the body without over-reacting: some germs do appear to be good for us. Researchers at Bristol University and UCL have also found that a type of ‘friendly’ bacteria found in soil triggers serotonin production in the brain with an antidepressant effect on laboratory mice, and commented, “these studies leave us wondering if we shouldn’t all be spending more time playing in the dirt” [Paddock 2007]. Since humans evolved in the outdoor environment, it is likely that our bodies learned to live with many of the germs that co-exist with us, and that two year olds’ explorations assists in building a well-functioning immune system. Along with many other health benefits, play outdoors may help to protect against allergies and other immune deficiencies.

Personal and social development

Laila appears to be relaxed, engaged and happy – her levels of well-being and involvement are high in this place, with Carol’s sensitive support and in the company of other children who interest her [Lavers 1994]. This comes from the stimulation the outdoors provides that meets her desire to discover and interact with the world, and the combination of freedom and support she has to follow her own interests which generates feelings of motivation and control. Like Sheja, the opportunities for movement and action nourish her sense of physical self and feeling good in her body. There are opportunities for her to feel effective, adventurous and powerful, such as pulling the ribbon to move the branch and striking the wind-chimes with a stick as the others are doing, and especially joining the other girls ‘up high’ on the platform.

As well as the great benefits of doing what interesting others are doing, watching other children is in itself important behaviour. She can learn about what children do and how they behave. ‘Looking on’ often precedes ‘joining in’, and is a social strategy that children frequently use. But watching movement and action has a much deeper physiological function, recently receiving much scientific attention due to the discovery of ‘mirror neurons’ [Rizzolatti & Sinigaglia 2008]. These neurons





fire when we watch someone else performing an action, allowing us to share the experience in our mind – we actually feel the action and the emotion, providing the roots of empathy. This might explain how body language and gesture help us to communicate, and why humans are so good at understanding the feelings and motives of others. Although Laila might still be too young to understand that other people have separate thoughts and feelings to her (the so called 'theory of mind'), by being in a place where she can take time to watch the behaviour and play of other children she is making very good progress towards this milestone in psychological understanding.

Adult support and interaction; communication and language development

Barriers that block access for children with disabilities are often not physical – they can easily be disabled by the culture of the setting and society they live and play in [Lindon 2006: 173]. Lower expectations, attitudes that limit, and anxiety about risk, harm and failure can all limit what a child is able to get from an environment and all its potential affordance. Notice all the ways Carole enables Laila to be autonomous, gently pushes her physical skills and models language in meaningful contexts.

Carol helps Laila to get the full benefit of being outdoors in this space, enabling her to access experiences rather than removing them for safety or health reasons. It is necessary to work closely with parents to ensure that children with any kind of special support need receive their entitlement to long periods of daily outdoor play, throughout the year. She constantly checks how she provides her support, so that Laila takes charge and feels capable and adventurous: these are important messages. At the beginning of the sequence, notice how Carol helps Laila to become balanced so that she takes some independent steps to the bench.

Movement is the child's first and most enduring language, and is also the root of developing verbal language. Carol reads Laila's body and hand language, is tuned into what she means by them and understands her desires. Body language and gesture support language access and are crucial in helping to communicate and be understood [Goldin-Meadow 2003], and in the outdoors children can use actions and their whole body to express and communicate. Movement also encourages children to use their voice, as these are linked in the brain. We have already seen with Tristan, Skye and Sheja that gesture (especially pointing), songs, dance and action support emerging verbal language, and here we can see examples of how language and movement support each other when Laila dances (see section on movement above) and when she says "up" as she pulls herself up to stand at Carol's lap. Giving children the language of movement also actually helps with motor planning (praxis) [MacKintyre & McVitty 2004].

Prompts for developing practice

Organisation

- It is important that children have comfortable places to sit so that they can relax, rest and watch other children at play. Adults also need well-sited and comfortable seats so that they can closely observe children's play, be readily visible and available to the playing child when needed, and spend intimate, cosy time together. Are there enough comfortable places, are they in the right spots and could there be more?
- Practitioners and parents will be very aware of the need to protect very young children from the dangers of skin damage and dehydration from strong sunshine and hot weather, but may not know about the need for sunlight and the alarming increase in disorders linked to Vitamin D deficiency in the UK. How can these two concerns be suitably balanced for the best health of your children?

Environment

- The natural world is such a rich and important aspect of being outdoors, but nature has a very limited presence in so many early years outdoor spaces, and is often seen as hazardous and unsuitable for young children. Use your thoughts from watching all the children in this film to generate ideas for increasing 'everyday' access to nature for your two year-olds.
- Laila's explorations show the value of unobstructed space, pathways, steps, uneven ground and surfaces at 'cruising height' for children who are developing their loco-motor and body-control skills. The tree trunk tables make excellent 'doing' tables at just the right height for all two year-olds. How can you make these elements (or something equivalent) available in your outdoor space?

Adults

- Like any other two year-old, children with disabilities are not helped by excessive protection, however well-intentioned. Use this film sequence to discuss and reflect upon how support is given to children outdoors in your setting.
- Children learn best when their educators are learning with them and they see themselves as continuing to learn alongside children. What aspects of child development has this film prompted you to learn more about?

Parents

- Laila clearly benefits from being able to move around the outdoor space on all the different surfaces. This is very important to her well-being and neurological development, but she risks scrapes and cuts. How do we balance our fear of bumps and bruises with the developmental value of such explorations?
- Current culture in the UK has over-focused our attention on the vulnerability of children, to the extent that vital experiences are often being denied to them in case they get hurt. How can we help parents share a view of the young child as a competent learner in the context of their real vulnerability? Use the film sequences to develop your opinions and ability to explain this to parents.

Erin

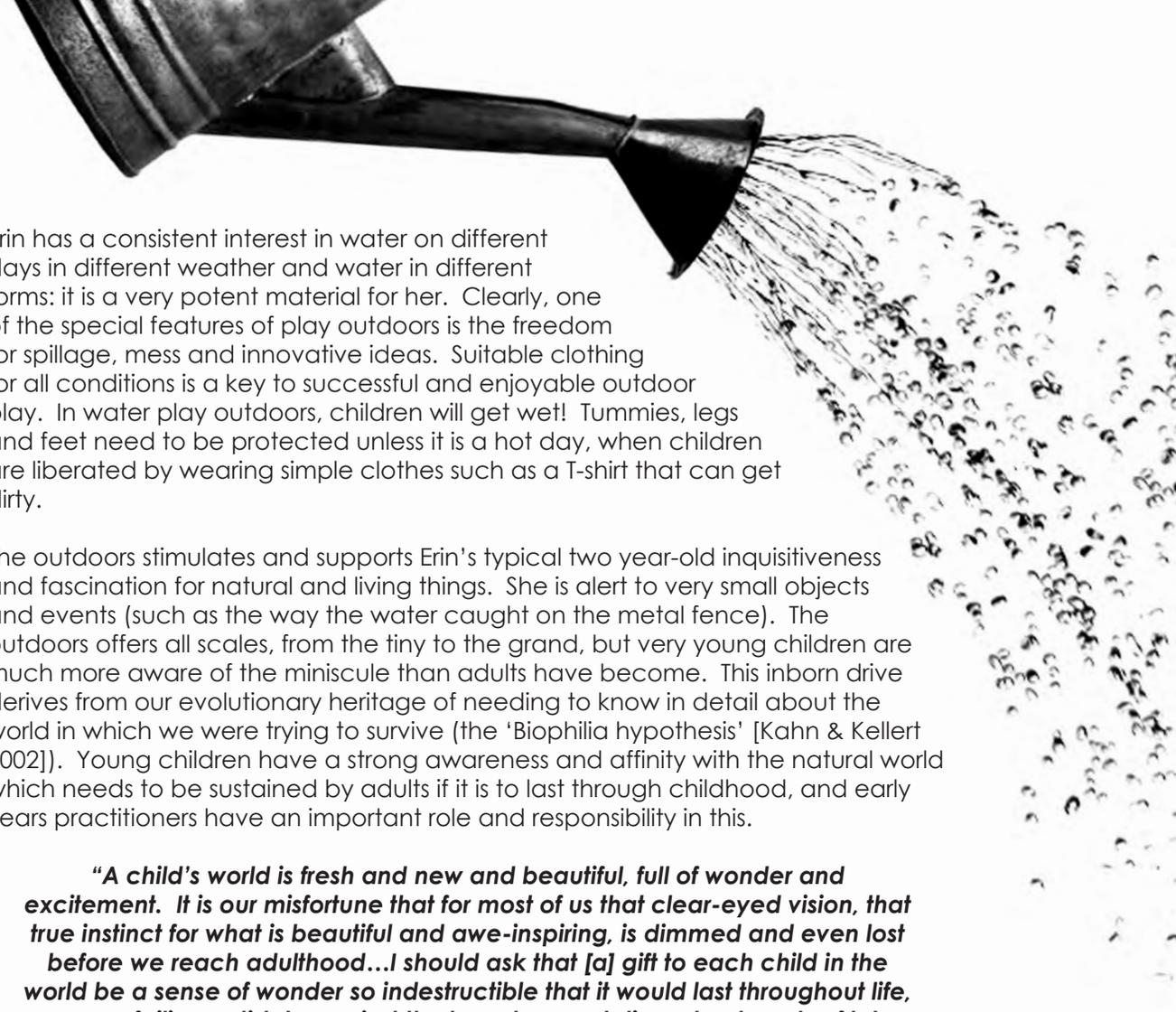
2 years 11 months

Things to notice and understand

The special nature of the outdoors

Watching Erin's explorations with water in the outdoor environment we can see the considerable difference in stimulus, possibility and opportunity between the indoors and the outdoors. This film sequence makes a clear case for the role of outdoor provision in complementing and extending the provision that can be made indoors. Educators have provided sand and water indoors for many years, because of their wonderful sensory properties and their great value as tools for learning and development in the early years. However, the way young children really want to explore and interact with these materials must then be contained and restrained because of management issues such as spillage and mess. They can do far more with water and sand outdoors and interact with or use them in lots more ways; that better meet the active, hands-on and embodied way two year-olds need to learn. Water and sand are the best materials for outdoor play and are essential ingredients in any satisfying and effective outdoor environment for two year-olds. And the more abundant these materials are, provided in several different ways, the richer the emotional and learning environment will be. In the film, for example, sand and water are provided in a builder's tray at 'table height' so that children can stand to work and are in a circle as a group, which encourages ideas to be shared. Sand should also be available in large quantities in a sand area that several children can be in together and can dig deeply in. Water should also be made available as a running supply so that its movement qualities stimulate a different kind of exploration [White 2008].

In the UK climate, rain is ubiquitous and constantly affects our lives, changing how the day feels, what the environment is like and what we can do. It's no wonder that two year-olds are strongly drawn to this remarkable stuff and need to feel it, touch it, interact with it and use it as much as they can. Rain itself is a lovely thing, and most young children love to experience it with their whole body and whole self – catching raindrops on your tongue and splashing in puddles could really be considered a birthright for any child living in Britain or Ireland! It is adults (especially women) who are uncomfortable in rain, preferring to keep out of it. For young children, all weather is good weather - especially rain. Staying out in the rain is full of experience and potential; for example, being under a tarpaulin as the rain drums on it is quite an emotive sensation (remember the feel of being in a caravan in heavy rain). As the Scandinavians are famous for saying, there is no such thing as bad weather, only bad clothing. Seeing rain as the rich resource that it actually is, rather than as a hindrance to outdoor play, will greatly help the development of outdoor play all through the year. Rain water in the outdoor space can lead to many possible investigations as it makes surfaces wet, runs down windows and collects in hollows. In addition, water play is a great way to make the most of a rainy day, giving the child's explorations more sense and meaning [for more on water and rain play outdoors see White 2008]. Watching the sequence of Erin's water play in the rain gives insight into the value of staying out in the rain for two year-olds.



Erin has a consistent interest in water on different days in different weather and water in different forms: it is a very potent material for her. Clearly, one of the special features of play outdoors is the freedom for spillage, mess and innovative ideas. Suitable clothing for all conditions is a key to successful and enjoyable outdoor play. In water play outdoors, children will get wet! Tummies, legs and feet need to be protected unless it is a hot day, when children are liberated by wearing simple clothes such as a T-shirt that can get dirty.

The outdoors stimulates and supports Erin's typical two year-old inquisitiveness and fascination for natural and living things. She is alert to very small objects and events (such as the way the water caught on the metal fence). The outdoors offers all scales, from the tiny to the grand, but very young children are much more aware of the miniscule than adults have become. This inborn drive derives from our evolutionary heritage of needing to know in detail about the world in which we were trying to survive (the 'Biophilia hypothesis' [Kahn & Kellert 2002]). Young children have a strong awareness and affinity with the natural world which needs to be sustained by adults if it is to last through childhood, and early years practitioners have an important role and responsibility in this.

"A child's world is fresh and new and beautiful, full of wonder and excitement. It is our misfortune that for most of us that clear-eyed vision, that true instinct for what is beautiful and awe-inspiring, is dimmed and even lost before we reach adulthood...I should ask that [a] gift to each child in the world be a sense of wonder so indestructible that it would last throughout life, as an unfailing antidote against the boredom and disenchantments of later years, the sterile preoccupation with things that are artificial, the alienation from the sources of our strength."

[Rachel Carson 1998]

The outdoors also has the powerful ability to develop the two year-old child's remarkable emerging ability for imaginative thought. For Erin, the real and the imaginative worlds are wrapped up together as she uses her interest in spiders as the basis of her story making. She is entering a stage in childhood where the imaginary is as real as the physical world: this is where our human capacity for creativity is built [Gopnik 2009]. Research into children's den play shows that small spaces that create a feeling of enclosure and refuge are conducive to pretend play, and that enclosures that have a ceiling effect (leaf canopy, roof etc.) and smaller scale generate more intimate and domestic themes [Kirkby 1989]. We can see the heady combination of being outdoors in the rain and being inside the little wooden house working to place Erin's mind in such a wonderful place of connected curiosity and fantasy [Paley 2004].

What matters to two year-olds: schemas

"Through play ... he adds to his knowledge of the world. No experimental scientist has a greater thirst for new facts than an ordinary, healthy, active child."

[Susan Isaacs 1945]

When children are enabled and encouraged to follow their own interests, they reveal some deep thinking and strong dispositions for learning. Young children

have some very important questions that they constantly seek to explore, and like the scientists that they so clearly are, they ask their questions at every possible opportunity, construct 'theories' based on the evidence they have gathered and seek to prove and test these theories by experiment, many times and in lots of ways. Through this process they are constantly constructing their abilities to perceive and abilities to think, as well as their ideas and theories about how things are in the world. It is very important that adults living and working with two year-olds are tuned into the questions they need to explore. Not only does this help intellectual development in the best way, it also strongly supports their emotional well-being and reduces frustration and conflict.

"The thirst for understanding springs from the child's deepest emotional needs ... [it is] a veritable passion."
(Susan Isaacs 1932)

In water play children explore and represent their interests in materials, action, form and space through manipulating and moving objects and themselves. Erin seems to be deeply interested in how materials can be transferred between vessels, and water in the outdoor environment makes the perfect medium for her enquiries. Through repeatedly *transferring* in lots of different ways between lots of different containers, she can deepen bodily-felt meanings and intuitive understandings of such things as size, shape, containment and capacity. As they play with water outdoors, without fear of spills and mess, other children might also explore: *enclosure or inside and outside* with containers (filling, overflowing and emptying); how water moves *up, down, along* (drips, arcs, pathways); *rotation* and going round (taps and rollers); *transporting* in buckets (movement, weight, distance); *going through* and *crossing boundaries* (squirting through holes); *connecting* tubes and pipes in different ways and how water moves in them; mixing and *transforming* [Arnold 2010].

The important components in this play are that the child is in control (it is child initiated and child led); the materials and resources are open-ended, can be manipulated and can be moved around; there are a variety of ways of doing things; and the children are well supported by adults who are tuned-in to the idea of schemas.

The right stuff: materials and resources; contexts for emerging pretend play

Water is a very important material in both the physical and human world, and Erin will have had very many experiences with water since babyhood. It is a deeply interesting material that occurs in lots of different ways in the outdoors and behaves in a wide range of fascinating ways. Watching the children at work in the film (remember Tristan with his jet spray and Jordan with his car wash), we can see what a magnificent learning material it is, especially in a diverse and liberated outdoor environment where it has phenomenal 'affordance' [Brown 2003] for these children. It can be collected, poured, transferred, moved, scooped, pushed, painted, spread, sprinkled, squirted, dribbled, swept, stamped in and mixed with other materials. Two year-olds might want to explore the ways water can be collected, how and where puddles collect, how



water moves and spreads, how it can move other things, the effects of pouring, how it transforms dry surfaces (but not wet ones), the idea of 'wetness', what happens when it is poured onto sand and soil, and what happens when things are added to it – the list of intriguing questions really is endless, especially outdoors! They want to know what water is, what it does, what it does to them and what they can do with it or make it do. Erin is very absorbed and focused in her transferring work and does not want to respond to the other child's request to join her. Later there is play in a social group where ideas are inspired and passed around. Notice also the intense concentration of the child in the helmet as he mixes and combines.

The resources that best support water play outdoors respond to children's schematic interests (see above). Two year-olds particularly need lots of containers of all sizes, from small cups and jugs to large and heavy watering cans and buckets. Simple resources that are open to use and can easily represent something else offer the most (such as the fabulous spider-web knitting Erin does with the pair of paint brushes, showing incredible thinking and connection-making). Resources from the world of adults at home, such as kitchen utensils, are also potent for this age group, giving them access to imitative and pretend imaginary play.

The transformation of materials by mixing is a very interesting area for educators to consider. As two year-olds find out how they can change the physical properties, consistency and behaviour of sand/soil and water through combining them, they act as scientists or alchemists making 'concoctions' [White 2008: 14]. The act of mixing might be energetic or gently therapeutic, but feelings of agency and being powerful are also likely in this situation. However, this very commonly becomes the starting point for making 'food', even for very young two year-olds, and the child also takes the role of cook or chef. It is as if the act of transforming physically supports the mind to make mental transformations – and it could also be that the strong emotional context further supports this. The two transformations may be linked – being able to *physically* transform materials might lead to the *mental* transformations involved in symbolic thinking. The use of language to express their thoughts also supports thinking and idea-sharing, sustaining the imaginary context.

Transformations of all kinds happen all the time in the outdoor environment [Tovey 2007]. Outdoor play using open materials and loose parts helps children to make connections and to develop 'possibility thinking' [Garrick in White 2011]. In this relaxed, child-led, adult-supported situation, sand and water are just the right stuff, and the special nature of the outdoors creates just the right conditions, for some very significant intellectual development.

Personal and social development

Erin's understanding of the world is growing in parallel with the sophistication of her pretend and fantasy play. Many play researchers feel that pretend play is a mechanism for making sense of the world, and for being able to control and direct events in an unpredictable real world where the child has little command. Here we see another facet or step in two year-old's pretend play, where Erin is story making and leading the ideas and events in the fantasy. Like music, story helps with the brain's capacity to organise information. "Where story really makes a difference is in the way it gives toddlers a handle on time. For a child trying to understand herself as an entity with a past, a present and a future, keeping track of what happened, and when, must be a formidable challenge. Story gives her a

structure in which she can order these ideas in sequence" [Ferryhough 2008: 169]. Psychologists are now wondering whether our ability to construct stories about non-present events might have been evolutionarily driven by our early ancestors' need to understand words that referred to events and situations that were not visible (such as a future hunting trip or the location of food some distance away). As the capacity for language emerged, so did the need to imagine the scene and events that they were telling about. "For the modern child, entering into a community of language makes the same demands. To get on in the world, the child, like the novelist and the scientist, has to build her models and see how they run" [Ferryhough 2008: 180]. And the older two year-old enters enthusiastically into both worlds - of language and of the imagination.

"In fantasy, she is in charge, powerful in the world she's created"

Erin not only leads the story, she skilfully invites others to join in the fantasy: "can you see him?" As we saw with Sheja, taking the role of leader in play ideas feels really good. In addition, children with good play ideas are interesting to play with and tend to be popular with other children, especially when they are older; leading to feelings of value, belonging and happiness. "Co-operation [i.e. self regulation] and being able to share an imaginary world are central to understanding why, as children reach four years olds, they find it easier that they did as two year-olds to make and keep friends" [Dunn 2004: 20].

Communication and language development

Erin's language development helps her to look very closely, describe and think about what she sees, such as when she shares her fascination with the dripping water with the adult: "look what it's doing!"; "it goes down there"; "there's another one". Vygotsky believed that language presents the shared experience necessary for building cognitive development and that talking is needed to clarify ideas [Mooney 2000: 89]. 'Sustained, shared thinking' through shared looking, attention and talking is a highly successful strategy for learning, and she is able to think further by verbalising and sharing her thoughts [Siraj-Blatchford et al 2002].

Erin's sentences are complex and her vocabulary is impressive. Between the ages of 2 ½ and 4 ½ children acquire on average between two and four new words daily, and in the third year this includes adjectives and prepositions. Research has shown that one of the most significant factors influencing the size of children's vocabularies at these stages is the language that they hear from adults in the environment [Buckley 2003: 90]. Erin can also use language to have more control of her life since she can express her thoughts more clearly and adults understand her better. She is very good at using language socially, joining in with others and even giving them instructions. She has a delightful way of playing with intonation when she says, "come on little woodmice" and, "there's another one" that engages others in her interest. She also knows about using voice for dramatic purposes in story-telling, such as whispering in the spider story. It is well worth reflecting on how both being outdoors for long periods every day, and the relaxed, unstructured and child-led approach seen in the film sequence have contributed to such high levels of competence. Children's talk when they are outside is frequently lively and imaginative as well as curious and questioning [Chilvers 2006]. It is not uncommon to witness much higher levels in all sorts of competencies in play outdoors. When children's language skills are assessed indoors, many of these abilities and levels of competence are not observed. It is crucial, not only to make the best use of the outdoor environment for supporting language development, but also to ensure that assessments of children's true competencies are made.

Adult support and interaction

Throughout this film, we see practitioners being attentive to what the children are doing and striving to understand what is important to them before they decide on how to respond. Effective child-led practice is driven by three things: being able to really see (noticing the detail); being able to deeply understand what we see (recognising its significance); and knowing what to do with this understanding (responding thoughtfully and carefully). As these notes hope to show, deepening understanding (such as knowing about schemas and movement) helps us to actually see more of what is taking place – a very satisfying feedback loop! We also see several different interaction styles and we can reflect upon how well these match to the different personalities of the children and to the moment: adults need to be both sensitive and flexible.

Sustained shared thinking is often considered to be about verbal interactions, but the way the practitioner supports Erin's interest in collecting rain water is a nice example of how the adult can scaffold children's thinking through providing an idea and technique with physical support, involving just a little language: Erin later tries the technique for herself. Here Erin is in what Vygotsky termed the 'zone of proximal development', where the educator 'scaffolds' the child's thinking to move just beyond their current level of ability. The child on the edge of learning a new concept can benefit from interaction with an adult or peer. They can be helped to 'reach' a new concept or skill by being given supporting information, not only by an educator but also by other children who already possess the desired skill [Mooney 2000: 83].

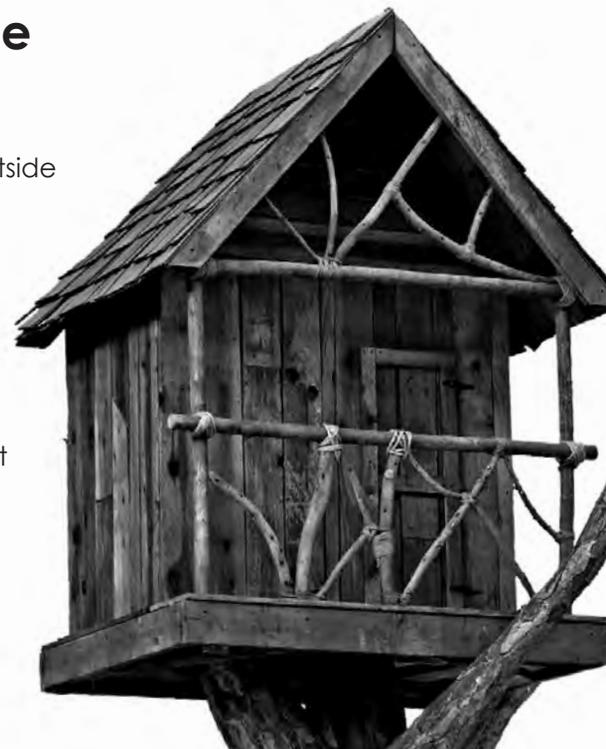
There are many examples of good conversations between children and adults, where we see the adult listening well and giving lots of space for the child's ideas. Two year-olds need lots of time and spaces in a conversation for their next thoughts to emerge and be turned into spoken words. The adult's role here is as an interested listener and responder, rather than a director. Often the practitioner in the film comments and repeats instead of asking questions or offering ideas, so that the child has time for their own thinking. Slowness, stillness and pauses are valuable strategies for adults working with two year-olds [Sightlines 2008]. In the spider story, we also see the adult engaged in a gentle game of 'ping-pong', using her presence and her comments to keep the ball in the child's court, so keeping her ideas flowing [Chilvers 2006: 6].

Prompts for developing practice

Organisation

- Two year-olds need plenty of uninterrupted time outside so that there is time for good quality explorations and interactions to develop and for connections in learning to be made. What elements of your routine get in the way of children having extensive and uninterrupted lengths of time outdoors? How could these be adjusted to benefit the children?

- As we can see with Erin, one of the very first steps in making good use of the outdoors, especially staying out



in the rain or cold, is to have appropriate clothing to keep both children and adults comfortable and safe in the different weather conditions we have through the year. Good clothing protects without getting in the way of what children want to do. How could your setting organise so that suitable clothing is always available, easy to store and use, and can be cleaned and dried?

Environment

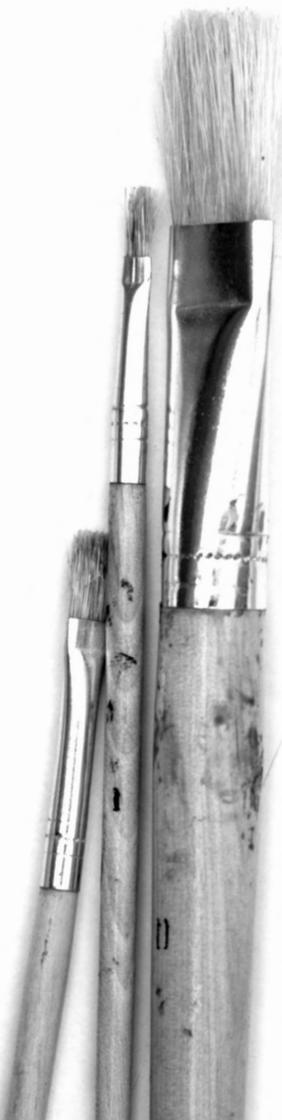
- ❑ Water is an essential element for rich outdoor play, from simple container and mixing play to more adventurous running water and rain play. For good water play outdoors, running water from a tap or hose is highly beneficial. Good risk management to enable and a rigorous routine for hand-washing should also be established (especially before eating). What could you do in your setting? [For ideas and advice see White 2008].
- ❑ Outdoor environments in settings for young children need to have lots of nooks and crannies and materials that can be used to make them. What could be done in your outdoor environment to make existing corners, bushes and small spaces more available for play, and what resources could you provide for children to make their own hidey holes and look outs?

Adults

- ❑ Child-led learning is about offering a generous and appropriate environment so that children can make choices. Part of this involves bringing their attention to things that connect to their interests and supporting them to build their thinking from these starting points. How could more opportunity be available in your setting for the observation that is required for this level of knowledge about individuals, both outdoors and indoors? Does observation need a higher 'status' as part of the adult role? Would better places for observation outdoors (such as well-placed seats) make this more successful?
- ❑ Use several viewings of the film to analyse and discuss adult interaction styles in the sequences. Notice that often the adult follows and copies rather than leading or directing, and how the child benefits from simply having an adult presence (companion). Notice too how the adults show 'slowness' – that is, patience and understanding of just how important it is to – a) go at the child's pace, b) realise the importance of repetition and return, and c) not to push the child forward too fast to meet the next developmental goal.

Parents

- ❑ Sharing thinking about schemas with parents is an excellent way to build real partnership between home and setting. Parents are a rich source of knowledge and understanding about their child and will relate to this idea very easily. How can you share what happens in outdoor play?
- ❑ Staying out in the rain and getting clothes dirty can be problem areas with outdoor play for some parents. Clothing needs to be suitable for what children will do, to not present any hazards and to be easily cleaned so that getting messy is not a barrier. How can parents be helped to understand the benefits of outdoor play in all conditions, so that children are more likely to arrive in appropriate clothing?



Jordan

3 years

Things to notice and understand

The special nature of the outdoors

“The average boy’s gifts are wrapped in high activity, impulsivity and physicality – boy power – and the value of these gifts depends on the teacher, the boy and the moment. These qualities serve boys beautifully in the playground, where there is room and respect for bold strokes of action and impulse.”

Dan Kindlon & Michael Thompson (2000)

Once again we can become aware of how the outdoor environment is enabling and enriching deeply satisfying play for this child at the end of his third year. Being outdoors offers a wonderful sense of liberation, of freedom and of open possibility. Watch how the boys respond in the game of ‘Simon says’. When Jordan inspires them with his exciting ideas of turning wheels and motorbike imagery, they all take off running around the outdoor area. Boys are enthusiastic movers and frequently need to respond in a whole-bodied and active way to such a prompt: in an outdoor context, this is not just acceptable but can be encouraged. Such liberation contributes to the very common situation that behaviour is so much more positive outside, with far fewer behaviour issues (so long as the outdoor environment is rich and outdoor play well supported by adults) [Bilton 2010 chapter 6]. Even though the game has rules, there is plenty of flexibility in the way it is run. Jordan and his peers experience freedoms to be active, boisterous, noisy, impulsive and inventive (notice the sound effects that boys so often bring into their play). Being able to interact in large, active groups responds very well to the way boys prefer to play. Mud and mess is not a problem. Experiences are holistic as the space and open-ended, mobile materials do their work. A real ‘car’ wash, using water without any spillage issues, supports emerging role play and intensifies the experience.

Some interesting work in the field of environmental psychology has suggested that people think in different ways depending on the height of the ceiling of the room they are in, with lower ceilings resulting in more logical approaches to the task, whereas those in rooms with high roofs showed more creative, lateral thinking [Anthes 2009]. The space, freedom and high ‘ceiling’ of the outdoors may well encourage inventiveness and new ideas. As we saw with Sheja, this environment increases the child’s dispositions to be open to new ways of thinking and to give novel ideas a go. Such ‘possibility thinking’ will be highly valuable in the 21st Century.

The role of movement/ use of hands

Like Tristan and Skye, Jordan seeks out and loves movement experiences that involve fast movement in space. Jordan particularly finds this really important stimulation through spinning as he has a fascination with turning and rotation (see below). Most children love this sensation, and many adults will remember

a childhood obsession with spinning. Do you remember doing handstands, cartwheels, rolling down hills and spinning on the spot until you fell over and the world kept on spinning; twisting the swing up tight so that it spun you as it unravelled and hanging over the swing on your tummy with your head down; doing 'apple turn-overs' over bars, hanging up-side-down and leaning out as you twirled around lamp posts? Rotations in space cause Jordan's vestibular sensory system to wire up in his brain and to integrate this really well with his visual system. As a result he will have a strong sense of his body in space, good balance and coordination and good spatial awareness and control. He will have a strong sense of space and how his body moves in it. His need for movement now will lead to an ability to control his body. If this work is not completed, he will, like many boys in school, struggle with the requirement to be still later in childhood and adolescence. All children need to do lots of this work for comfortable life-functioning, but some boys in particular seem to need to do more work on this than others. Of course, these might be the people who later in life have professions or interests that use highly refined balance, such as roofers and climbers [Featherstone & Bailey 2010].

Much of Jordan's active play is also developing a second, fundamentally important, internal sensory system, called proprioception, which leads to body awareness and control. Awareness of our body, a feeling of being in it, knowing where our limbs and 'edges' are, and where it is in space are things we take for granted. We don't need to take up conscious thought (working memory) for all the thousands of ways we position and use our bodies for day-to-day functioning, because as young children we worked very hard to develop our 'proprioceptive' sensory system. Nerve-ending sensors (proprioceptors) in the muscles, joints and tendons become connected to the brain so that we gain the complex ability to sense and control body movement and position. It is this kinaesthetic sense that helps us to know about our own body from the inside and that gives us a feeling of being in our body [Sacks 1985] and the 'feeling of life itself' [Jabadao 2005]. Children with a well-developed proprioceptive system have a firm sense of self and are able to feel confident in the world. Since this is what we want for all children, it is our responsibility to ensure that the children in our care have *lots* of access to the movements that develop body sense. Fortunately, like vestibular development, this is hard-wired into the drives and behaviour of two year-olds, and the outdoor environment provides plenty of invitation and provocation. Running, jumping, rolling, rough and tumble play, being wrapped up, pushing, pulling, stretching, hanging by the arms, lifting, carrying and throwing all give the resistance and tension work that stimulates nerve and brain development for this sensory system [White 2008b]. This knowledge gives us deeper insight into what is really going on in the play of two year-olds (especially boys): watch Jordan and his friends moving the tyres, Skye leaping and landing from the big tyre, Tristan running, climbing and jumping, Sheja playing football and Leila walking and stamping, and consider how much resistance and tension stimulation this play is creating in all parts of their bodies. Even falling over has the positive element of providing this stimulation, as do all the knocks and bumps children get in their active explorations and play: this knowledge might help parents and practitioners to see young children's physical escapades in a new light.

What matters to two year-olds: schemas

Jordan's play interests show us another schema theme that is very common among young children. Like Tristan's schematic interest in trajectories, Jordan's interest in 'rotation' gives him lots of reason to move himself in a particular way

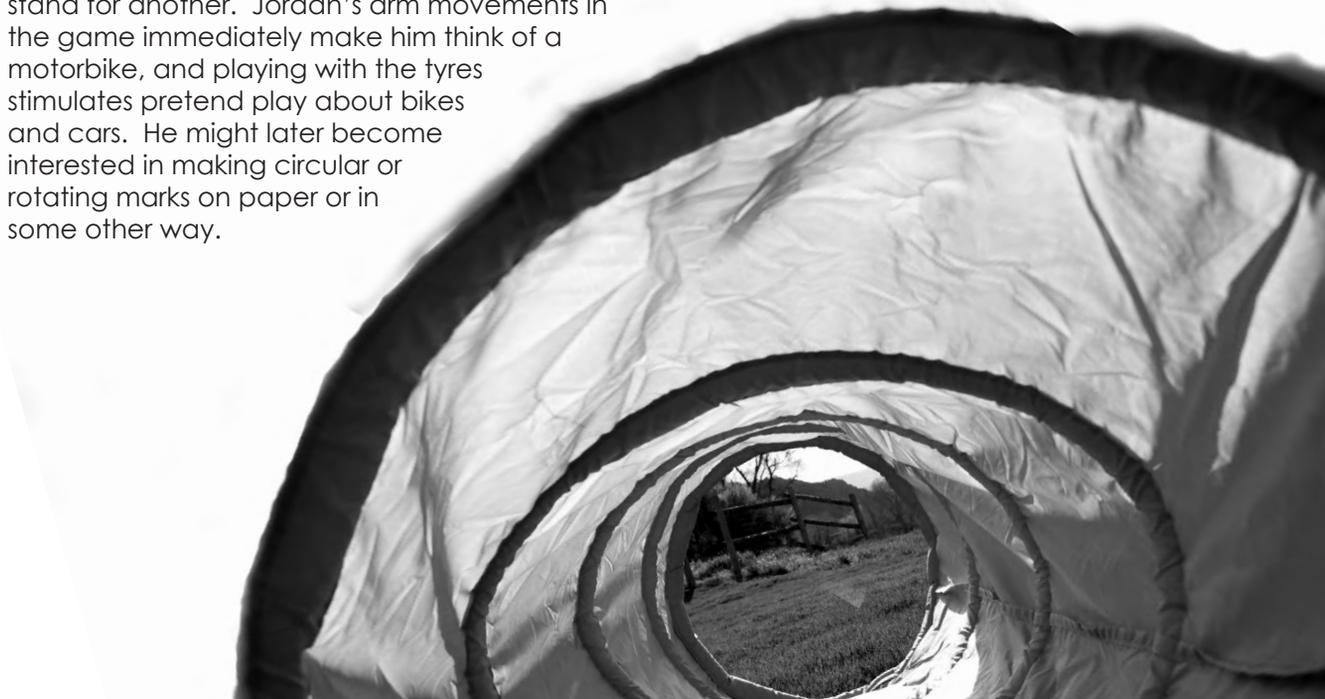
and to explore how things move in this way. Evidence of a rotation schema is continuing absorption with things that turn, such as wheels, taps, cogs and keys. Another aspect is physically experiencing rotation through rotating, twirling or twisting one's own body. A child might roll cylinders along or roll themselves; they might rotate their arms or construct objects with rotating parts. This circular shape and movement plays a central role in many aspects of the natural, physical and cultural world and the child needs to experience rotation in lots of ways in order to fully understand its many manifestations in our lives. So it is not surprising to find that many young children spend much time exploring it in their outdoor play.

Learning about how things work through this kind of exploratory behaviour means that the child *constructs* their own knowledge through experience. As they build working theories about the way the world behaves, they can only go on what they have found out so far. Like any good scientist [Gopnik et al 1999: 155], they create a mental model (a schema in the mind) from what they have learned, based on plenty of practical, first-hand evidence. As the child finds further information that fits with the current theory (existing schematic understanding), it is 'assimilated' into their overall knowledge and thinking. However, when new experience doesn't fit with the child's current ideas of how things behave, they can only 'accommodate' the new experience by adapting their theory – new learning occurs as their mind thinks about the idea in a modified way. Pursuing schematic interests actually wires up the brain (making new connections between neurons) creating deep-level learning [Bruce 2005]. Their mental model is adapted to the new information and they carry on looking for more evidence that this is, or is not, correct. Often children work on more than one 'big idea' (schema) at a time, gathering knowledge about several elements of life. Once the child has a pretty firm model because additional information keeps on fitting in with the theory, they might start linking it up with other 'big ideas' and seeing how these fit together.

“Schemas are integrated, co-ordinated networks of behaviour through which children gain access to knowledge and understanding, and sort out their ideas, feelings and relationships. They are part of the way the child's brain is wired.”

[Tina Bruce 2005]

Jordan's rotation schema supports his development in many ways – especially the neurological development of his vestibular system (see above). Playing with another child who shares such a strong interest leads to very satisfying play as they feed each other with play ideas, and children with such similar or compatible interests often become friends. During this year, schemas also begin to operate at a symbolic level where the child makes one thing stand for another. Jordan's arm movements in the game immediately make him think of a motorbike, and playing with the tyres stimulates pretend play about bikes and cars. He might later become interested in making circular or rotating marks on paper or in some other way.



The right stuff: materials and resources; contexts for emerging pretend play

The tyres are of great interest to these boys and have several qualities that make them ideal. Jordan's interest in moving the tyres around is a super way for him to stimulate proprioceptive development. The weight and size of the tyres mean that they are hard work to lift and he has to push hard to roll them, using much of his body. They are not easy to move: because the weight of a tyre is on the outside of the circular shape and not in the middle, he really has to pay attention and constantly adjust all parts of his body to cope with its unpredictable movements as gravity pulls it in all directions. Notice the way he pays close attention to this feeling and what the tyres look like as they roll. As he handles and pushes them, he gets an enlivening, full-body feel from the mass of the tyre and the pull of gravity, adding to the satisfaction of the play for him. Look closely at his hands and arms as he manipulates the tyres and consider how this play is developing feeling, strength and control in his fingers, hands, wrists, arms, shoulders and torso. All these will be necessary for comfortable control and success with the use of pencils in later writing activity - this is actually really good 'pre-writing' work!

The whole-bodied involvement in lifting and pushing feeds into his pretend play around motorbikes, making the tyres really good resources both developmentally and imaginatively. The abundance of these resources is another key to their success. Having plenty means that lots of boys can join in play together – limited resources limits the group size and leads to conflict. His distress at having the tyre he thought was his taken by another child (notice his pointing finger to bring attention to the issue) is very short lived since he quickly remembers that there is an ample supply. He knows where they are stored and he can get one himself without having to ask or wait for an adult's attention, so that he is able to carry on playing sociably without the disturbance and upset of conflict.

This is all highly desirable in an outdoor space that seeks to encourage social play and independence.

Tyres have a great many uses in an early years setting and do make wonderful resources, as we see here. However, as with every resource both indoors and outdoors, they need to be carefully managed to ensure they remain safe and hygienic. For example, they should be checked and cleaned on arrival, stored in a dry spot as water will otherwise collect in the rim (and should not be allowed to stagnate), checked for hazards daily and washed down inside and out weekly [White 2005].

Personal and social development; communication and language development

“Laughter, gleefulness, whooping and shrieking with delight are characteristic of young children's play, and contribute to a sense of outdoors as a place of joy where children can be both literally and metaphorically 'giddy with glee'.”

Helen Tovey (2007: 21)



Children at the end of their third year show an increasing ability to understand and expand on what their play partner intended [Dunn 2004: 22]. This comes about through the arrival of a stage of cognitive development (called 'theory of mind') that means that the child realises that other people's thoughts are different to theirs, and starts to be able to understand what might be going on for that other person, what they wanted and what they were thinking about. However, this is not at all easy and develops more from three years-old onward. In the meantime, this year can be a time of frequent frustration and distress, as the child becomes more self-aware and self-determined – accounting for the emotional turmoil labelled as the 'terrible twos'. Imagination and language are both critical for this understanding to grow. "Language's special ability to capture the to-and-fro of perspectives is one reason why it has been attributed with such a critical role in the development of social understanding". [Fernyhough 2008: 162]. Imagination enables the child to run a sort of mental simulation of the other person's point of view, asking herself what she would do if she were standing in their shoes – it's really mind-reading and it takes many years and lots of skill development to do well! However, Jordan shows empathy for his friend when he gets trapped in the seat-well, able to realise his distress and perhaps able to imagine what he is feeling, and knowing how to offer physical and emotional support.

These abilities are at the heart of friendship, and it is the desire to play together that drives things forward. Later on, when there is a risk of conflict Jordan decides instead to get another tyre. His desire to play (and his knowledge that he can get a replacement) means that he can quickly move on. He shows remarkable self-regulation here. A large amount of research has shown that young children, especially boys, learn emotional control, strength moderation and suppression of the bite impulse through rough & tumble and other very physical play [Brown 2009]. Self-regulation develops in parallel with imagination and language as the frontal lobes of the brain wire up: all three things come about through maturation of this particular 'executive' part of the brain. This most evolutionarily-modern part of the brain is exceptionally well developed in humans and is the seat of consciousness, giving us the self-awareness, self-control and self-organisation that we need to function as such highly social animals. The 'executive brain' is responsible for all higher-order purposeful behaviour – identifying a goal, forging plans to reach it, organising how to do what is necessary to get there and judging the consequences [Goldberg 2001]. This is a lot for a young child to do, but self-directed imaginative play with other children is the perfect way to work on it. As we have seen several times in this film, the child-led play of two year olds is *much* more significant than it looks on the surface, and our task is to make sure they are able to pursue such detailed and important work. The culture and opportunities available in a rich outdoor environment have a huge role to play in this development.

Jordan is a very sociable child, very interested in playing with other boys. He has quite an inclusive drive, enjoying that others join in his role play idea. His developing emotional regulation means that he can suppress his own immediate needs to meet the bigger purpose of playing together. He can also join in games that have predetermined rules, in the context of the extra freedom outdoors to respond in his own way. Having a sustained common interest with the other boys, with its shared language and sound effects, helps them to listen to each other and to play together – language skills and social communication skills are strongly connected. The scene where the three boys are sitting together planning their play activities is just delightful, with lots of gesture and facial expression, as they have good ideas and plan together. While Jordan learns lots about how to play

from the scaffolding that mixing with slightly older children provides (see notes for Erin on the 'zone of proximal development'), he is clearly also learning a great deal from such interactions with his peers. Children are very active in socialising themselves and can often develop a sense of fairness and respect for each others' point of view through peer negotiation, especially when they are controlling their own play (Garrick in White 2011). As with Skye and Sophie at the water butt, the compelling need to play together drives young children's pro-social skill development.

As Erin at 2 years 11 months was developing imaginative play into story-making, we now see Jordan's interests in driving and vehicles supporting the emergence of the early stages of more complex role-taking play as he washes 'cars' for other people. Staying in role is a step more than the pretend play we have seen so far. Here, Jordan is able to indicate to others that the soft blocks are cars, allocate roles of car-washer and driver to himself, feel what it is like to be in this role and explore things about himself, such as 'who could I be?' Mixing with older children is very beneficial for him, providing models for how to take such a role and inputting ideas that sustain the roles and the scenario – and clearly sensitive adult interaction can be very supportive too (see below). His enjoyment of having others join in with his role play is clear and it really adds to his self image when other children are drawn to his role play idea. As in Dunn's research [Dunn 2004: 22], we see children turning three adopting complementary roles and expanding on their play partner's ideas. [For a wonderful account of how this world takes off over the next year, read *Mollie is Three* by Vivian Gussin Paley]. Watch the sequence carefully to identify the features that make this play effective for Jordan: stimulation from the real world, open-ended materials, real water, control by the child, freedom to make a 'mess', plenty of space that can be used flexibly, a large social space where people can come by and join in, a mixed age group and attentive, sensitive adults. All combine to make this a powerful context for the emergence of this very important personal and social development.

Through his play outdoors, Jordan is experiencing feelings of belonging, value for what matters to him and respect for who he is, resulting in a happy individual who is developing strong dispositions for a successful life.

Adult support and interaction

The gentle support Nicola gives Jordan in his car wash role play is similar to that she gave to Erin for her story-making, taking a companion role who is interested, prepared to take the role the child assigns her, but not directive or dominating. Older two year-olds are beginning to be able to control the need to have the play 'go all their way' with peers and older children, but do appreciate and benefit from this opportunity. Through such experience they can extend their imaginative capacities freed from having to work out how to meet social demands. Nicola also models phrases for children to use in role themselves: we see the other boy using such phrases in his interaction with Jordan in the role of customer: "Is this my car? – oh good; has Nicola got her car?"

Another good way for adults to interact with children of this age outdoors is to play group games that support social play and an emerging interest at this time in games with external rules (that is, not made by the child). It is very helpful for practitioners to make a laminated list of prompt ideas that can be hung up outside for easy reference, so that their repertoire is wide and they can quickly select the best game, action rhyme or song for the circumstances.

Although two year-olds enjoy adult time and attention, they do not always need their direct interaction and indeed it might be an unwelcome intrusion. They do, however, need to know that adults are present and attuned to them, holding them in mind, taking care of their overall safety and available whenever they are needed. This security gives them the emotional freedom to engage fully in deep play and learning.

For successful outdoor play, adults must observe individual children closely and habitually, working hard to understand what is really going on at a deep level for the child. They will protect the child's initiative and concentration and enable him or her to explore more of the same, without being in a hurry to find 'next steps' until the child is ready. When we look closely, we realise just how much is happening in everything the child is doing. And our belief and trust that the two year-old is a driven and competent learner is forced to deepen.

Prompts for developing practice

Organisation

- ❑ Two year-olds do not need to have their play environment set up by adults in a predetermined way each day: rather they need a stable and predictable environment that is then open to choice about what to do in it. Continuous provision enables children to find and select resources independently, encourages independence and choice about their play, supports successful social play and reduces conflict. What would you need to do to make suitable resources continuously, safely and easily accessible? Discuss why and how you would involve the children in tidying up each day.
- ❑ Children of this age are still too young to share and need abundant resources with just an occasional demand on developing the ability to share - any focus on sharing and turn-taking is not appropriate before children turn four. Having access to plenty of simple stuff minimises the need to share and allows two year-olds to concentrate on the skills of playing imaginatively together. Are there enough of the most effective resources and could there be more?

Environment

- ❑ Sound vestibular development is crucial for children of this age. What experiences could you provide in your outdoor space (sliding, swinging, rolling, spinning, jumping, etc.) and how could these be accessed in a safe-enough but satisfying way? Don't forget that adult bodies are still often the best equipment for young children, such as twirling the child around while being securely held.
- ❑ Proprioceptive development is of equally vital importance in young children. What resources could you provide that are large and suitably heavy, so as to give your two year-olds access to lots of pushing, pulling, rolling, lifting and carrying. How could you provide for leaping and landing, stretching and hanging by the arms, and other deep-body physical play?



Adults

❑ Adults need a deep understanding of the role of movement in the lives of two year-olds. Watch the sequences of Tristan, Skye, Leila and Jordan several times focusing on what they are each doing with their body and what they seem to be getting from this. By sharing perspectives and discussion, build up a picture of the central role of movement and action in the well-being, thinking and development of two year-olds.

❑ Behaviour issues with boys often diminish when they have sufficient time outdoors every day, when adults understand how they play and realise how much they benefit from being enabled to do their learning outdoors. Discuss the children you know who are 'totally different' and 'come alive' outdoors and who 'would spend all day outdoors if they could'. Using the outdoors well is inclusive and benefits all children, both indoors and outdoors.

Parents

❑ Very young children are severely constrained in their lives in modern UK culture. Boisterous children are seen as being challenging and this often results in behaviour problems – resulting in a negative downward spiral for the child and their relationship with parents. Do parents understand the great movement needs of their child at two, both in the setting and in their family lives? How can you support them in this area?

❑ Parents may not understand the very physical way boys like to interact with each other through noisy, boisterous, risky and bodily play. What can you do to ensure that they are comfortable with their child engaging in play like this in your outdoor environment? Could you also help to increase their tolerance for this play at home?



Film commentary

Two year olds need the wonder, excitement and unlimited stimulation that the outdoors provides. There are major steps forwards during this year as their imaginations, language and social abilities take off.

By following six children, we'll see how ideally suited a rich outdoor environment is for stimulating and supporting the explosive developments that are beginning to happen.

So what is it that's found outdoors that's so perfect for motivating and inspiring two year olds? What is it that they really want to do?

Tristan

This is Tristan. He's in his garden with Mum. He spends a lot of time outdoors. It's the perfect place for the kind of physical activity that he loves and needs. And it's outside where children are most free to use their whole bodies to explore. This is hard work, helping him build up his muscle strength, lung capacity and bone density. This low wall is perfect for climbing on. Jumping off the wall, he co-ordinates different parts of his body, swinging his arms and bending his legs to push himself into the air.

These different positions and the use he makes of his arms and legs are helping to develop something called his proprioceptive sense. The messages sent to the brain about the physical sensations he experiences, give feed back about balance and position. Children's bodies need an enormous amount of stimulation, in order to learn what they can do, and how they feel when they're both moving and still.

His visual sense is also involved. As he goes fast down the hill, his brain is linking up what the world looks like when he's moving with how his body feels.

He uses his movement skills to interact with the world around him. There's a link between Tristan's physical activities and cognitive thought processes. In fact it looks like his muscles do his thinking. What seems to interest him most is the path, or trajectory, that objects, or he himself take as they move. He watches the changing trajectory of the water as the pressure of the water sprayer increases and decreases. He's linking the action of pumping the water sprayer with the distance the water will travel, helping him learn about cause and effect.

He applies this interest in trajectories to lots of the things he does and it helps him build up his thinking structures. He moves with the water along the path, leaving a visual mark of the way both he and the water travel from one point to another.

He finds a feather. It can be blown upwards but doesn't seem to make the same trajectory as the water.

These patterns of linked behaviours are called schemas. They help him to make generalisations about the world. Every time he has an experience involving a trajectory, it'll either confirm what he already knows or he'll change his ideas to incorporate the new information. The outdoors is the perfect environment for Tristan to follow his interests and expand his thinking.

On a walk to the park there's so much to see and talk about and Tristan's

language is really taking off. It's an important development during this year. He wants to know why the leaf doesn't fly upwards. The feather did. He has a memory of how other objects moved and he's thinking forwards and backwards with ideas.

The high street is filled with interesting things and Tristan is always making connections between the things he sees and hears. He's remembering things he's seen and sharing this with Mum. He experiments with the noises he can make. The line on the pavement fits with Tristan's schematic interests and he follows along it again and again. Children's brains aren't yet fully formed, so they process and assimilate information more slowly than adults. They really need plenty of time to repeat the things they're interested in, allowing the information to sink in and connections to be built in the brain. Each time Tristan comes on this now familiar walk, he builds on his knowledge, linking experiences and building new thoughts.

In the park Tristan sees some dogs. He's scared and runs for the safety of Mum, his attachment figure. Here he has the space to run off and explore, knowing he can always return to her if he needs to. It's as if he's attached to her with elastic. Tristan runs to one of his favourite spots in the park. He's stimulated and wants to talk. Now that he can talk it's much easier to work out some of what's going on in his head. He experiments with his language making up rhymes. He's keen to see what happens to the things he throws in the stream.

Again Tristan leaves his Mum to go and explore. He reassures himself, and Mum, that it won't be for long. He needs the security of Mum to help him feel brave. They explore the bee together.

In this local park nature has created many spaces that provide stimulation and challenge for all areas of development. He can push himself as much or as little as he likes. His language shows his awareness of himself.

He sees a dinosaur! Pretending, and language are strongly linked, as they both rely on the use of symbolism, where one thing stands for another. His brain's developing the ability to imagine. It's at this age that pretending really starts to blossom, and nature provides a lot of inspiration. It's this ability to pretend that develops children's brains in the areas of symbolic and abstract thought. They replay their experiences so they can process, understand and internalise them.

The outdoors is so inspiring that it really encourages Tristan to seek out and create his own experiences. He pokes and ponders in the gloopy mud, feeling the temperature and texture on his skin. He's wondering what he can do with it, what it can be transformed into. He uses it to make marks.

With the support of Mum and plenty of time Tristan really makes the most of the outdoors. Whether hanging out in the garden, wandering along the high street, or mooching in the park, everything he encounters adds to his understanding of himself, the world, and it's inhabitants.

Skye

This is Skye. She's been coming to this nursery for some time and she's very settled here. She has trusting relationships with the practitioners - they know each other well.

The children here spend a lot of time outdoors everyday. Skye's a very active little girl and she's free to move around the nursery garden as she pleases. She

spends a lot of time collecting and transporting things from place to place. She can combine things in all sorts of ways. She forages, combines, and transports. This is her schema. There's so much to learn about sizes, amounts, spaces, the nature of different materials. Outside there's lots of materials and various ways to move them. She fills a container with water and transports it to another part of the garden.

As with Tristan, the emergence of language adds another dimension to what she's doing. "I'll go and get some more". She talks to herself, planning what she's going to do. At this age children often put a commentary to what they're doing. Here she says "put in scissors" and acts out a sawing, cutting movement. She makes the same forward and backward movement with the car. This time it represents the way vehicles move. Talking to herself, consciously directs her thought processes, helping her guide and regulate her own behaviour.

Talking with Nichola, who's tuned into her interests, she has a proper conversation. These natural materials inspire her. She wants to make a face. As we saw with Tristan, the natural world encourages her imagination. She's using visual symbols to make the face. Natural materials have unlimited potential for encouraging symbolising, language and creativity.

The outside has lots to inspire Skye. Comings and goings outside the nursery help her feel connected to local daily life.

She's collected the toy spider and a piece of bark to take to the sand pit. It inspires a song. She can hear the sounds, rhymes and alliterations as she gets used to using her language. The songs increase Skye's vocabulary and confidence with the use of language. The rhythm in songs activates the brain in far reaching ways. There's an intuitive link between voice and movement. It's a real feature of two year olds. Skye clearly loves it.

Another really vital thing Skye likes to do outside is to socialise. During this year she's really going to learn a lot about doing things with other children. She hears a game being played and wants to see what's going on. There's a race and she wants to be in it. She joins the line up. She feels confident to join the big group.

She really wants to join in with the older children and emulate them. Her advancing physical skills help her to be able to interact. Such a lot of Skye's interactions with the other children involve movement and physical activity. She watches Ella – a year older – on the slide. She mirrors her actions almost exactly. The practitioners have decided that this more exciting way of coming down the slide is safe enough for the children who make their own judgement that they can manage it. Her confidence is immediately boosted after the big risk she managed to take. It helps her physical competence and bravery, making her feel robust and begin to have a belief in her self. The outdoors can really encourage girls to be more adventurous.

There are lots of physical challenges and she still needs constant practice. With adult help she can be even more adventurous. She's so pleased. Doing things to show the others really motivates her to push herself.

The giant tyre is good for all sorts of activities. The search for tiny spiders intrigues Skye. She often copies what the older children say.

There's such a lot to learn about socialising. Sophie's the same age as Skye and they're gradually forming a proper friendship. But of course everything doesn't always go smoothly when you're learning how to get on with others and conflicts are frequent. Skye realises she shouldn't have pushed Sophie and tries to remedy it. But sharing's still a difficult concept at this age.

The adult stands back until she's really needed. Children often need support to keep the play flowing. But they also need space to practice so practitioners need to know when to intervene. Outside dens and enclosures often tend to encourage social interactions and in this corner of the garden they can be a bit more private. The water butt gives them plenty to do and talk about together as they gradually learn how to cooperate and have more of a conversation. Skye says what she thinks about Brenda making them go in. With enough space and time she's beginning to make proper friendships as she and Sophie are able to play and talk together.

Skye really flourishes outside. There are challenges for her physical, social and cognitive development. She's building a feeling of well being, and getting a sense of herself as a capable little girl.

Sheja

Here's Sheja. He's started at this nursery several months ago and comes for a few sessions a week. His home language is Persian and he's just recently started to learn English. He's relaxed and free here in the garden and is inspired by the tiny insects, picking up the English word for what he's spotted. Children are often fascinated by the miniscule things they find outdoors. He spots another fly – and another one – he thinks. He looks closely, and listens carefully to the sounds he's making.

The making and listening to sounds is something Sheja is very interested in. Stephen's tuned into his interests. The pair experiment with making different sounds taking turns. Outside he can make as much noise as he likes. Stephen copies Sheja as well as showing him new sounds.

He finds these scraps of wood and quickly works out what he could do with them. He pretends and relates it to music. The pieces of wood have unlimited use for Sheja to be creative. Outside there are lots of other sounds to stimulate and catch his attention. Music and language have many similarities. Both are organisations of sound in time and space. Listening carefully and learning to discriminate sounds will really help Sheja with his home language and picking up a new one.

Each day Sheja carries on making and listening to sounds. Stephen's engaged with Sheja, helping extend his learning as he experiments with the different sounds he can make. Sounds both near and far always seem to catch his attention, helping his brain build up the ability to judge where sounds are coming from, and how far away they are. He's learning fast about making rhythm. The practitioners recognise this and encourage him. The recognition he gets inspires others to join in. His interests, and what he's good at, are enabling him to start making bonds with other children, helping him feel more socially competent.

As well as helping him physically, his love of football also helps him begin to make friends. Running together as a group seems to be an important way, especially for boys, of forming the bonds of friendship. While his English is still limited, his body language and how it's picked up on, is crucial for helping him to communicate. His

physical skills, body language and careful listening are really helping him socially.

In the garden Sheja has the freedom to make his own agenda, and with Stephen's support, his physical, language and social skills are all being fully explored. He's stimulated and feeling good about himself, helping him to pick up another language quickly.

Laila

This is Laila. She's been coming to this nursery a few mornings a week for some time and is well settled. She was born pre-term and has delayed progress. She's just learning to walk. She has a close relationship with Carol, who she really relies on to get the full benefit of the outdoor space.

One of Laila's favourite activities at the moment is walking round the garden. She sees and feels the wind blowing the leaves. She watches what the other children are doing. "Look" she says as they pass an interesting bush.

Physically, walking along uneven ground is quite a challenge. Carol knows where Laila wants to go by the way she turns her body. There are so many physical challenges outside for Laila. Crawling helps Leila's co-ordination. Because of the use of alternating sides of the body, there's increased communication between the two sides of the brain, helping her brain development. When she's crawling she has a bit of independence. Her language is linked to her movements - "up" she says. Going up steps is hard but she wants to do what the others are doing. She loves joining in. As we saw with Skye, there's an intuitive link between songs and movement. She communicates with her hands, as something on the other side of the garden takes her interest. Carol constantly notices her body language and gestures, and helps her to do what she wants. Being able to follow her own interests is very important for Laila. Pointing is a powerful gesture, helping her to get what she wants. Laila's understanding how the stick can be used. She gets the powerful feeling of being able to affect something.

This tree trunk is just at the right level for her to hold on to and do what the others are doing. There's lots of things outdoors that encourage Laila to reach, helping coordination. Pulling the ribbon, like the stick, helps her to experience cause and effect.

While she's standing at the tree trunk she's stimulated in many ways, smelling the flowers, feeling textures, placing things. She's copying Carol's language, and listening to sounds both near and far.

Laila's experiencing the great variety of things that the outdoors offers her senses. There's lots of stimulating physical challenges and with Carol's help she can join in with the others. Seeing what they're doing in the garden really motivates her to have a go and join in.

Erin

This is Erin. She comes to the same nursery as Skye for two afternoons a week. She's fascinated by natural things outside. At the moment water is one of her main interests. She loves working out what she can do with it and how it behaves. She sees how and where puddles collect – and they always have to be stamped in.

She tries to work out how to transfer the water, or most of it. She pours the rest of it

out onto the table, watching it's movements carefully. She hears and feels the rain. She's thinking. She gets a jug and tries to catch it. She's learning different ways that water can be collected. What else can I do with it?

Water can be mixed with other materials and transformed physically, changing it's consistency and behaviour. Like a chef or a scientist, she's mixing and combining, finding out what she can create with her raw materials. Erin transforms her concoction into hot chocolate and spoons of sugar. These transformations, by mixing and combining materials, often seem to be linked to mental transformations, encouraging symbolic thinking. Natural materials are the right stuff to support this behaviour and thinking.

On a sunny day she gets a water pistol. What can the water in here do? Today she puts her thoughts about what's happening into words. She talks about the dribbles and how the water runs. She notices how it forms into bubbles.

She's very thoughtful and inquisitive and it's this that seems to encourage her language development. She's started to look very carefully and other children join her as she instructs them on what to do, encouraging her social development.

Her understanding of the world is growing in parallel with the development of her pretend and fantasy play. "We have to run away from the spider and hide". Erin's pretend play is stimulated and sustained by the outdoor space. She's moving on from the younger two year olds' pretending, to more complex make believe, as her imagination starts to tell a story. Her imagination knows no bounds as she creatively uses the brushes as knitting needles to knit spiders webs. The pretend game has advanced from re-enacting real life experiences, to beginning to develop quite a complex imaginary game.

It seems to be that both pretend and fantasy play, are an important vehicle in which all aspects of learning are able to be worked on.

She's practicing her language, using her imagination, creating a story, at the same time as drawing on her understanding of the real world and dealing with fears. For a short time she's in charge, powerful in the world she's created. She's in control of her own play.

Jordan

Jordan goes to same nursery as Skye and Erin. He's a fun loving sociable little boy.

He's completely entranced by the rolling balls. Rotation's what he's currently interested in. This schematic interest helps his development in many areas.

This time he rolls himself around in the tunnel, experiencing rotation with his whole body. Young children need plenty of opportunity to make certain types of movements, like rolling and spinning and swinging, that stimulate the vestibular sense. This is responsible for processing feelings of gravity, position and movement in space. As Jordan rolls it causes this vestibular sense to wire up in his brain and to become well integrated with his visual system, linking what he sees with how his body feels with as it rolls. Over time these movements lead to a strong sense of balance, body control, coordination and spatial awareness.

He spends a lot of time rolling tyres round the garden – like with Tristan carrying

his logs – lifting heavy objects helps Jordan's muscle development and sense of his body. His interest in rotation feeds directly into his pretend play as he turns the wheels into motorbikes.

In a game of 'Simon Says' Jordan's keen to show his interests to the others. He rolls his hands around and immediately turns into a motorbike. The freedom to move around is essential for his development as he incorporates his interests into his learning structures.

Much more of his time now is spent interacting with other children. Situations often arise outside where they might need each others help and Jordan is able to empathise and help out. It's an important part of beginning to make friends. His schematic interests are also helping his social development as both boys share the same interests. When children have similar interests playing and learning together is very satisfying. Their sustained shared interest helps them think together.

He's started to form a social network and talks about bikes and games. He attends carefully to what the older boys are saying. Then another boy takes Jordan's wheel. What a cheek! He doesn't make this into a dispute but diplomatically goes off to get another tyre. He knows where to find one.

Jordan's extending his interests in wheeled vehicles and sets up a car-washing garage – encouraged by Nicola. Gradually other children come and join in with his game. His social skills are developing all the time. The older boy supports his imagination and encourages his social skills. He makes sure his friends can join in and although he initiated the game he doesn't dominate the play.

The situations Jordan encounters outside really allow him to explore his social, physical and cognitive skills. He's trying out rolls, taking pretend money, testing out his ideas of how the world works at the same time as learning to get on with others and make friends.

Conclusion

These children have shown how outside all their areas of learning are enhanced. The variety and stimulation found outdoors offers children the freedom to follow their own interests, to make their own experiences, to be inspired. It's against this backdrop that children learn in a natural and highly motivated way. The physical, exploratory nature of the way they learn stimulates their blossoming language and social abilities to the full. They can find the inspiration to imagine and pretend. They're building confidence and a feeling of well being everyday.



References

- Anthes, E. (2009) *How room designs affect your work and mood*, Scientific American Mind. 22nd April
- Appleton, J. (1975) *The experience of landscape*, John Wiley & Sons
- Arnold, C. et al. (2010) *Understanding schemas and emotion in early childhood*, Sage
- Ball, D., Gill, T. & Spiegel, B. (2008) *Managing risk in play provision: implementation guide*, DCSF Publications
- Bilton, H. (2010) *Outdoor learning in the early years: management and innovation*, Routledge
- Brown, F. (2003) *Playwork: theory and practice*, Open University Press
- Brown, S. (2009) *Play: how it shapes the brain, opens the imagination and invigorates the soul*, Penguin Group
- British Heart Foundation (2009) *Couch kids: the nation's future, Report into childhood obesity* www.bhf.org.uk
- Bruce, T. (2005) *Early Childhood Education* (3rd Edition), Hodder Arnold
- Buckley, B. (2003) *Children's communication skills from birth to five years*, Routledge
- Carlson, F.M. (2006) *Essential touch: meeting the needs of young children*, National Association for the Education of Young Children www.naeyc.org
- Carson, R. (1998) *The Sense of Wonder*, Harper Collins
- Chilvers, D. (2006) *Young children talking: the art of conversation and why children need to chatter*, The British Association for Early Childhood Education
- Claxton, G. (1999) *Wise up: learning to live the learning life*, Network Educational Press Ltd.
- Davies, C. (2009) *Scientists give grubby children a clean bill of health*, The Guardian 24.11.09
- Department of Health (2009) *2009 Annual report of the chief medical officer* www.dh.gov.uk/publications
- Dixon, J. & Day, S. (2004) *Secret Places: 'you're too big to come in here in: H. Cooper (Ed) Exploring time and place through play*, pp92-108, David Fulton Publishers
- Donaldson, M. (1978) *Children's minds*, Fontana/Collins
- Dunn, J. (2004) *Children's friendships: the beginnings of intimacy*, Blackwell Publishing

- Featherstone, S. & Bailey, R. (2010) *The cleverness of boys: understanding what boys do well and helping them to succeed*, A&C Black Publishers Ltd
- Fernyhough, C. (2008) *The baby in the mirror: a child's world from birth to three*, Granta Books
- Goddard Blythe, S. (2004) *The well balanced child*, Hawthorne Press
- Goldberg, e. (2001) *The executive brain: frontal lobes and the civilised mind*, Oxford University Press
- Gopnik, A. (2009) *The philosophical baby*, The Bodley Head
- Gopnik, A., Meltzoff, A. & Kuhl, P. (1999) *How babies think: the science of childhood*, Weidenfeld & Nicolson
- Goldin-Meadow, S. (2003) *Hearing gesture: how our hands help us think*, Harvard University Press
- Greenman, G. (2007) *Caring spaces, learning places: children's environments that work* 2nd Edition, exchange Press
- Hannaford, C. (1995) *Smart moves: why learning is not all in your head*, Great Ocean Publishers
- Heft, H. (1988) *Affordances of children's environments: a functional approach to environmental description*, *Children's Environments Quarterly* 5 (3) pp29-37
- Holland, p. (2003) *We don't play with guns here: war, weapon and superhero play in the early years*, Open University Press
- Hughes, A. M. (2006) *Developing play for the under 3's: treasure basket and heuristic play*, David Fulton Publishers
- Hughes, B. (2001) *Evolutionary playwork and reflective analytic practice*, Routledge
- Hundertwasser, F (2004) *KunstHausWien*, Tachen
- Isaacs, S. (1932) *The children we teach*, University of London Press
- Isaacs, S. (1945) *The Nursery Years: the mind of the child from birth to six*, George Routledge & Sons Ltd
- Jabadao (2005) *Developmental Movement Play: 6 year action research report*, *Jabadao National Centre for Movement, Learning and Health* www.jabadao.org
- Kahn, P. H. & Kellert, S. R. (Eds) (2002) *Children and nature: psychological, sociocultural and evolutionary investigations*, The MIT Press
- Keeler, R. (2008) *Natural Playscapes: creating outdoor play environments for the soul*, Redmond WA: Exchange Press
- Kindlon, D. & Thompson, M. (2000) *Raising Cain: protecting the emotional lives of boys*, Ballantine Books

- Kirkby, M. (1989) *Nature as refuge in children's environments*, Children's Environments Quarterly 6 (1) pp 7-12
- Lavers, F. (1994) (Ed.) *Defining and assessing quality in early childhood education*, Leuven University Press
- Lindon, J. (2003) *Too safe for their own good'? Helping children learn about risk and lifeskills*, London: National Children's Bureau
- Lindon, J. (2006) *Equality in early childhood: linking theory and practice*, Hodder Arnold
- Lucas, B. & Claxton, G. (2010) *New kinds of smart: how the science of learnable intelligence is changing education*, Open University Press
- MacKintyre, C. & McVitty, K. (2004) *Movement and learning in the early years: supporting dyspraxia (DCD) and other difficulties*, Paul Chapman Publishing
- McGilchrist, I. (2009) *The master and his emissary: the divided brain and making of the western world*, Yale University Press
- McMillan, M. (1930) *The nursery school*, Dent
- Martin, S. & Berke, J. (2007) *See how they grow: infants and toddlers*, Thomson Delmar Learning
- Medina, J. (2008) *Brain rules: 12 principles for surviving and thriving at work, home and school*, Pear Press
- Mooney, c.G. (2000) *Theories of childhood: an introduction to Dewey, Montessori, Erikson, Piaget & Vygotsky*, Redleaf Press
- Ofsted (2006) *Early Years: safe and sound HMI 2663*. Available from www.ofsted.gov.uk
- Ouvry, M. (2004) *Sounds like playing: music and the early years curriculum*, British Association for Early Childhood Education
- Paddock, C. (2007) *Soil bacteria work in similar way to antidepressants*, Medical News Today 2nd April www.medicalnewstoday.com
- Paley, V. G. (2004) *A child's work: the importance of fantasy play*, the University of Chicago Press
- Pearce, S.H.S. & Cheetham, T.D. (2010) *Diagnosis and management of vitamin D deficiency*, Clinical Review 340 (16 January) 142-144
- Provine, R.R. (2000) *Laughter: a scientific investigation*, Faber and Faber Ltd.
- Quilliam, S. (1994) *Child watching: a parent's guide to children's body language*, Ward Lock
- Rich, D., Casanova, D., Dixon, A., Drummond, M.J., Durrant, A. & Myer, C. (2005) *First Hand Experience: what matters to children Rich Learning Opportunities*
- Rizzolatti, G. & Sinigaglia, C. (2008) *Mirrors in the brain: how our minds share actions and emotions*, Oxford University Press

- Roberts, R. (2010) *Wellbeing from birth*, Sage Publications
- Sacks, O. (1985) *The man who mistook his wife for a hat* (Chapter 3 The disembodied lady), Picador
- Sandseter, E. (2009) *Children's expressions of exhilaration and fear in risky play*, Contemporary Issues in Early Childhood 10(2)
- Sax, L. (2005) *Why gender matters: what parents and teachers need to know about the emerging science of sex differences*, Broadway Books
- Sightlines (2008) *Doing the right thing: working with children in a natural environment, early childhood educators reevaluate their theory and practice*, Sightlines Initiative
- Siraj-Blatchford, I. & Clarke, P. (2000) *Supporting identity, diversity and language in the early years*, Open University Press
- Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R. & Bell, D. (2002) *Researching effective pedagogy in the early years*, DfES Research Report 356
- Stock Kranowitz, C. (2005) *The out-of-sync child: recognising and coping with sensory processing disorder*, Skylight Press
- Storr, A. (1992) *Music and the mind*, Harper Collins Publishers
- Storr, A. (1997) *Solitude*, Harper Collins Publishers
- Tovey, H. (2007) *Playing outdoors: spaces and places, risk and challenge*, Open University Press
- Waters, P. (2005) *Compound Flexibility*, Out of School, January p8-9
- White, J. (2005) *Using tyres outside*, Practical Preschool 57 Oct 2005
- White, J. (2008) *Playing and learning outdoors: making provision for high quality experiences in the outdoor environment*, Routledge
- White, J. (2008b) *Eager and able to learn*, Early Years, Northern Ireland www.early-years.org
- White, J. (2009) *Outdoor provision for very young children*, Early Years Update 66 March 2009 p8-10
- White, J. (2009b) *The Infant Garden*, Early Education Journal Autumn 2009
- White, J. (2010) *Gardens of delight*, Early Years Educator, January 2010
- White, J. (2010b) *Toddlers Outdoors: documentary film notes*, Siren Films 2010
- White, J. (2011) (Ed) *Outdoor provision in the early years*, Sage (in press)
- Wilson, F.R. (1998) *The hand: how its use shapes the brain, language and human culture*, Vintage Books

Further Reading

- Carson, R. *The Sense of Wonder* (Harper Collins 1998)
- Casey, T. *Inclusive Play: practical strategies for children from birth to eight (2nd Edn)* (SAGE Publications 2010)
- Goddard Blyth, S. *What babies and children really need* (Hawthorne Press 2008)
- Goldschmied, E. & Jackson, J. *People under three: young children in daycare, (2nd Edition)* (Routledge 2004)
- Greenman, G. *Caring Spaces, Learning Places: children's environments that work (2nd Edition, Exchange Press 2007)*
- Hope, S. *A Nurturing Environment for Children up to Three* (London Borough of Islington 2007)
- Louis, S. Beswick, C. Magraw, L. & Hayes, L. (Featherstone, S. Ed.) *Again! Again! understanding schemas in young children* (A&C Black Publishers 2008)
- Lindon, J. (2010) *Understanding child development: linking theory and practice 2nd edition*, Hodder Arnold
- Lindon, J. *What does it mean to be two? A practical guide to child development in the Early years Foundation Stage* (Step Forward Publishing 2008)
- Lindon, J., Kelman, K. & Sharp, A. *Play and learning in the early years: practical activities and games for the under 3s, (2nd Edition)* (Step Forward Publishing 2008)
- Miller, L. *Understanding your 2 year-old* (The Tavistock Clinic Understanding your child series) (Jessica Kinsley Publishers 2004)
- Nutbrown, C. *Threads of thinking* (3rd Edition, Paul Chapman Publishing 2006)
- Warden, C. *Nurture through Nature* (Mindstretchers 2007)
- White, J. *Playing and Learning Outdoors: making provision for high quality experiences in the outdoor environment* (Routledge 2008)
- White, J. (Ed) *Outdoor provision in the early years*, Sage Publishing (2011, in press)