



The Hand Model Guidelines

A handbook for building the approach into your practice

“Nobody can discover the world for somebody else. Only when we discover it for ourselves does it become common ground and a common bond and we cease to be alone.”

Wendell Berry, A Place on Earth



The Hand Model Guidelines



Welcome to this collection of guidance material designed to help support your explorations of developing learning *as* sustainability. We'd like to offer you a choice here. You can either start at the beginning by reading on, or you can start at the end by skipping to the last page.

The following guidelines have been put together to support the use of the Real World Learning network's 'Hand Model'. A wealth of background to the different elements of the model already exist on the RWL website (see references and further reading), and these guidelines are not designed to replicate the material found there. Rather, they are intended to be used alongside those texts and to give the interested educator the support we wish we had when beginning to use the model.

Over the past year, we've been busy experimenting and stepping into the unknown while attempting to find ways of connecting our education more deeply with a love and respect for this world. Held within these pages are our brief insights and reflections collected while exploring this challenge. We would like to share them with you and hope that you will join us on this journey.

Tom and Lewis – May 2015



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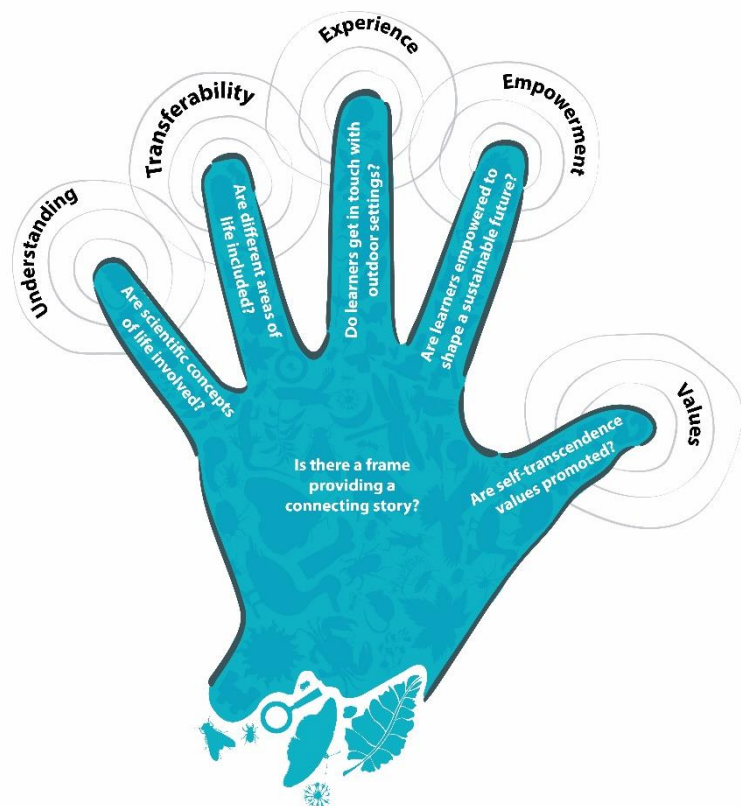
Starting at the beginning...

Introduction

As the UN Decade for Education for Sustainable Development (2005 – 2014) started to draw to a close partners from the out-of-classroom learning sector across Europe came together in 2011 to form the Real World Learning Network (RWLn). The network set out to explore the elements that make a deep and impactful outdoor learning experience that supports sustainable thinking and action, with the aim of developing a holistic approach to outdoor learning for sustainability. After three years of collaborative work within the network, in consultation with experts across Europe and through European conferences and workshops the Network launched the Real World Learning Hand Model; its vision for a truly embodied holistic approach to outdoor learning for sustainability.

The model sought to be a compass for practitioners in their thinking about, planning, delivering and evaluating outdoor learning experiences; a toy with which to play and explore within their education work, to challenge their thinking and practice; and a way of deepening learning experiences to the level of sustainability.

Since the conception of the RWL Hand Model in January 2014, a few educators in Field Studies Council (FSC) began to regularly use it in the planning, delivery and reflecting of outdoor teaching and learning experiences. Trials using the model in Devon and North Wales within FSC taught programmes of fieldwork have led to evolving practice, development of new approaches and a continuing renewal of approach amongst practitioners. Alongside the exploration of concepts within the model, a number of training events aimed at embedding this approach within outdoor teaching practice have taken place. These have lasted between half day tasters to 6 day immersive courses. At the end of 2014 the FSC made a bold statement at its annual staff conference by bringing a focus to behaviour change and carbon management as part of its ongoing endeavours to provide learning experiences in the outdoors. As a result of the above trials, courses and organisational focus, a wealth of insight into the model has emerged that could be highly valuable in facilitating behavioural change through a learning for sustainability approach based on motivations to act for a positive future. The aim of this document is to try to capture some understanding and to make it available to outdoor education practitioners who wish to embed this approach into their teaching. This will likely be most effective in conjunction with a training event or collaborative exploration of the model, though not necessarily exclusively.





Introducing 'The Hand'

The RWL model uses a hand as a metaphor for first-hand learning. A hand can take on many meanings; it can be a sign of action in the world, an offer of help or a symbol of friendship. It can represent a stand against oppression or injustice, and can enable creativity and resourcefulness. A hand can mean many things and can be used in many different ways.

In the centre of the model are **frames** which play a powerful role in how we understand and view the world around us. For example when we hear the word 'nature', subconsciously a bundle of different memories, emotions and values are activated. Such associations, often leading to strong narratives under the surface of our awareness, are called 'frames'. Frames in this context are used as a form of narrative to unite and guide the other elements of learning and the learners' lives. Connected through the frame are five further elements:

Understanding – based on the study of holistic science, understanding explores the processes and patterns of relationships that enable nature to sustain life. Scientific materialism has largely ignored these basic principles and led humanity towards ecological, and ultimately self, destruction. Recognising these fundamental causes of many of our global problems offers the hope for change. This is why a real world learning approach to science in and from the natural world is so important; for nature not only opens us up to our place in the world it also teaches us the principles for sustainable living.

Transferability – when different areas of life are involved in a learning process, it increases the possibility that learners will then act in respect of them. Positive emotions play a big part in learning. Transferring knowledge into different areas of life can connect learners more emotionally with a certain topic.

Experience – real experience in an outdoor setting is critical in terms of learning for sustainability. If people are to develop a love and concern for the earth, they need these direct experiences; otherwise, their knowing remains remote and theoretical and never touches them deeply. Experiential learning is particularly effective for developing action competences.

Empowerment – brings the learners to the centre of the learning experience: it's about recognising and realising their own humanity and their own ability to take action for positive change. Empowering learners enables them to cooperate and to take ownership of their learning.

Values – represent our guiding principles, our broadest motivations, influencing the attitudes we hold and how we act. It is therefore essential that we recognise the importance of values in our work as educators; and that we are very mindful about which values we wish to support and develop through our work.



A learning journey: why do we need a new model?

What is the justification for yet another educational model? Why should you be interested in reading further? This section will seek to inform the basis of the Hand Model approach.

Transformative Learning

The Hand Model is based upon an experiential educational perspective – and proposes that learning is the result of a construction of knowledge and understanding through direct experience.

In this sense learning is seen as a journey rather than a fixed destination, and within this journey the learner is encouraged to build connections between and make meaning from their experiences, rather than simply remembering facts. This way of seeing education is particularly useful when encouraging discussion around sustainable futures, as in order to deal with some of the most challenging issues of our time, it is important that our education system equips learners with the ability to make meaning within their lives. Not only do learners need to be able to make meaning from the situations they find themselves in, but in order to move beyond unsustainable behaviours, learning must become ‘transformative’ – becoming aware of and challenging our deeply held assumptions about the world.

Mixing the old with the new – ‘worldviews’

We face obstacles which make it difficult for us as educators to challenge unsustainable behaviours and offer new ways of thinking.

Everything from our way of viewing relationships in nature, to the decisions we make every day are informed by our ‘worldviews’, - a heady mix of cultural understanding and personal values and frames of mind. These worldviews enable us to make sense of the world according to our personal lives, but can also act as blocks to wider thinking, prohibiting us from seeing things from other perspectives, or from breaking out of certain behaviours. With guidance we can begin to reflect upon and understand our own personal and cultural worldviews with all of their pros and cons. We can use this understanding to help our learners to become more conscious of their place in the world, and to share the multiple perspectives of all life on the planet.

Advocacy and Transparency

We know that many of the current ways in which we live, and our associated behaviours, are contributing to an unsustainable world. There are some very big issues that require fundamental changes to the mainstream western lifestyle - more than just recycling or the occasional car share. No less than a total rethink in what we deem as ‘progress’ is needed, and a radical shift in the direction our society is headed. However, the mechanisms by which we shift society and individuals norms of behaviour and patterns of thought remain contentious. Some argue for a coercion approach – changing individual behaviour by incentives and reward, or by using sanctions. This approach looks at individuals as the primary agents of change, and attempts to change their behaviour. Another approach is to look at the systems and institutions within which those individuals exist (think about the influence of family life, school, work and social activities) and sees the mechanisms behind individual’s behaviours as having basis within these settings. Many of the initiatives we see aimed at changing behaviour are targeted using the first approach; however, emerging research suggests that it is equally important to look at the systemic root causes of behaviour. Therefore, behaviour change for sustainability is unlikely to find footing unless it holds meaning within the context in which learners live their lives. This is the rationale behind the transferability finger in the hand model. However, this also has implications for the learning institutions hoping to stimulate change. Firstly, if we are not transparent and open about our intentions, we will find it difficult to persuade learners to join us on this journey. Our actions as teachers, learning providers and



facilitators must match the outcomes we expect of our learners. Put simply, we, and the institutions we represent and operate within must be authentic; if we want change, we must be seen to change ourselves. Secondly, transparency also means less coercion and persuasion, and more critical reflective thinking and creativity; less certainty and more openness; less answers and more questions. If this seems scary then you're in the right place. This model aims to make all of these concepts easier to embody within your practice and will help you along this journey towards sustainable education.

Starting out: beginning to use the model

Moving from the ideas and concepts behind the model, this section takes a look at how the model might be used by educators in practice. It contains ways of bringing the model and its thinking into your practice, as well as a handful of approaches and activities you may wish to make use of.

Not a tick-list

It's tempting to look at the Hand Model as a set of 'standards' and 'expectations', indeed this is the language of much of our school-based teaching. However, there is a danger to seeing this model as a rigid framework. At no point during its conception have we claimed it holds all of the answers, nor should it be held up as the only approach. Rather, think of this as a pin board upon which to place your own ideas; make it your own and add your thoughts. Don't be afraid to experiment. Different situations call for different approaches. You may find that you identify more readily with some areas and find others more challenging. With time you will begin to embody an approach and make meaning from the abstract qualities of the model –this should be encouraged and championed! We are all different, and so our approaches to teaching should be diverse. Some days and sessions will lend themselves to different elements of the Hand, while others won't seem to get a look in. While this shouldn't put you off, it might highlight areas which are missing from your practice. Perhaps your sessions are very strong on scientific content but lack a self-directed element, or maybe you feel you have a strong ethical and values-based approach to your teaching, but you are struggling to facilitate connections into other areas of learners' lives. Hopefully the Model and supporting materials can guide you through this, and help to provoke creative practice. Finally, this should be a fun rather than a standardised process with pressure to perform; in that sense, the Hand is less of a model, and more of a toy, so enjoy playing around with it!

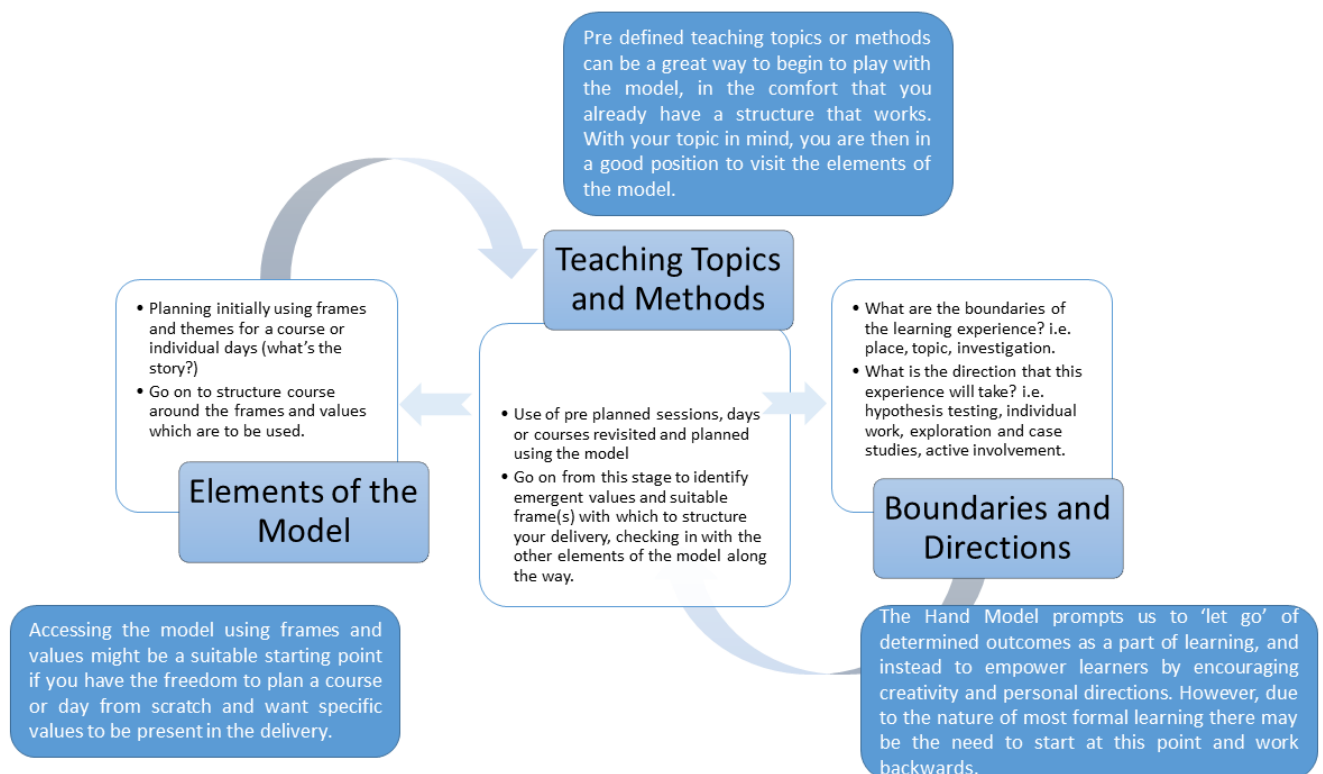
Group / Teacher contact

It may be helpful to get in touch with the group ahead of arrival to let them know that you plan to try a different approach. Teaching and learning approaches which embody sustainability require many changes in our approach as educators, but this may not necessarily be immediately apparent to visiting students and staff. These changes may be subtle, in the way questions are phrased, issues which are raised and the approach taken. However, if you plan to introduce new activities, develop certain aspects of the course or simply spend longer outdoors rather than in the classroom (or take classroom activities outside!), then it is advisable to let the person in charge of the group know. Generally so far, schools have been more than happy to accommodate a different approach, but be guided by their 'enthusiasm' as to how much they are willing to experiment with new ideas. It will be up to you to judge how much you want to try out and with whom.



Planning with the model

The planning and delivery of teaching and learning experiences are personal to the individual, however, the Hand Model offers some helpful guidelines for planning an experience, whether it's a single session/ lesson, a day or an entire course. While trialling the model we realised that while the model offers a degree of 'structure' if you want it, it is best used as a fluid, flexible guide rather than a fixed pro forma. This is especially the case when presented with days which have already been planned, outcomes which are predetermined or visiting staff who have a favoured approach. We recognise that any model which is to be used by outdoor educators working with the formal sector must be able to accommodate these demands, and that you won't always have a 'blank canvas' upon which to start your planning. The following entry points may be useful to some when considering the applicability of the model to their teaching and planning process (see diagram).



1. The 'Blank Canvas': Starting with Elements of the Model

If you have the luxury of designing a teaching experience from the 'ground up', whether as part of a taught course, or stand alone, the model will provide some useful guidelines for your thinking. You may wish to think about where the experience sits with the learners; for example, they may have just got off a bus from the city, and you have an afternoon to fill, or perhaps they are from a very different cultural background, or maybe it's the final morning before they depart and you wish to consolidate their experiences from the week.

Whatever the case, you might like to look at what that experience offers in relation to the elements of the model. Will the learners benefit from some self-directed learning, to prompt empowerment; are you able to link their home and community experiences with this place to transfer understanding?; could you link all of this into the universal principles of life?, and what type of frame could you use for this experience which helps to bring in bigger-than-self values and connects the different elements of the model?



2. **A structured approach:** teaching topics and methods

In the majority of cases you will be teaching courses or days which already have a familiar structure and which have attached to them a certain set of expectations. This is the case with most FSC taught courses. Teachers visiting with a group may be basing these expectations on previous years of visits, and this may be the first time you have taught them (see contacting teachers section). In this case, the approach might be to 'retro fit' elements of the model onto the course as you see fit. The way in which you go about this will vary between courses and will very much depend on circumstances such as the support of visiting staff, the need to resource the course, your time and personal style and approach.

In this case, the model can be used as a think-piece for your thoughts and reflections. It is likely that a frame can be used either explicitly or implicitly to effectively bring in elements of the model. The overall format of the day won't change dramatically, but your approach as an educator / facilitator will determine the path that learning takes throughout the course or day. Even the way in which questions are asked of learners, or the emphasis placed upon activities and the freedom given to undertake them will affect the learning outcomes and the values which the experience embodies. Using the model for this approach also allows reflection on where the opportunities and 'gaps' are.

3. **Outcomes:** boundaries and directions

Most formal learning experiences are based on deterministic outcomes and control of the direction of learning. The Hand Model provides a handrail to move away from this and into a more experiential, empowering and creative form of learning. However, it is recognised that while attempting to modify teaching practice to take into account the elements of the model, we will inevitably come up against the deterministic nature of education; be it pre-defined learning objectives, exam skills or time restrictions. When faced with this apparent stand-off between open and closed learning, it is easy to say 'this isn't appropriate here' of the Hand Model. However, to do so would be to turn our back on some essential thinking and understanding about learning for sustainability. So, we encourage you to make use of the hand in this scenario as a guiding light from which you may be able to select elements which you feel fit and may help you to link the experience into a more holistic and values based context.



Resources and Activities – ideas to use alongside the model

Tried and tested activities, some old, some new and ways of using them to provoke debate, conversation and to link back to the frame, offering a thread connecting days and sessions together.

Build a community

Building and maintaining community is essential if we are to find balanced ways of living within nature. Although it might seem too big and abstract to always talk about the role of ‘society’, we can model community on smaller scales, as a community of colleagues at work, a family sharing a house, or as a community of learners sharing a set of experiences.

This is less an activity, rather a set of principles which find their threads into learning journeys. On residential visits to a field centre, why not ask the newly arrived students ‘what makes a community?’ This can be done in the classroom, or even better, while walking to a field site. Take time to reflect on this question with them – how can we be a learning community? What do you need to enable you to learn? How can we help each other to achieve this idea of community? If you wish, you can draw up a list of expectations from the community or experience. Be sure to add your own thoughts!

Prior to this discussion (especially if done while out and about!) you may wish to ask participants to collect two contrasting objects, and as a start to discussing community, ask each participant to lay their two objects down in the middle of the discussion circle, and to explain what they have chosen and why. You should end with a good diverse mix of objects on the floor. There is diversity all around us in the world. In fact, diversity gives strength and resilience to living systems. We should aim to build diverse communities, including cultural backgrounds, ideas and perspectives. Take some time to consider this with your learners.

Frame on the board

While using a frame implicitly in your teaching can be useful to you as the facilitator as a guide during the teaching process, there may be times when you wish to use frames more openly. A number of occasions I have experimented with putting the frame on the board at the beginning of the day, or having it on a piece of paper to give out to learners in the field. Sometimes this may take on an interactive style, for example when teaching a day focusing on downstream change in rivers I used the frame “water flows through all life, bringing change and balance”. This phrase was written on the board when the class came into the room in the morning. As a starter activity I asked them to annotate the phrase with as many thoughts related to the frame as they could think of. To prompt them I asked them to think about river processes; erosion, deposition and transportation as well as landforms and interactions. Depending on the focus of the day you may wish to ask them to pay attention to particular aspects. It can also be approached by unpacking and annotating each of the key words, thus often taking a much broader view. For example ‘water’ can be unpacked into exploring the different forms it takes thus linking rivers, glaciers, oceans and clouds – and it’s connecting role in space and time. Another approach might be to have copies of the frame ready to give out in the field, this could then provide discussion opportunities to start fieldwork.



Role play

Role play can be a powerful tool for challenging learners' worldviews. By asking them to step into the shoes of another for a short while it is possible to connect learning with deeper understandings relating to values of respect and empathy. To build upon this, it can be useful to bring learners into discussion/debate with each other while retaining their role play views. Depending on the group and situation it should be possible to provoke debate by asking controversial questions. While this might be more challenging to manage, the variety of views should allow for exploration under the surface of the topic of focus.

Self-directed investigations

The role of self-directed activity is important in allowing learners to experience empowerment, but can be one of the most difficult and daunting aspects of education. Letting go of group control and teacher directed learning seems to be contrary to much of our training, but this has been shown to be where significant learning can take place. True self-directed activity is unstructured, and the outcome unpredictable and unknown. While this may be uncomfortable for many it is possible to fit in self-directed activity into the investigation process. While students carrying out a field-investigation may not be true self-directed learning (who sets the topic of investigation?), elements of self-direction can be allowed to occur. Rather than selecting the equipment to take into the field, deciding on recording sheets or methodologies before meeting your class in the morning, why not simply brief them on the outline of the day and let them pick what to do and what to take? It should be recognised that this is not the normal approach to teaching, especially not in secondary education, so it may be necessary to structure and scaffold this approach into your teaching. For example, if you have a group on a residential field course for four days you may wish to formally structure the first day investigation, on the second day why not add more flexibility (you might like to give them a choice of equipment or methods), a bit more on the third, and by the fourth allow them to design their own methods and simply open the equipment store and let them in! The freedom afforded by this approach will provide empowerment, provoke curiosity, inspire creativity and result in a diverse and perhaps surprising set of investigations. I once had a group who decided to measure well-being in a local village by smiling at everybody they walked past and tallying the number of smiles they had back!

Happy Valley

This activity came about through a desire to connect learners emotionally to the issues surrounding flooding, including the decisions facing planners, the discussions surrounding flood management and the need for our lives to be seen as *a part of* rather than *apart from* nature.

Activity: Give students a small object which represents a house (I use mini-whiteboard erasers, but you could make use of almost any object, even stones!), perhaps the beginning of the day, and on the way to the river ask them to imagine their house and that they are living there with all of their possessions and friends / family etc. At the river, perhaps after carrying out fieldwork on flooding, place a boundary (a throwline works well) on the ground. The size of the boundary will depend on the number of students, but perhaps a couple of m². Place something to represent a river running through the boundary (measuring staff cases work well, and are often blue!), something to represent a road, perhaps crossing the river (rulers?) and some fields (rubber gloves!). The next step is to gather the students and introduce them to the valley – tell them the story of 'Happy Valley' with the River Hapus running through –oh, what a tranquil place to live! Ask them to think about where they might like to live (if you want, you could split



them into different groups – farmers, residents, shop owners etc), and what they need to be close to. Next ask them to place their houses in the valley.

Now, let's be honest about the River Hapus. Although it's beautiful and tranquil, it also frequently floods, sometimes very badly... oh dear. Remove some of the closest houses to the river – who's were they? How do they feel? Ask them to stand separately. Why did the river flood? What now? This discussion may become heated. Ask them provocative questions to spur them on like: "who should pay for the damage?", and "shall we invest in flood defences for the houses in the valley?" As they are debating, another flood comes, and sweeps through more houses! Ask those affected to stand with the others. As more victims emerge, continue to facilitate discussion. It is useful to have prepared some questions to ask them as the activity plays.

Finally, to conclude, think about the justice of this situation. Who is affected and why? What should be done? This activity can be used in conjunction with the frame 'small changes can have big impacts'. As well as evoking an emotional response to the learning experience, this activity also offers many opportunities to introduce holistic principles of life and global issues relating to the water cycle, climate change, farming practices and consumption. This style of transdisciplinary learning has been enthusiastically met by visiting teachers.

Micropark

Gaining a deeper understanding of sustainability requires understanding of the interlinked, complex and multiple views which exist in many situations. Unsustainability is in many ways an easier topic to grasp than sustainability. When confronted with the many views of different stakeholders we begin to understand the realities behind issues such as resource depletion, biodiversity loss and degradation of the environment.

The Micro Park activity is a type of simulation which enables learners to gain deeper insights into these complex interactions.

Begin by asking learners to search for "worlds within worlds", which may entail them using magnifying glasses to look for smaller worlds within our large world. Talk about worlds being nested within other worlds with a network of links and connections between them. Whilst they are searching, find a suitably interesting and diverse patch of ground preferably with some vegetation and place a boundary around the edge. The space within the boundary should be small (1 – 2 m²). Invite the learners to approach the boundary of this world, ask them to be respectful and not to cross the boundary. Saying that you wish to share this world with them but they mustn't touch they must only look. Allow them to make their way around the edge of the boundary searching and looking with a magnifying glass and familiarising themselves with your world. Once they are familiar with the world tell them a little about it, suggest there are fanciful and fantastic locations within this world and talk about specific features – a patch of grass maybe dense woodlands, small twigs may be a magical tree, some fallen leaves may be a dark mysterious set of caves and so on...

After a small amount of time everybody's imagination will be fixed very much within this new miniature world. Next, share with the group that you would like to invite them to take on different roles and to make plans for this 'micropark'. Ask them to get into groups with people they feel they broadly agree with and allocate each group the responsibility of a particular stakeholder (offer some guided choice over this); these may include things like foresters, farmers, local people, adventure tourism agency, nature. As many as you wish, but four should suffice. Give each group a different colour set of two flags or markers, and two lengths of coloured wool or string (each one 60 cm or so in length). Ask them to plan which areas



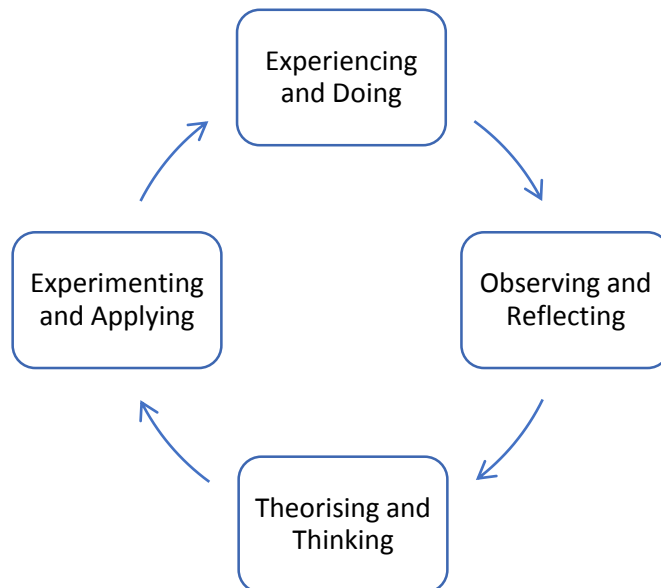
they would like to make use of and are important to them. The markers can be placed on specific points, whilst the lengths of string may denote areas or lines of interest. After a small amount of time of discussion within their groups (encouraged them to walk around the boundary of the park) invite the groups one at a time to place their markers and boundaries within the world. As each group takes a turn and describes which areas are of importance and why a degree of overlap between stakeholders should begin to occur. After all stakeholders have placed their markers ask them about the areas of conflict. Why do some areas provoke conflicts? Can this be resolved? What are the alternatives? Who gets to decide? You may wish to take this discussion further depending on time or to link it to the explorations of the day. You may also deem it suitable to step back and allow the discussions, debates and compromises to unfold (although be present to mediate if needed). This sort of activity is well suited to exploring issues around areas such as conservation, decision-making in coastal defences, or tourist impacts in a national park. When we begin to zoom out we notice that many of the issues from the small world exist in the larger world surrounding us. So by exploring the issues on a small-scale we can connect seemingly different distinct issues on the large-scale.



Theoretical Background to the Model

A more detailed introduction to the theoretical context underpinning the model, and ideas to embed reflection within the learning experiences you offer.

Experiential Learning – head, hand and heart



(Adapted from Kolb, 1984)

Experiential learning is the process by which we learn as a result of direct, every day experience and personal reflection. The learner has the opportunity to apply their skills, understandings and feelings to the learning process. This process can be summarised by the experiential learning cycle (above). The process by which opposite concepts in the cycle are reconciled is key to the experiential learning process; as new knowledge is created through transformation of experience.

In the version of the learning cycle above we can see that although theorising and thinking are important aspects of the learning process, abstraction of ideas and theories hold meaning only in relation to direct experience. In the hand model, the experience finger points to the need to engage ‘the head, hand and heart’ as part of a full learning experience. These aspects can be seen in the cycle above.

Reflection

Fundamental to this process other than the direct experience itself (hand), is the space and time to personally reflect on the learning process (heart). Reflection has four specific roles within learning:

- Helps to deepen, and make the learning experience more meaningful.
- Modifies previously held understanding through representation, (writing, language, drawing etc)
- Allows previous understanding to be reconsidered in light of new experience (through a different frame of reference)
- Can generate new meaningful ideas, through a process of reframing¹

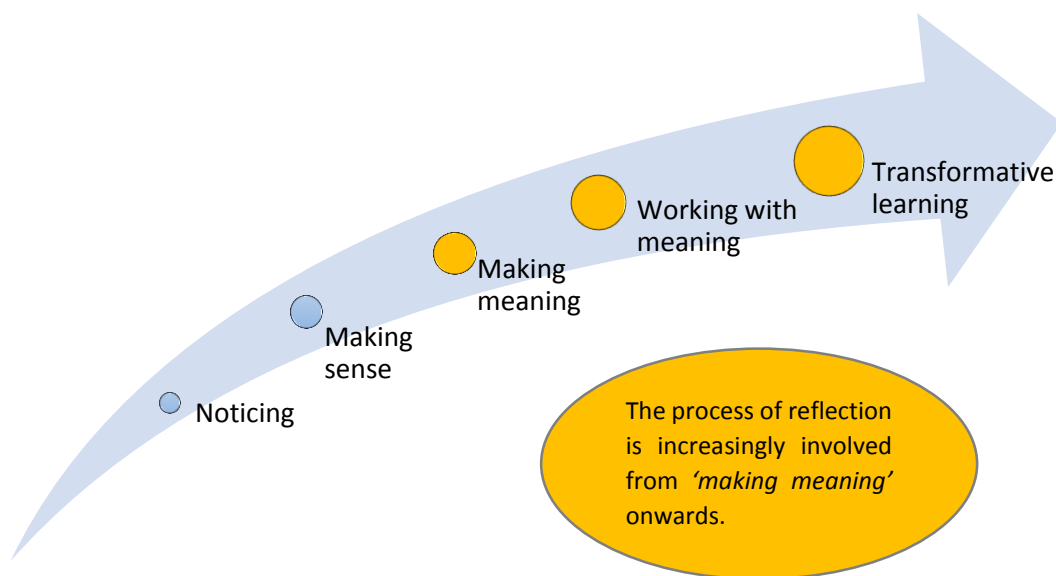
¹ Moon, J. A. (2004). A handbook of reflective and experiential learning : theory and practice. London ; New York, RoutledgeFalmer.



A distinction is made between reflection and critical reflection; where reflection is the revisiting and correcting of “distortions in our beliefs and errors in our problem solving”, and critical reflection requires us to ask questions of the structure upon which our beliefs have been built². The latter requiring a degree of intent in the learner³. In terms of the Hand Model, this can be seen in the ‘transferability finger’, where learners are encouraged to challenge their own perceptions and relate to the material of learning on different levels and from alternate perspectives; a process which requires a degree of critical reflection.

Deep vs Surface Learning

It is not enough to simply use the term ‘learning’, without recognising that the relationship between reflection and learning occurs on a variety of levels, and that not all learning is reflective. The terms deep and surface approaches to learning, whereby a surface approach constitutes a superficial engagement with the material of learning, through memorisation of facts, and a deep approach involves a greater depth of understanding, but most importantly an application of understanding to make meaning. Reflection becomes an increasingly essential component of deep learning (see: Moon 2004).



Deep Learning Continuum (modified from Moon, 2004)

² Mezirow, J. (1990). "How critical reflection triggers transformative learning." Fostering critical reflection in adulthood: 1-20.

³ Boud, D., et al. (1985). Reflection: Turning experience into learning, Routledge.



From Noticing to Meaning

In order for learning to move beyond simply 'making sense' of new knowledge, into 'making' and 'working with meaning', and finally into 'transformative learning' it is important for reflection to occur. Transformative learning is summarised by Boud et al as; "the process of becoming critically aware of how and why our assumptions about the world in which we operate have come to constrain the way we see ourselves and our relationships"⁴. Jack Mezirow, who has carried out work into the nature of transformative learning, suggests that reflection should be a 'critique of the presuppositions on which our beliefs have been built'⁵. Transformative learning results from a shift in perspective or 'frames of reference', which are "the structures of assumptions through which we understand our experiences [and consist of] associations, concepts, values, feelings [and] conditioned responses". In the model this idea is simply called 'frames'.

⁴ Boud, D., et al. (1985). Reflection: Turning experience into learning, Routledge.

⁵ Mezirow, J. (1990). "How critical reflection triggers transformative learning." Fostering critical reflection in adulthood: 1-20.



Case studies – reflection and feedback

Ways of reflecting on activities with groups and personal reflection tasks.

One word reflections – ask learners to think back over an experience, or recognise something they are directly experiencing, and to encapsulate it in a single word. When words are collected from a whole group of learners, and possibly repeatedly throughout a day or course, the collection of words can become a powerful group reflection. When read back to the group with considered use of tempo, the addition of the occasional connecting word, or use of pauses for emphasis, the collection can become very poetic. This form of reflection never fails to gain a positive response and a sense of true ownership of the experience from the group. Layering the words on to an image taken during the experience (which can be displayed on the wall at school) can offer this group reflection as a stimulation for later reflection back in their normal learning setting, and thus connecting the learning experience with their school context.

A take-home thought – at the end of a day or course ask the learners to take themselves on a thought journey back through that time and write down a ‘big picture’ thought they will take away with them. Something that captured them in some way, struck a chord, or something they’d like to consider further or apply in their lives. They can write it on a scrap of paper and give it you, they could all write them on the board, or you could give them a postcard to write it on to send to themselves. This can be very helpful in seeing if a frame has had an impact on the learners’ thinking.

Photos in a page – at the end of the course prepare an A3 page per day, with a photo of a memorable moment from the day in the middle of each. Leave plenty of space blank around the photo. Ask learners to write down their thoughts and reflections about the day in the space around the edge. They may work as a small group, drawing ideas and memories out from each other. Or, if you prefer allow them to roam and add their reflections in their own time. Allow plenty of time as discussions will find their way and shouldn’t be forced. However, two or three guiding questions may be helpful. Some examples of some I have asked are; “what new knowledge have you gained?”, “How did this develop your understanding?”, “How has this shaped your future?”, “What challenged you?” and “What inspired you?”

Draw around hand - give each learner a piece of paper or on one large piece of paper (wallpaper or lining paper works well), and ask them to draw around their hand. Giving plenty of space between each question, ask them to reflect on aspects of the day/course. You may wish to adapt the example questions given in ‘photos in page’ above, or come up with your own specific to yours and your learners’ experiences.

Give it a Frame

A table showing the days we commonly teach and some suggested frames. This list is far from comprehensive and indeed, it is far better to frame your teaching with reference to the setting, learners and your own experiences. These examples should provide ideas of where and how to bring frames into your teaching.

Frames	Teaching topic examples	Transferability
Water flows through all life, bringing balance and change	Rivers, hydrology, flooding, glaciation, freshwater ecology	Explore water's journey through the landscape (and through us!) shaping life along its route; cycling, changing and bringing balance through erosion and deposition, transportation of nutrients and minerals. Connecting this flow of water with the life in and around the water being studied. Developing thinking on micro scales within organisms, on landscape scale through river systems and on the planetary scale of the water cycle.
Small changes can have big impacts	Flooding, coastal management and processes, freshwater ecology,	Changes which occur in living and inanimate systems can have profound affects in unexpected ways; for example, the removal of trees in the upper catchment of a river may cause flooding downstream, or the closure of a business in a city centre may have drastic repercussions in the local economy. In the same way small positive actions by an individual can be seen to potentially have big impacts, for the individual themselves on different levels and timescales and also for the world at large. Collective small actions can be seen to be large actions.
The survival of all life requires adaptation to change	Succession, coastal flooding / management, extreme weather, woodland ecosystems, rural change, urban change	The resilience of systems depends on their ability to absorb and adapt to change. Living systems involve an interplay between living and non-living elements of the environment, including multiple feedback loops which maintain stability through change. Changes over time may result in new equilibriums between these elements, and thus different environments (succession). We can see this happening too in a human context. Being resilient to change requires adaptation and flexibility; parallels can be seen between ecological concepts such as succession, and changes in our communities, or how we deal with environmental change.
Life can be enhanced if abilities are shared	Farming, rural / urban change/ rebranding	Sharing abilities, knowledge and understanding between friends, colleagues and generations helps us to ground ourselves within our communities and places of work. Collective rather than individual action is better suited to coping with change and can lead to creative and innovative actions (for example, see the transition movement). Nature is also part of our sharing community. Harmony with the natural environment is essential for a sustainable world. Not only can we learn valuable lessons from nature, but we can begin to see our dependence on the wider biosphere. Think about our dependence on other organisms for producing the food we eat, or in supporting our lives. A sustainable living community is a sharing community, based on exchange rather than taking.
Maintaining balance requires giving and taking	Coastal processes and management, flooding, ecosystems	The balance of life is not static. Systems are dynamic and living, and therefore in a state of constant change. Balance in this respect can be observed in river and coastal systems; through erosion and deposition shaping landforms, where stability means regular change. When settlements are faced with the threat of flooding and erosion, it is as a result of this dynamic balance interacting with our static systems. We can apply this frame for thinking about patterns of production and consumption – natural systems when used as a resource can become degraded and depleted, unless the taking is matched with giving back.
The sun powers us all	Ecosystems, succession, conservation, energy, farming	It is easy to see how the energy of the sun powers plants through photosynthesis, but what about us? All food and most of our energy is in some way driven by the power of the sun. From food crops to fossil fuels, oxygen to cement and wind energy to clothing; we rely on solar rays reaching us from many hundreds of thousands of kilometres away. Using this view, we begin to see the many connections between components of life.
This time we share with the past and the future	Glaciation, geology, conservation, succession, rural/urban change	We do not stand alone isolated in time and space. Just as we share our lives with the world around us, our connections stretch far into the past and onward into the future. We see this in post-glacial relic landforms, geological strata exposed by tectonic upheaval, the stories passed down through generations, abandoned shops in city centres and a rotting tree inhabited by fungi and insects. So too will the present reverberate into the future. No action is without consequences, no decision without values.

Case Studies – introducing frames to a group

Many of these case studies focus on the use of frames, while some look at activities and approaches which have been used as part of a learning experience. There are many more ways to use a frame in education – this collection simply offers a glimpse of how you might begin.

Case study: a farm visit

During a spring residential course we were using the frame *'the survival of all life requires adaptation to change'* to explore concepts of adaptation and community, through topics related to coastal erosion and defences, succession and rural change. On the last day, we wanted something which would bring the experiences of the week together in an inspiring manner, which would engage the students with their 'head, hand and heart'. Although we had been discussing changes in the landscape and sustainability related to the natural and the human environment, there lacked a grounding of this rather abstract 'theory' in the real life practice of the world. We decided that we should visit a farm on the final afternoon to meet the farmer (Mike) for a farm tour and some activity. We met Mike at lunch time and he took us to see his farm. The students were captured by his dedication to his way of life, his honesty and pragmatism. He showed us his animals and talked of life as a farmer. The students had many questions for him. Although we had carried out some data collection in the local villages in the morning, the visiting teachers had agreed not to collect data on the farm. Instead we helped out on the agroforestry project there, with two groups of students splitting off to weed runner beans, mulch fruit trees and plant and water squash. We had liaised with the visiting school to agree this in advance and to check protocol with school based risk assessments. The activity lasted for an hour, during which time the students were able to choose their own pace of work. Initial reluctance at getting hands dirty quickly gave way to enthusiastic participation. Upon arrival back at the field centre, we spent 20 minutes reflecting on the farm visit. The students had feelings relating to empathy for Mike, and his life as a farmer, and interrelated discussions from earlier in the week were revisited in the context of the farm visit. The relatively unstructured afternoon had provided a hook for students to reflect on the deeper meaning behind the explorations of the week. **Tip: Meeting up with a member of the local community as part of a teaching programme can provide a valuable element of authenticity and create opportunities for reflection and self-directed learning. Local farms are ideal places to visit with groups of all ages and need not be a formal part of the day – why not just stop off for an hour on the way back from another location? Many farms have access to HLS funding and will be able to provide guided walks and talks by prior arrangement.**

Case Study: using an overall frame

During the planning of a four day course in the summer, I decided to use a frame to thread together the topics, and to provide a degree of continuity throughout the week. The frame I used was *'South Devon is a diverse and interconnected place'*. This was introduced to the group on the first night, by way of addressing the question: "Why here?" We explored the reasons and decided that Devon is indeed a diverse, and as we later found out, an interconnected place. The undercurrent of this frame kept re-emerging later in the week as we explored the coast, along rivers and villages in the area. Although each day had its own sub-frame, the overall frame helped to give context to the week – certainly for me, and hopefully for the learners too! **Tip: Try nesting frames within other frames. In the example above, one frame was used to give context to the location, while other frames were used to guide learning on individual days. This may help to keep an overall momentum to the course while providing a focus for each teaching day or session.**

Case Study: using a frame each day/topic

In the early stages of trailing the model I felt that each teaching day or topic should be held together with its own unique frame. I began by thinking about the topic and accessed the process through the pre-defined days we already taught. I then wondered what values were already implicit in the teaching of these days and then began to work around these. I found that it was important to make sure that a range of values were present in the teaching across the days, so sometimes the emphasis changed. The frames were sometimes used explicitly, whereby I would make direct reference to them, or even have them on the board when the students arrived in the morning. Other days I used the frames as a more implicit container for the values I wanted the students to explore throughout the day. **Tip: Decide what the best approach is for you and your learners. Will they benefit from exploring the frame together before leaving the classroom, in the field, or at the end of the day? Or is it best to refer to the frame without keeping it at the front of the discussion, simply using it to guide and to transfer learning across contexts?**

Case Study: using a single frame for multiple days/topics

During the planning for an AQA A2 course in the autumn, I was struggling to decide upon the narrative for one of the days; it was a local rural morning which followed an urban day in Plymouth – it seemed superficial to use a frame to hang a single morning on – and, to my mind, was confusing. Eventually it clicked; what I did was to plan the entire course using a single thread of narrative that held common ground between all of the teaching topics. We were going to look at flooding and erosion on the coast, ecosystems and succession, also on the coast (this was to be the main study day), urban changes in Plymouth post Second World War, and rural decline in a local village... a mix of physical and human geography days. The common thread, taken from the main study day was adaptation and resilience; key concepts for ecosystems and succession, but also applicable to coastal management, with strong links to post-war reconstruction of Plymouth and the loss of resilience in the local villages, so the frame I worked with throughout the course was “the survival of all life requires adaptation to change”. Examples of adaptation to change could be used and recognised not only in the succession of plant species on the beach as a result of physical changes, but also in human communities. **Tip: Use metaphors to bring meaning into learning experiences. Think about how a particular discussion or topic finds resonance elsewhere in your planning and teaching, for example – how can the life of plants on a shingle beach help us to understand the situation of a coastal village under threat of flooding and erosion?**

Case Study: A Level university visit

While planning a progression programme to introduce A-level geography students to studying an undergraduate geography degree at Exeter, we decided to frame the programme around the idea of sharing abilities – ‘life can be enhanced if abilities are shared’. We worked with this concept in the first session, as students introduced themselves to each other and went on a tour of the university during which they saw practical research (core samples) into climate change and senior researchers helping undergraduates with their work. The students were encouraged to think of the university as a place where abilities are routinely shared, and to apply that thinking to tackling climate change. A taught session then emphasised how climate change could affect the local area and the need for adaptation and resilience. In the final session the students collaborated and worked together to research and design fieldwork activities to investigate adaptation to climate change in Exeter. **Tip: Remind learners that their learning experiences are a journey, and use a frame as a guide or compass. It may not be necessary (or possible!) to bring all elements of the model in at once. Different days/sessions may yield different opportunities to engage with the model.**

Case Study: Giving meaning to a landscape

While we tend to build up meaning and understanding of our surroundings through layers of experiences and memories, many outdoor teaching activities take place in landscapes which may be unfamiliar and disconnected from learners. This is particularly so on residential field courses or day excursions. However, every landscape holds stories and common connections which may echo in learner's lives. While walking along the coastal path with a group of trainee teachers, we used the frame '*this time we share with the past and the future*'. Initially discussing the geography and geology of the formation of the beach having given them a piece of paper with this frame written on it. Over the next section of the walk we talked in pairs about the meaning of this phrase, until we took a rest overlooking the bay. Here we opened the discussion to ask 'what other stories [apart from the beach formation] does this landscape/place tell about the past and the future?' This allowed for exploration of the links between scales of time and space, as well as between the location and the learners own lives. Some of the comments related to the industries of the past, the history of the bay in relation to the universe (someone mentioned the sun), the formation of coastal landforms and the future of sea level rise as a result of climate change. This open exploration of a frame or way of thinking can create diverse opportunities to take learning further, build connections with learners' lives and to offer hooks from which to hang future learning. **Tip: Use a frame to hold hidden meaning for learners – allow this meaning to become personal to your group, and try not to lead it too much. An 'unfamiliar' landscape may hold many more links to our lives than we first recognise!**

Questions and Concerns

Just a handful of questions and concerns raised by those who have been introduced to the model. It is fine to be apprehensive and uncertain. Why not add a few of your own questions to this list and talk to your colleagues about them?

I don't feel confident enough to try a new approach – what if I get it wrong?

While confidence can be useful for trying out new ideas, it is not essential to be totally out of your comfort zone all of the time. Many of us have colleagues around us or teach in teams. This can be the perfect place to share the discomfort of trying new things and playing with new ideas. Perhaps someone has some experience that could be useful with a day you are planning? Even simply talking through your ideas with another person can help. Above all, remember there are no set answers and good practice is to innovate and be creative. We expect our learners to challenge themselves and step into the unknown every day, so why not do it ourselves?

Who says this is the right approach?

There is no right and wrong, and there are as many approaches as there are of you. The Hand Model is the result of three years of European project work, involving multiple working groups distilling the most relevant of recent research in outdoor learning for sustainability. However, this isn't a methodology, structure or tick list, rather a compass for educators who wish to make use of the latest thinking in their field.

Is what I'm doing now wrong then?

The model isn't intended to be a criticism of current practice, rather a lens through which to view alternative practice. It comes with a recognition that the current 'ways of doing things' are largely strengthening an unsustainable view of the world. Outdoor education offers a wonderful forum within which to look through fresh eyes and to challenge embedded worldviews.

The day just isn't long enough to get anything else in!

It can sometimes seem like we are constantly asked to pack more in to our days and that there aren't enough hours to do it. The Hand Model offers opportunities for deeper, more meaningful learning in the real world. You may like to think of it not as more things to fit in, rather, to engage with current content and practice more deeply. Having said that, one of the most powerful learning tools can be to give students more time and space to reflect, so there may be times when what you choose to include becomes a matter of priority.

I already teach about sustainability... isn't that enough?

One of our biggest challenges as educators is to change the way we approach the concept of learning. Instrumental learning involves the uptake of facts and knowledge as if our minds were depositories of information for later recall. This form of learning may serve us well in exams, but benefits us very little when trying to apply knowledge to the real world. Intrinsic learning places emphasis on the transferability of conceptual knowledge and is situated in experience. This form of learning connects us more deeply to the world around us and equips us to be more resilient learners. When learning 'about' sustainability, we tend to view it as another 'topic' which sits abstractly separate to the rest of the curriculum. The intrinsic view prompts us to see learning 'as' sustainability, in which boundaries disappear and every concept and topic is interlinked and saturated with meaning.

Is there a specific age group this is designed for?

The model was designed with the broadest learning principles in mind, applicable to any age group and any ability. It is not a set of standards, or a lesson plan and its interpretation is up to you. The model attempts to make accessible the essence of experiences which connect us with our world, and find deep meaning for learners. As such, ways in which the model is interpreted will differ depending on who uses it, and in what situation.

My students just aren't interested in what I'm trying to do. They don't get the bigger picture. What can I do?

It is true that every group is different and present different interactions and challenges. You may find that a particular approach or frame of reference which worked well with one group didn't engage another. The reality is that you will have to experiment. It can be helpful to know a little about where the group has come from, and to try to transfer their experiences into the teaching you offer. Have a look at the case studies for some ideas.

Further reading and references

Selected texts and references for continuing the journey

Educational practice

Beames, S., et al. (2012). Learning outside the classroom: theory and guidelines for practice, Routledge.

Cornell, J. (2009). Sharing nature with children, Dawn Publications.

Chambers, R. (2002). Participatory workshops: a sourcebook of 21 sets of ideas and activities, Earthscan.

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Ecological Thinking

Orr, D. W. (1992). Ecological literacy: Education and the transition to a postmodern world, Suny Press.

Stibbe, A. (2009). The handbook of sustainability literacy: skills for a changing world, Green Books Dartington.

Suzuki, D. (2007). The Sacred Balance: Rediscovering Our Place in Nature, Updated and Expanded, Greystone Books Ltd.

Values + Ethics

Berry, W. (2010). What are people for?: Essays, Counterpoint Press.

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Leopold, A. (1989). A Sand County almanac, and sketches here and there, Oxford University Press.

PIRC (2011). Common Cause Handbook. <http://valuesandframes.org/>, PIRC.

Holistic Science

Capra, F. (2004). The hidden connections: A science for sustainable living, Anchor.

Sterling, S. R. and W. Scotland (2005). Linking Thinking: New perspectives on thinking and learning for sustainability, WWF Scotland.

Hand Model Supporting Materials

Available online: <http://www.rwlnetwork.org/rwl-model.aspx>

Starting at the end...

Hi. As you will have seen by scrolling or flicking your way here there's quite a lot of content. Like you have done, by following your curiosity to start at the end shows learning doesn't have to be a linear process. In fact, it is often much more exciting and inspiring when it isn't. So, having started here at the end don't feel bound to follow the document through page by page. Dip in and out, pick and choose... continue to follow your curiosity!

The first few pages are a bit of a scene setter (pp 3-5), the next section is about applying this approach in FSC (pp 5-12), then some theoretical background (pp 12-15), followed by some ideas for using reflection and feedback (pp 15-16), a table showing how to use frames in your teaching with some helpful examples (pp 16), some case studies of how to use frames in your teaching (pp 17-20) some pre-emptive responses to questions and concerns you may have (pp 20) and finally ideas for further reading (pp 22). We hope you find it useful.

<http://www.rwlnetwork.org/>