



# Nature as a Teacher in Youth Work

Manual for promoting Nature Intelligence  
in non-formal education programmes  
to connect young people  
with nature

Agnes van den Berg, Angelica Paci,  
Helena Kosková, Karmen Murn,  
Francesca Salmeri &  
Thomas Albers



This manual is part of the Erasmus+ Strategic Partnership “Nature Intelligence in Youth Work”, which is funded under the Erasmus+ Programme, project number 2020-2-NL02-KA205-003082.

The project partners include: Anatta Foundation (Netherlands), IVN Environmental Education (Netherlands), Kamaleonte ASD APS (Italy), Zavod Ambitia (Slovenia) and Čia Čekija – Natural Spirit (Czech Republic)

Details of the full report, youth work curriculum and other documents are available from the project website: [www.natureintelligence.eu](http://www.natureintelligence.eu)

Project idea and coordination: Dr. Thomas Albers and Prof. Dr. Agnes van den Berg. Anatta Foundation, the Netherlands.

Authors (in alphabetic order): Dr. Thomas Albers, Prof. Agnes van den Berg, Helena Kosková, Karmen Murn, Angelica Paci and Francesca Salmeri.

Contributors: Mario D’Agostino, Joris Buis, Honza Látal, Nils Leichsenring, and Kim de Rijk.

Proofreading: Inès Aguas

Graphic design: Darjan Bunta  
Images: [www.freepik.com](http://www.freepik.com)

Suggested full report citation: Van den Berg, A.E., Paci, A., Kosková, H., Murn, K., Salmeri, F. & Albers, T. (2022). Nature as a Teacher in Youth Work. *Manual for promoting Nature Intelligence in non-formal education programmes to connect young people with nature*. Aalten: Anatta Foundation.

Copyright © 2022 the authors. The content, or parts of it, can be used free of charge for non-commercial purposes only if the authors are appropriately accredited.

The European Commission’s support in the production of this publication does not constitute an endorsement of its contents, which solely reflect the views of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



# Table of Content

## Welcome to all readers!

- For whom is this manual? 4
- Aim of this manual 4
- Non-formal education 4
- How was this manual developed? 4
- Overview of this manual 5
- Background of this manual: The story of the wasp 5

## Part 1 Introduction to NQ

### The concept of Nature Intelligence

- The human-nature connection 7
- Cognition 8
- Emotion 8
- Spirit 8
- Action 8
- NQ as an emergent property 8
- Test your nature intelligence 9
- The NQ-36 test 9
- Cognitive Dimension 10
- Emotional Dimension 10
- Spirit Dimension 11
- Action Dimension 11

### Addressing NQ in youth work: principles and guidelines

- The intelligence of nature 12
- Wholeness 13
- Diversity 14
- Cycles 15
- Forces 16
- Using the principles and guidelines 17
- How were the principles developed? 18

## Part 2 Inspirational Narratives from the Field of Youth Work

### Four Narratives

- NARRATIVE 1: The transformative power of the bonfire 22
- NARRATIVE 2: Dog Houses 24
- NARRATIVE 3: Winter Solstice Labyrinth 26
- NARRATIVE 4: Images of nature 28

## Part 3 The NQ Youth Programme Design Process

### A stepwise approach

- General approach 31
- Step-by-step guide 31
- Work in progress 31

## References

## APPENDIX A: Template with example reflection questions for individual evaluation of an NQ-programme

# Welcome to all readers!



In the current world of never-ending technostress and screen addiction, young people are increasingly losing their connection with nature. This manual introduces the concept of Nature Intelligence (NQ) as a source of inspiration for youth workers to reconnect young people (15-25 years) with nature.

## For whom is this manual?

We reach out to all youth workers, educators, administrators, volunteers, or programme developers who want to use 'nature as a teacher' to enrich the quality and impact of non-formal education programmes. These programmes include environmental education and other outdoor approaches, such as scouting clubs, but could also extend to more general youth work in urban and indoor settings, including community based centres, youth clubs, arts and crafts programmes, and other initiatives. Similarly, the content may also be applied to programmes aiming at improving the wellbeing of young people using nature as a main ingredient.

## Aim of this manual

In this manual, we give you content and inspiration for developing non-formal education programmes and activities that aim at promoting nature connectedness in youth work, as well as nurturing young people's own Nature Intelligence to connect to nature and stimulate them to use this connection for their own health and the health of the planet. You can use the ideas in this manual as a foundation for new programmes and activities or to enrich existing ones. You can use the content of this manual regardless of your own experience with nature-based educational programmes. The content is designed to be universally applicable, allowing you to start from scratch or to expand existing programmes.

## Non-formal education

As a reader of this manual, you are probably familiar with the concept of non-formal education. Still, as a quick reminder, please do remember that 'non-formal education' represents an experiential approach to youth work that takes place outside of a formal learning system in a diverse range of settings and situations. It requires intentional, voluntary and active participation, and is, as such, closely linked to the participants' own needs, wishes and interests. Generally, the approach is holistic and therefore the experiences provided aim at involving participants at a cognitive, physical, emotional and sensorial level. Programmes can be small or large and can range from short-term, one-time events or activities to long-term, youth capacity building efforts. Nature teaches us that learning is a moving experience and that we are nature too. We are therefore made to learn by experiencing the environment and through the environment itself. The brain is in the body and the body is in the world, so, when designing your programmes or activities and practices for nurturing NQ, take young people into nature as much as possible.

## How was this manual developed?

This manual is part of a project aimed at developing Nature Intelligence in young people funded by the EU Erasmus+ programme. The project fits within the youth strategy of the European Union (2019-2027) that focuses on the connection, engagement, and empowerment of young people. The project comprises three outputs: a conceptual framework **01**, a manual (which you are reading now) and an online training course. All of these three outputs can be downloaded for free from the website [www.natureintelligence.eu](http://www.natureintelligence.eu).



## Overview of this manual

This manual is divided into three parts. The first part gives you the content for working with Nature Intelligence in your organization. After a brief introduction to the concept of NQ, we describe four unique principles for facilitating NQ in youth work: *wholeness, diversity, cycles and forces*.

The second part helps you to 'put the theory into practice'. We begin by sharing some personal stories that illustrate how these principles come together in youth work to nurture NQ. We then present a step by step approach to integrating the concept of NQ in existing non-formal education programmes. For each step, specific actions are indicated along with a description of outcomes. These outcomes help you to evaluate whether the steps and actions have been completed successfully.

In the third part we present a stepwise approach for how to integrate the concept of NQ in non-formal education programmes. For each step specific actions are specified along with a description of outcomes. These outcomes help you to evaluate whether the steps and actions have been completed successfully.

## Background of this manual: The story of the wasp

In the summer of '21 all partners in this European project travelled to a small village in the northern part of Italy called Sale San Giovanni, famous for its lavender fields. We stayed in rustic houses in beautiful surroundings with breath-taking views of nature. Every day we went to the local arboretum, the venue for our meetings which fitted perfectly with the purpose of the project.

One evening, we gathered in a local hostel that also served as a restaurant, eating tasty Italian food. While sitting together at long tables in the warm summer evening, enjoying the food and wine, suddenly, one of us started to feel unwell. Apparently, he had been stung by a wasp and had a strong allergic reaction to it. After that, everything went 'unreal'. We called 112, an ambulance came by after a seemingly endless amount of time, and our



friend was taken away to a nearby hospital, where he spent most of the night. In the end, everything turned out to be alright, and the next morning our friend even managed to give the presentation he was scheduled to give.

We are sharing this 'wasp story' with you for several reasons. For one thing, we had been working in and with nature in a positive way for several days. The incident with the wasp reminded us of the negative, more challenging side of nature. It made us realize that nowadays this challenging side of nature plays a big role in nature's images of young people, who often grow up with little positive experiences of nature. Many of them think of nature as 'scary and disgusting', and associate nature with creepy insects, discomfort, and getting wet or dirty. The story of the wasp confirms this challenging side of nature. Yet, at the same, it also shows that having the right skills and knowledge can help to overcome this challenging side. Recognizing the allergic reaction, a person in our group immediately gave an antidote in the form of antihistamine, which he carried with him in case of emergency. Without this medicine, things might have gotten a lot worse. Moreover, going through this experience together made us stronger as a group, and strengthened our connectedness. Finally, the experience strengthened our respect for nature as a powerful, greater than ourselves force.

As a reminder of our shared impressive nature experience with the wasp, we have illustrated this manual with little wasps.



# Part 1

## Introduction to NQ

# The concept of Nature Intelligence

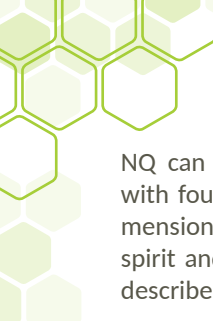


Figure 1.1. The flower model of NQ

## The human-nature connection

Nature Intelligence, or NQ, is a multidimensional concept comprising human qualities to connect to nature in a cognitive, emotional and spiritual manner, and to actively use these qualities to support both one's mental and social health and well-being as well as the well-being of nature and the planet.

Put simply, NQ can be seen as an elaboration of the human relationship with nature, capturing the rich and manifold aspects of this relation. It is closely related to the concept of naturalistic intelligence as described by Gardner in his theory of multiple intelligences <sup>02</sup>. However, compared to naturalistic intelligence, NQ is less focused on cognitive skills and abilities, and more on emotional and spiritual competencies to connect with nature in an experiential manner.



NQ can be graphically exemplified as a flower with four leaves, each representing four key dimensions (see figure 1.1): cognition, emotion, spirit and action. These four dimensions can be described as follows:

## Cognition

The cognitive dimension of NQ taps into the 'classic' competencies that are the focus of environmental education: environmental knowledge, attitudes and behaviours. NQ emphasizes the intuitive and experiential side of these competencies, which include:

- **Literacy:** knowledge and intuitive understanding of the dimensions, elements, patterns and processes of nature
- **Curiosity:** interest in nature and awareness of the intrinsic value of nature
- **Outdoor skills:** practical knowledge and basic skills for staying outdoors and living in nature

## Emotion

The emotion dimension of NQ evolves around the feeling of connectedness to nature. It reflects a sense of kinship and an affective individual experience of connection with nature, both psychologically and physically, through direct embodied experience and an open-minded approach towards both the positive and the negative sides of nature. The competencies within this dimension are:

- **Connectedness:** ability to connect to nature, to care for other living beings, to live in harmony and balance with nature, and to identify oneself as part of nature
- **Embodiment:** direct connection with nature through physical contact, which also implies resilience against more adverse conditions in nature, such as bad weather or dirt
- **Open-mindedness:** having an open mind, enjoying all aspects of nature, even the things that might be scary or disgusting

## Spirit

The spiritual dimension refers to a feeling of transcendence and interconnectedness, based on the

realization that the natural world that surrounds us is alive and intelligent, just as humans are. The competencies within this dimension are:

- **Transcendence:** a 'flow experience' (also known as 'magical moments' or 'peak experiences') during which one feels lifted beyond the hustle and bustle of daily life and connected to something bigger
- **Mindfulness:** having a mindful sensory experience of nature
- **Authenticity:** the capacity to be true to oneself, to be an authentic person guided by one's own inner principles, as a precondition for, and outcome of, spiritual experiences with nature

## Action

The action dimension refers to the ability to use emotional, cognitive and spiritual competencies for regulating one's own health and the planet's health, as well as for socializing with peers. This dimension is somewhat an 'automatic' result when the cognition, emotion and spiritual dimensions of NQ are realized. The competencies within this dimension are:

- **Health:** recognizing and using the relaxing and empowering capacities of nature for self-regulation and mental health
- **Engagement:** being motivated and capable to engage in actions that make the planet greener and more sustainable
- **Socialization:** choosing nature as a place to spend time with friends and using a shared interest for nature to strengthen connections with peers

## NQ as an emergent property

The idea behind NQ is that when a person has acquired skills or competencies in all four domains, NQ arises automatically as an 'emergent property'. An emergent property can be defined as *"a property of a system that is not possessed by any of the individual parts of the system and that arises through the interaction between the parts"*<sup>3</sup>. As an example, water possesses properties that are quite different from its dimensions,



oxygen and hydrogen. More poetically, NQ can be compared to a rainbow that starts shining under specific conditions, if one is in the right time and place.

Being ourselves part of nature, all of us humans possess the basic qualities for being nature intelligent. This implies that everybody is nature intelligent, and that it is not possible to not be nature intelligent. That said, there are different levels and profiles of nature intelligence, and with our project we aim to nurture NQ to higher levels.

## Test your nature intelligence

Table 1.1 presents a scale of 36 items to retrieve your personal NQ profile in the four domains. The scale is available online, through the website [www.natureintelligence.eu](http://www.natureintelligence.eu), as a self-test. The scale can be used at the start of a programme to gain insight into participants' competencies and set goals for the outcomes of youth work programmes that meet the needs and aspirations of the participants. For long-term programmes, the test can also be taken again after completing the programme, to gain insight into the impacts or 'successes of the programme.

Of course, you can also do the test yourself to gain more insight in your relationship with nature as a youth worker.

## The NQ-36 test

You may fill out the test with response options 1 = totally disagree to 5 = totally agree. You can obtain your 'NQ Profile' by adding up the scores of the three items per competency, and then add up the scores per competency to get your score per dimension (with a minimum score of 9 and maximum score of 45 per dimension). We recommend not to make a final NQ score but only a score per dimension, to get an impression of your NQ profile. We also recommend not to compare your scores with other participants, but only use the scores to get an impression of your own nature intelligence profile.



## Cognitive Dimension

Literacy	1	I can identify many things in nature like animals, plants, and stones/ logs etc.
	2	I can recognize and understand processes, patterns and cycles in nature.
	3	I possess specialized knowledge about a specific aspect of nature like birds, edible plants, and fossils.
Curiosity	4	I am interested in information about nature, like watching nature films/ documentaries, reading books or articles.
	5	I am intrigued by how everything in nature seems to be interconnected.
	6	I am fascinated by Nature's beauty and the experiences it provides.
Skills	7	I am able to apply my knowledge about nature in my daily life, for example growing food or searching for food in the wild.
	8	I don't get lost in nature easily.
	9	I possess nature survival skills such as starting a fire, finding food, building a shelter for sleeping etc.

## Emotional Dimension

Connectedness	10	I think of the natural world as a community to which I belong.
	11	I care deeply for living beings: animals, plants or mushrooms.
	12	I think that animals, plants, and humans are all interrelated.
Embodiment	13	I am not bothered if I get wet or muddy when in nature.
	14	I like to walk barefoot outdoors.
	15	I enjoy digging in the earth with my bare hands.
Open-mindedness	16	I can stand the sight of dead birds or other small animals in nature without feeling uncomfortable.
	17	I would be fine with spending a day in nature without toilets or other facilities.
	18	I would rather not kill flies or other insects.

## Spirit Dimension

Transcendence	19	Even everyday nature settings are full of complexity and beauty.
	20	I have an open mind to the spiritual meaning of things in nature.
	21	I feel that all inhabitants of earth, human and other organisms, share a common 'life force', 'energy', or 'soul'.
Mindfulness	22	When in nature, I feel in touch with the here and now.
	23	Nature helps me to keep track of my thoughts and feelings.
	24	Nature enhances my awareness of sensations like smells, sounds and the wind on my face.
Authenticity	25	Nature inspires me to stay true to myself and live according to my values and beliefs.
	26	When in nature I feel free to express my personal opinion.
	27	Nature inspires me to reflect on the meaning of life.

## Action Dimension

Health	28	If I want to feel refreshed and energized, I take a trip to nature.
	29	When I feel stressed or down, doing something in nature makes me feel better.
	30	Natural surroundings help me more to sort out my feelings than urban surroundings do.
Engagement	31	I am concerned about the climate and the environment.
	32	I pay attention to my consumption habits out of respect for nature and the environment.
	33	Protecting nature and the environment is an important principle in my life.
Socializing	34	Being surrounded by nature makes it easier to engage with other people.
	35	I like to participate in activities in nature with others.
	36	I seek out parks or other natural settings as a place to chill out with friends.



# Addressing NQ in youth work: principles and guidelines

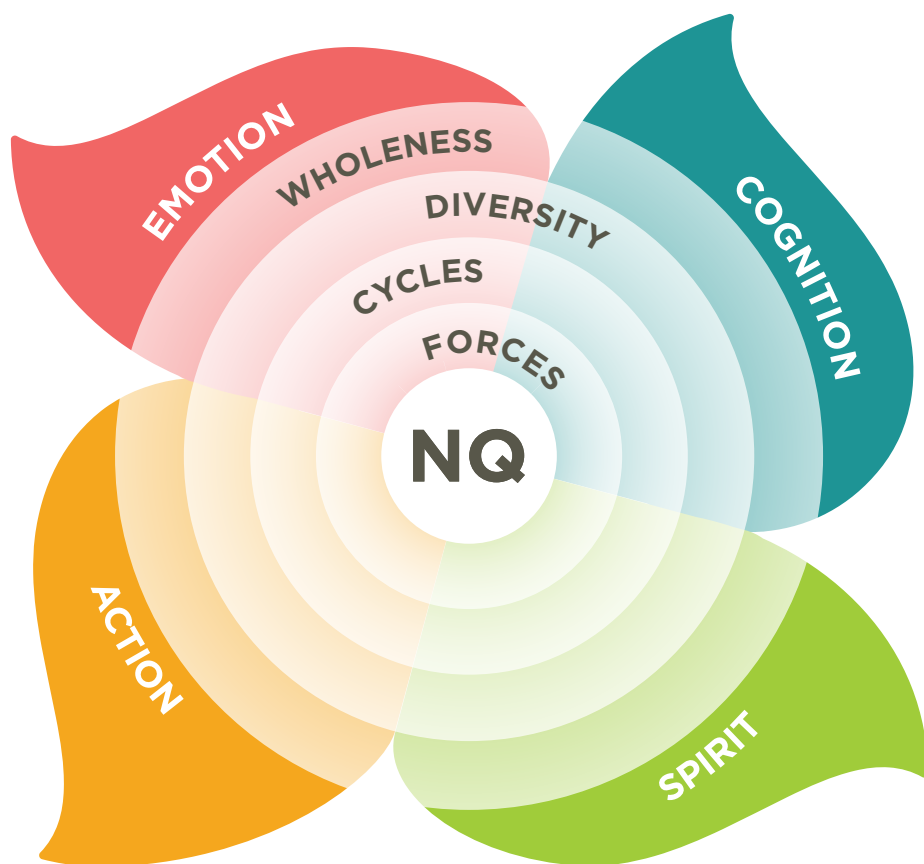


Figure 1.2. Design principles for NQ youth programmes.

## The intelligence of nature

Dating back to the earliest Greek philosophers, people have viewed the natural world as intelligent – as being alive and ensouled. Throughout nature there is evidence of complex functioning, which seems to be closely aligned with human functioning.

Starting from the assumption that nature has some kind of intelligence, it follows that nature can serve as a teacher. Or, if you prefer, a facilitator, an inspirer. Indeed, nature has for long served that role. Throughout history, people have turned to nature for inspiration and wisdom. By looking closely at the clouds and the winds, our ancestors sailed the world and discovered new



territory. By accepting the change of the seasons, they learned about the importance of patience and taking things slowly. Until not so long ago, people lived in small houses with large families, and children spent much of their time outdoors, roaming the fields and the forests, having magical moments and learning how to deal with challenges and threats such as climbing trees or encountering a gaggle of geese with goslings.

Nature's own intelligence is, among other things, reflected in the regenerative powers of living organisms. If you cut your hand, it will heal itself. If you sever the head of a flatworm, a new one will grow in its place. Intelligence in nature is also visible in the proportional forms - self-similar and fractal - that can be found throughout nature. These proportional forms allow the parts to be integrated within the whole, giving rise to beauty and fascination. This natural beauty is reflected in the geometrical and harmonic form of flowers, spiral galaxies, nautilus shells - nearly every organic form found in nature.

This manual uses the 'intelligence of nature' (as a property of nature) as a starting point for promoting 'nature intelligence' (as a property of humans). By interweaving these two properties, we aim to provide a solid and unique base for youth work.

For the purpose of this manual, we distinguish four broad and equally important categories of intelligence of nature as properties that may serve as principles for promoting NQ in youth work: wholeness, diversity, cycles, and forces (see figure 1.2). The descriptions of these categories are general - non-exhaustive features that characterize nature's teaching essence.

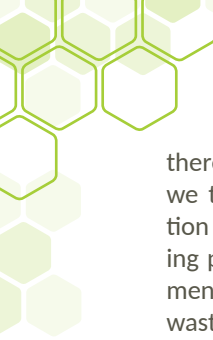
Nowadays, especially for younger generations growing up in urban areas, nature has stopped fulfilling its role as a teacher. There are initiatives, such as forest schools, that serve a subgroup of more privileged youngsters to connect with and learn from nature. Using one or all of the four principles described below may allow you to re-introduce nature as a teacher, to promote nature intelligence in young people from all backgrounds.

## Wholeness

The principle of wholeness refers to nature's quality of being a whole, single entity that cannot be broken up or divided into its parts. 200 years ago, Goethe, the German poet and scientist, recognized the importance of 'authentic wholeness' in nature and used it as a foundation and inspiration for his approach to science <sup>04</sup>. Nowadays, the principle of wholeness is a key principle of holistic education, a philosophy of education based on the premise that each person finds identity, meaning, and purpose in life through connections to the community, to the natural world, and to spiritual values such as compassion and peace <sup>05</sup>. The principle of wholeness has also gained ground in modern nature protection practices that view nature as an interconnected organism in which every element and part has a specific role and function that supports the system as a whole. Of course, we are part of that whole too and this principle is also about acknowledging that humans are nature and belong to a wider Whole.

### *Guidelines for using the principle of wholeness*

- **Connect:** Explore and offer moments and activities, for both yourself and young people, to promote self-connection (body exercise, meditation, drinking tea, diving into cold water,...), connection to others (eye contact, touch, sharing, moment of attention,...) and connection with nature/the universe (solo moment in nature, ritual, gardening, looking at the stars,...).
- **Include all elements:** Support wholeness, balance and harmony by activating all complementary elements in the individual, the group and in nature. Focus (at least in the long term) on all four dimensions of NQ (cognition, emotion, spirit, action). Touch upon the four basic elements of nature (earth, water, fire, air); take a holistic approach (by integrating body, mind, soul, spirit), walk in all directions (east, south, west, north).
- **Be coherent and authentic:** To be trustworthy and inspiring guides for young people,



there needs to be coherence between what we think/believe in, say and do. Pay attention to all aspects of the programme including practicalities: e.g., keep a clean environment, provide healthy food, think of reducing waste, use natural materials for activities, show respect for the place where you are and other beings present.

- **Acknowledge basic developmental needs:** There are 5 basic developmental needs which have to be met on physical and symbolic level in order for a young person to grow into a 'whole' adult - and also for a group to grow together into a functioning community. These are: place (work towards creating a physical space that is suitable for learning and supports an inclusive atmosphere where everybody is valued for whom they are has a place/voice in the group), nurturance (provide a suitable amount and quality of food as well as "tasty" and nourishing spontaneity, information, activities), support (be of support mentally, emotionally, spiritually, physically), safety (have safety rules and aid ready for outdoor activities and crafting as well as shared and accepted principles of being together respectfully in the group) and limits (set clear limits and follow them - what is acceptable, time limits, right to say stop,...).

## Diversity

Nature teaches us that, instead of drawing from a limited and finite resource, there is another way of operating a system, one that is not based on scarcity but on abundance and generosity. As ecosystems evolve in nature, they become more diverse. This diversity creates more (instead of less) resources in a system. This is because diverse plants and species need different nutrients to thrive, and they each generate abundant resources that they can share. They soon realize that they can gain what they need by creating cooperative relationships. Instead of drawing all their resources from the soil, they start exchanging resources with other species or plants. Following this 'cradle-to-cradle' principle, there is no 'waste' in nature: everything has a purpose and is part of an interconnected cyclical system. This shift from competitive to co-

operative relationships creates the conditions for a system based on diversity, complementarity, resilience and abundance.

## *Guidelines for using the principle of diversity*

- **Be aware of different entry points:** Recognize that participants not only have diverse intelligence profiles, which characterize the way they learn and get into action, they also have different NQ profiles and therefore approach, appreciate and feel connected to nature in different ways. Participants indeed enter an activity or exercise with different interests, experiences, social and cultural backgrounds. Acknowledge this diversity and provide suitable levels of challenge and engagement that resonate with participants' entry points.
- **Listen to the wisdom of the whole circle:** Use circle communication and community building practices during your courses. Native tribes all over the world used circles as each voice carries a piece of wisdom and, together, create a collective wisdom that transcends any individual voice. Circles are inclusive non-hierarchical forms, which make participants feel valued and comfortable to share their ideas in an authentic way without being judged.
- **Engage all senses:** Make sure to include sight, touch, smell, taste, hearing, intuition in exercises and activities. This will respond to participants' different learning styles and support embodied experiences. Invite all senses for mindful moments in nature to strengthen the connection.
- **Celebrate complementarity:** Use the Chinese principle of 'Yin and Yang' that describes how seemingly opposite or contrary forces (e.g., males and females, young and old) may actually be complementary, interconnected and interdependent. Value people for their unique talents and create settings where everybody is empowered to contribute. Apply this principle by working both individually and in groups, offering dynamic and slow activities, introspective and expressive tasks, physical and mental challenges, emotional and pragmatic moments.

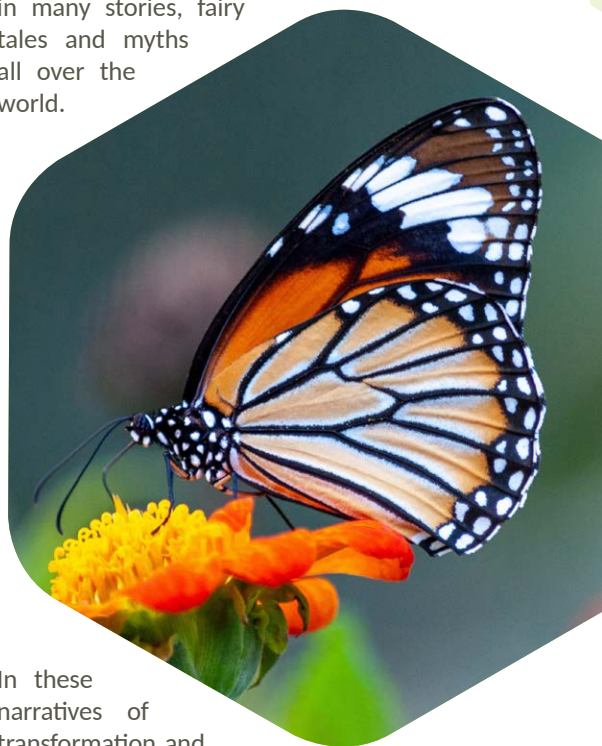


## Cycles

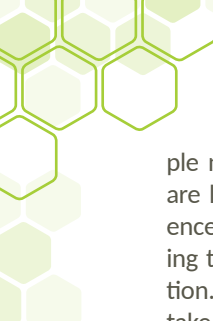
Nature's cycles are self-sustaining and self-regulating. Cyclical systems such as the lunar, carbon and water cycles or the passing of the seasons and the seasonality of food, are essential for the planet to remain healthy. Natural systems go through periods of decline and decay, as well as restoration and regeneration. Humans also have circadian rhythms and are driven by an internal 'clock' that controls our sleeping and eating patterns – chemical reactions that sustain life in every cell and are collectively known as the body's metabolism. Outside of our bodies, we are also directly affected by the wider natural cycles, triggered by daylight and night. Being aware of nature's cycles bonds us more deeply to our place in the world and to ourselves. Winter for example is usually nature's time for restoration, reflection and preparing for another cycle of growth. Youngsters growing up in today's society can become disconnected from nature's cycles, no longer eating seasonal foods nor working in an environment subjected to seasonal changes.

### *Guidelines for using the principle of cycles*

- **Respect different phases of cycles:** Keep in mind that every group goes through different stages which are very similar to the way individuals go through their lives: birth, childhood (forming), adolescence (norming), adulthood (performing), old age and passing away (reflecting, transferring). Respond adequately to the different challenges relating to each of those stages. For example, tolerate ambiguity in the beginning, be open to different feelings and try not to be in a hurry to learn a lot during norming, work hard to go for real things during performing, and slow down for reflecting in the later stage. Although it is good to start with a structured plan, it is very important to pay attention to the flow and adapt the programme to the learning needs of the group. Think of a programme that is not tight in terms of schedule and respects natural rhythms - of the body (enough time for rest and for enjoying informal moments), of the different seasons, of the weather.
- **Understand crisis as a natural phase:** Have an open mind to crisis as a part of life that can be transforming and foster hope and opportunity for a new vision on life. Embrace individual or group moments of crisis with empathy, as these serve the purpose of finding emotional, physical and relational equilibrium. You might have heard of the Hero's Journey, a cycle or pattern that can be found in many stories, fairy tales and myths all over the world.
- **Allow regeneration:** Foster a balance between being and doing. Ensure sufficient free time during programme and in between activities. Just as plants need adequate spaces to breathe and take light in, similarly young peo-



In these narratives of transformation and personal growth, the Hero or Heroine steps into an unknown world, meets the dragon, encounters moments of crisis, passes through a symbolic death, and when overcoming it, comes back, reborn, with new treasures. Not only outer ones, but mainly inner ones – wisdom, skills, vision. Modern versions of such a story are told in movies like The Hunger Games. Share this understanding and support both individuals and groups to contain the crisis and use its learning potential.



ple need spaces and moments in which you are less directive and more of a gentle presence. Leave space for regeneration by allowing time for digesting, reflection and integration. Also, with regards to the environment, take care not to overexploit natural resources in the same way we want to behave sustainably towards participants and ourselves.

- **Use patterns:** Repetitive, or ‘fractal’, patterns in nature awaken in us a sense of beauty, harmony and order. Our brains are actually hardwired to have a calming response to fractal patterns in nature — like snowflakes, flowers, shells, leaves, and ocean waves. Bring this element into your activities, using symbols and metaphors. Use repetitions, zoom in and out (from a branch of a tree to the whole tree). Have a little ritual to start the day. Use the same elements to open and close the course. Let people walk a spiral to its centre and back while crystallizing their intention for the course. Switch between details – what do you see in the grass? – and the bigger picture – what would you see when looking at our earth from the stars? Allow for smaller cycles within the bigger ones – for example a little time for reflection in every activity, and more time once a day or week of the course. Just like we rest every day during night, every month during new moon, every year during winter, and when we become old. In every NQ domain there is a piece – or a fractal – of the whole NQ, all its four dimensions. So, you can never run an activity that nurtures only one of the dimensions. One of the four dimensions can be dominant, but it always influences the whole.

## Forces

The magnificence of nature is expressed in its beauty and grandeur, and also in its vital forces and powers, as they affect human experience in a profound and existential way. These forces can be strong and powerful (e.g. the eruption of a volcano, or a stormy wind), but also more subtle, (e.g. seeing a sunrise or feeling a cool breeze on your cheeks). While experiences with the subtle forces of nature are generally pleasant, encounters with

the strong forces of nature may activate our sympathetic nervous system and elicit fears and other challenging emotions **06**. On the other hand, they can also be life-changing experiences that strengthen the connection with nature and build resilience and change one's perspective on life. The vital forces in nature can also be observed when a plant breaks through the soil to grow or makes its way out through rocks or asphalt, when a chrysalis turns into a butterfly or a snake changes its skin. Witnessing these events in nature is indeed a source of inspiration for building resilience, inner strength and willingness to change. Evaluations of adventurous outdoor programmes for youth-at-risk that make use of the forces of nature have revealed many positive outcomes, including an increase in psychological energy, greater self-confidence and self-worth, and a sense of awe and wonder **07**.

### *Guidelines for using the principle of forces*

- **Connect to nature's powers:** Be open and curious, observe and listen to the forces in nature, in the group, in you and use its power to support your activities. When stuck, go to the river and take in the flow. Climb a hill to have an overview of the landscape and of the situation. Introduce small rituals to synchronize with natural and cosmic happenings like Summer and Winter Solstice and Spring and Autumnal Equinox. Notice the influence of weather, moon phase or shape of landscape on mood in the group. Notice tension in a group or your own fear – what is behind it? How can it be calmed down? What calls for attention and how to respond to it?
- **Be creative:** Nature itself is literally a creative process, in constant flux, perpetually iterating and unfolding in ways that solve complex problems and support life. This is why, when it comes to creativity, nature can inspire you. When designing your programmes, do your best to use materials or facilities that are available in the environment you are in. Allow yourself and participants to explore the connection to self, the group and the environment. Being open to experiencing new



things is directly associated with one's level of creative thinking and output. In nature, everything is in balance and flow. Similarly, you can provide experiences that bring participants into flow by involving them in challenges that are manageable and appropriate for their levels of skill. When in flow, participants experience a deep sense of enjoyment that is dependent on their internal system and leads to increased complexity and awareness levels. Build on that enjoyment and allow space for playfulness, just like in nature the wind plays with leaves. Playfulness is about creating new perspectives, ideas and goals and exploring new solutions. Being playful is an important part of experiencing creativity.

- **Support transformation:** The process of change and transformation is something that we constantly witness in nature. It is about letting go of something that is not serving us any longer in order to make room for the new to come (behaviour, feeling, habit, thought, knowledge, etc). Every transformation requires effort and can involve contrasting feelings such as hope of being able to change unwanted patterns or fear of one's own limits and of the unknown. You can support these moments of transition by building a physically and emotionally safe learning environment that is based on trust, authenticity and compassion. Through reflection and reflective practices, you can generate opportunities for participants to explore and experiment with new enlarged frames of reference and behaviour. Through your questions, related to what is happening in the moment, you are holding the space for individuals to connect their body and mind and become more aware of who they are, what they feel, what they think and how they relate to others and the context they are in. Let your questions be driven by a genuine interest in what is being said, with an attitude of non-judgmental curiosity. Be present and reflective yourself, promote dialogue and feedback. Remember to slow down and not to expect the "right answer", but simply the answer that emerges in that moment. Be patient and allow moments

of silence and "not knowing", as insights happen suddenly out of the associative chain of thoughts.

- **Allow space for magic to happen:** Nature is full of surprises and things we 'could have never imagined'. After planning and preparing everything, taking in account all aspects, integrating and using all principles, connecting... let it all go a bit and allow space for magic to happen. There is this little aspect, the miracle of nature, synchronicity, which we cannot prepare for, appears in the right constellation and lifts the moment/course to a higher, 'heavenly' level. Allow yourself to not control everything and to be surprised and touched by what was created beyond your facilitation.

## Using the principles and guidelines

The principles and guidelines in this chapter provide direction and inspiration for designing youth programmes, while allowing flexibility in shaping content, technique, and other aspects of programme delivery. The content helps you in your design process and can be applied to new interventions, as well as be integrated in existing youth programmes. Before applying these principles and guidelines, take a moment to find your own authentic way of facilitating a group process by reflecting on the following:

- *What can nature teach you about facilitation?*
- *How can you enrich your facilitation style, when reading the principles and guidelines?*
- *What other principles/guidelines do you see in nature and find inspiring for your work?*



## How were the principles developed?

The four principles and their guidelines were developed during a working week in Italy, where each of the partner organizations shared some of the youth activities they considered relevant and effective for developing NQ.

Some examples of the activities were:

- Walking a spiral path laid out with stones that resembles one's key nature experience throughout life. The activity has been used as a way of getting to know each other more deeply and to share our expectations and intentions for the project.
- Working together to get a rope out from a tree was used as an activity to promote cohesion in the group and becoming more aware of one's role in the group.
- Walking (and standing still) in silence as a group was done to explore the environment and group forces and interests.
- Choosing a sitting spot in nature, contemplating what's ahead of us and sensing what emerges from being in deep contact with nature. In a second phase creating something (poem, drawing, artwork with natural elements) that represents what had resonated with us during contemplation. In a third phase, pairing up with another participant, showing and exchanging each other's sitting spot. In a fourth step, sharing in pairs the feelings that emerged in the sitting spot chosen by the other person and what the differences from the first one were. The aim of the activity was to connect with nature and to be aware of one's own perspectives about nature.
- Individually picking the latest photo on our cell phone of ourselves in nature, and then talking about it in small groups. This activity gave us the opportunity to become more aware of our understanding of nature, how often we immerse in it, and what was still resonating in us about that moment the photo was taken.
- Standing in a circle, we decided whether to agree or not with statements regarding nature and our behaviours towards it. We took turns to explain our decision to the rest of the group and were invited to discuss and reflect about the statements. This activity was meant for us to become more aware of our different points of view with regards to nature and our own footprint on nature.
- Exploring the environment and taking a picture of an animal that caught our attention. We then did a little research on what its superpower was and shared it with the rest of the group. The intention of the activity was to explore freely and make us curious about animals in the area. We also experienced how technology can support us to obtain new information about nature.

- In smaller groups, guessing animal sounds reproduced by a team member or guessing if certain statements about nature were true or false (e.g. 'An insect always has six legs!'). This activity was meant to increase our knowledge about nature in a playful way and nurture teamwork.
- Going for a walk in the woods and stopping by a sit spot that we felt attracted to. We then could taste or even eat a natural element that was there (piece of cork, leaf or grass) as a way to get in deep contact with the environment. The aim was to listen with an open mind, heart and will to what nature was in need of in that exact moment and to make a small action and ritual to respond to that need.
- Sitting silently in a circle, we passed around a stone. We each took turns to touch and connect with this stone, explore its consistency. When the stone had passed from hand to hand, we were asked to bring to mind a magical moment in our life. In silence, everyone recalled their own moment and then, in smaller groups, shared what that moment was. The activity aimed to help us connect spiritually with nature and, through it, with ourselves.
- Making (and putting out) a fire with all the four elements (earth, water, wind, fire) was introduced as a closing ritual of the group process after our one-week experience together. In a first moment, we each went to collect a natural element that represented our own learning experience and offered it to the fire to feed its flames. We then each poured our element onto the fire to ground our memories. In a second moment, we each took our time to walk to a common place, where we stood in a circle holding hands. After a moment of stillness and silence, that was given to allow us to immerse ourselves in the group and in nature, each of us, when ready, could leave the group and walk back home.

After doing each exercise, we asked ourselves “which principles underlying these exercises made us feel in connection with nature?”. Of course, the list of principles and guidelines is linked to both the partners’ own knowledge and experience as well as the specific activities we had been doing so far. There are many more principles and guidelines for using nature as a teacher to nurture NQ and this list is non-exhaustive, but rather a starting point for youth workers to develop their own principles and guidelines based on their own experiences and insights.

In addition, drafts of this manual were circulated to practitioners and scholars in the field (e.g., zoo and community educators, administrators, environmental scientists and youth leaders), and their comments were incorporated into successive revisions of the document.





# Part 2

## Inspirational Narratives from the Field of Youth Work





# Four Narratives

Understanding the principles and guidelines from the previous chapter is one thing, applying them is a whole different story. We understand that you may or may not have experience with developing nature-based youth programmes and we know, from our own experience, how helpful it can be to read from other experienced youth workers how the principles were put into practice. This chapter aims to do exactly that: experienced project partners offering inspiration to youth workers to include NQ into their youth programmes.

In the narratives we have looked at our existing practices and activities through the lens of the NQ concept and reviewed them with the aim of nurturing the different NQ dimensions and of developing the competencies that are related to them. The narratives provide inspiration by giving concrete examples of how the principles and guidelines seen in the previous chapter may be used to support you in working with young people.

We have organized the 'good practices', or narratives, according to the four NQ dimensions (Cognition, Emotion, Spirit and Action). Some narratives will however focus on more than one of the dimensions and the corresponding competencies. Each narrative will also underline how the principles and guidelines were implemented. In order to help you understand how the principles and guidelines are addressed in the narratives, these are highlighted on each page.

Each of the four following narratives is structured in the same way:

1. *Title of the activity*
2. *Main NQ dimension(s) and principles that are targeted with the activity*
3. *Context and target group*
4. *Description of the activity, illustrating what can be done to nurture the dimensions of NQ, and how principles and guidelines can be used to facilitate the process.*
5. *Aim of the activity*

There are many narratives available, and in this manual we present four. You can find many other inspiring narratives from youth workers that have applied the NQ principles and guidelines to their youth work setting on the project website [www.natureintelligence.eu](http://www.natureintelligence.eu).



# NARRATIVE 1:

## The transformative power of the bonfire



**Main NQ dimension(s):** Emotional and spiritual

**Context and target group:** The following activity was carried out during a two-week residential nature-based educational summer camp addressed to young people between the ages of 16 and 18. The participants were lodging in a chalet immersed in the forest of Mount Amiata in Tuscany, one of the most extensive beech forest in Italy.

**Description of the activity:** The activity lasted approximately one hour and a half, and consisted of making a bonfire together, during which participants were asked to identify themselves with the surrounding environment, to transfer a strong emotion onto a stick, to feed the fire with this emotion and blow the fire with their vital spirit.

**Aim of the activity:** The aim of described activity is to allow participants to connect emotionally with nature through the element of fire and use this emotional connection to experience a moment of transcendence, sharing, and openness to others.

### *The narration of the activity*

The activity begins in a clearing in the woods; the participants are in a circle, and in the centre there is a small bonfire. I ask them to sit down and explain that those small flames represent the vital energy of the forest around them and which they are now part of. I ask participants to stay in silence and observe the fire for a few minutes. The fire represents the engine of the cyclic regeneration of nature, a symbol of vital energy.

#### Forces

Connecting to the power of nature

I ask participants to let their thoughts wander and to internalize the fire's rhythm and the natural sounds that surround them. Through this rhythm, they are asked to reconnect with their emotions and focus on a significant one: a strong emotion that characterizes this phase of their life. Once they identify the emotion, I ask them to transfer it into a piece of wood that they will throw into the fire. In doing so, they recognize themselves as one of the pieces of nature and that they are helping the vital natural energy to grow through their own emotion.

#### Wholeness

Connect to nature

Once participants have fed the fire with their stick, they blow on it, giving it oxygen. This gesture leads participants to reconnect with nature through a gift: they provide a part of themselves, their vital breath, to strengthen the whole.

The emotions are no longer solid, but they become fire, sparks and air, helping participants to digest and accept these emotions. The participants revere others and the fire; they remain calm, enraptured by the atmosphere. When they stand by the fire, they can decide to share their emotions aloud, generating empathy and strong emotional reactions in the group. Once all the participants have shared, by simply throwing the branch-emotion into the fire or stating out loud their emotion, the ritual ends by observing the transformation of the fire.

The sparks dispersed towards the sky become the symbol of energy that gets transformed into something new.

During this last phase, participants take a moment to digest and let go of their emotions, recognizing their contribution to the whole.

## Forces

Support  
transformation



# NARRATIVE 2:

## Dog Houses



**Main NQ dimension(s):** Action

**Context and target group:** This activity took place with local young people, aged 16 to 18 years old. The activity took place in a small town and was carried out during six months.

**Description of the activity:** The activity, carried out within an Erasmus+ youth initiative programme, consisted in building 5 dog houses that were modified in a way that allowed people to donate canned animal food and money straight into it. These dog houses were then placed in the main shopping centres.

**Aim of the activity:** The aim of the activity was to address the local need to raise awareness and civic responsibility regarding stray cats and dogs, a situation for which there was no legislation at the time. The local youth centre, a group of young people and a local charity association came together to address the issue, and reached the conclusion that no one took the responsibility for the stray dogs and cats in the local community and that the existing animal shelters were already seriously struggling to help cats and dogs.

### *The narration of the activity*

#### **Step 1 Action**

One of the participants was studying to become a carpenter and ordered and cut the wooden materials to make the dog houses, subsequently assembled by the group. The dog houses were designed to enable people to drop canned food, and keep passers-by from stealing it. We also included a small slot for money donations. When the houses were built, we painted them to make them more appealing and installed small wheels to allow us to move them. Finally, when the dog houses were ready for distribution and all arrangements with the shopping centres had been made, participants worked out a strategy to enhance the visibility of these dog houses. We decided to make a promotional infographic with a plea to donate for local stray cats and passed it to the customers at the entrance. Participants took several spots in front and inside the shopping centre to promote our project and cause. Two participants were standing by the cashier where the dog house had been positioned. During the first weekend, for the launch of our cause, we also gave away some promotional material to people who donated the food or money. We did this in 5 different shopping centres and people's responses were amazing. In just four days, we were able to collect more than 1.500 kg of animal food, some money, and a huge pile of old blankets.

### **Forces**

Be creative



## Step 2 Distribution

When the promotional activity was finished, we sorted out all donations and made inquiries about national animal shelters. We have divided food and blankets among five animal shelters in our country. We took the food to the shelters and volunteered to help them for that one day we were there. We took some dogs for a walk, and we petted cats that were lonely in their cages. We took some photos and interviewed people working at the shelters. Later, we prepared an article that was published in the regional newspaper to raise an awareness about the struggles of the shelters. Our article was calling for people to adopt animals instead of buying them and for owners to neuter their animals. We also wrote a letter for national and local politicians, for some changes in the law to be addressed. A year later, the government changed the law, ordering local communities to co-finance animal shelters and systematically help prevent stray dogs and cats. The money that had been donated was used for a neutering campaign for the local cats. Some of them later found their forever homes and some were released back to their natural habitat and were fed by local people. Finally, our dog houses were donated to the local animal charity associations and shelters to continue collecting food. Just lately, one of our co-workers saw one of the houses in front of a big supermarket. People still use our dog houses to donate food. A BIG thank you to all these people.



# NARRATIVE 3: Winter Solstice Labyrinth

**Main NQ dimension(s):** Spiritual and cognitive

## **Context and target group:**

We offered this activity/ritual in two different contexts:

- As an evening activity during a week-long winter retreat in nature with a group of fourteen people aged 20 to 35 years old.
- As a four-hour-long public event in the gardens of an Art Nouveau villa in centre of Prague - Czech capital, where around 100 people from different ages, including children, participated.

**Description of the activity:** After an introduction to the activity and the preparation phase, everybody made an individual journey to the centre of the labyrinth and, symbolically, into their own centre, to light a candle that symbolizes their inner light and fire. They then walked back to the starting point and stayed on for the integration and consolidation phases of the experience.



**Aim of the activity:** The aim was to synchronize our inner nature with the outer one, to mark and celebrate the moment of Winter Solstice, to connect with the mystery of re-birth of the sun and to refresh the light within ourselves.

## *The narration of the activity*

We are sitting together, and ask participants what qualities they associate with the Winter Solstice and with the present moment.



### **Diversity**

Listen to the whole circle

From different corners we can hear: stillness, darkness, silence, Christmas lights, long nights, introspection, cold, depression, sharing with friends and family, sweets, sleeping nature. We collect the answers and introduce the meaning of the Winter Solstice in the cycle of the year, highlighting the significance and importance of rituals as acts that mark the change in nature. We share with the group how important it is to acknowledge and embody it as a way of accepting the changes in ourselves too. We take this moment as an opportunity to slow down with nature, reflect about the past year and take up the power for the new cycle.



### **Cycles**

Respect different phases

We celebrate the beginning of the solar year, the re-birth of the Sun and we also honour the darkness. After this introduction, we invite participants to do their individual preparation. We invite them to stay still in the darkness for a while and then to purify themselves in a way that feels appropriate for them -

there are several items which can be used: water, fire, drum, bell, dried herbs for smudging, essential oils, feather.

## Diversity

Engage all senses

Next, we invite them to breathe mindfully and when ready, to step into the labyrinth and walk with trust towards the light. Ahead of them is a light labyrinth of Cretan style with a big candle in the centre. We encourage participants to leave enough space for each other and to respect the different paces. Some people are fast in entering the maze, others take a longer time to rest in the darkness and get ready for the journey.

## Forces

Connect to nature's power

This type of labyrinth has one way of reaching the centre, where the turning point is, meaning to exit one takes the same route back. The path continuously changes direction. At times, it feels you are almost there and then, suddenly, you are farther and almost walking in the opposite direction. Still, as long you don't give up, you will reach the centre.

## Cycles

Allow regeneration

We offer specific topics for three different phases:

- On the way to the centre remember with gratitude what, in the season ending, was your navigation, your guide, your light. Let go of what is no longer serving you.
- When reaching the centre, you have also reached your own inner-center and turning point. Light up your candle with new light and let this light into your heart as a symbolic gesture of allowing what is needed in your life.
- On the way out, contemplate on the question "What do you want to shine to the world?"

## Wholeness

Connect

After leaving the labyrinth we invite participants to make a wish and send it into the world, to nurture the fire with herbs collected on the spot and to share a piece of solstice cake. We all wish for a promising year of health, happiness and abundance. Everyone is invited to pick up a card and try to read their future with the help of the others. Usually this activity/ritual is individual, so before entering the labyrinth and after exiting it, people often want to stay with their own thoughts and feelings.

## Forces

Support transformation

Sometimes, once they are out of the labyrinth, they sit around the fire, singing together or sharing their stories from the labyrinth.



# NARRATIVE 4:

## Images of nature

**Main NQ dimension(s):** Cognition, Spiritual and Action

**Context and target group:** This activity was designed for a group of young people that were working on designing nature activities and the promotion of those activities. It was a group of approximately 10 people, aged 20 to 28 years old. The activity took place in a cabin in nature.

**Description of the activity:** The participants are sent into nature 3 times in total. Each time they have a different assignment. The last one is done in pairs, and there is time to exchange. Finally, the facilitator leads a group conversation, applying some theoretical information if required.

**Aim of the activity:** The aim of the activity is to allow us to become aware of our own perspectives about nature. The aim is also to connect with nature and be shown different perspectives. The awareness of the differences in the way we describe and see nature may help youth workers doing activities with different target groups.

### *The narration of the activity*

We start this activity by allowing participants to freely explore and experience the natural environment without mentioning what they will be asked later.

The only thing we announce is that we are going to talk about nature in images. We send the group out in the nature area, with the assignment of individually finding a spot they like and to sit there for fifteen minutes doing nothing but contemplating. We invite them to avoid using their telephones and to keep some distance from the other participants, so as for to not be distracted.

When participants come back to where they started from, they find all kinds of craft supplies they can use, such as pens and paper. They are then asked to go back to that spot to capture what they notice/find beautiful about that place.

They are given complete freedom to do that as they please: make a drawing or a picture, write a poem, tell a story or create something with the materials available. They have 10 minutes to create something and then they need to come back.

### Wholeness

Connect

### Forces

Be creative



Once they are back, they are asked to choose a partner and to switch places to create something about their buddy's spot. After that, we ask them to show each other what they made and share what stands out for them on each spot. We then ask some of the buddies to reflect and share about the following questions:

## Forces

Support  
transformation

Which spot did you like the most? Did the spot feel different when you had a task there? Do you think you would like the second spot better if there was no pressure to make something?

Generally, the participants show a preference for the spot they had chosen, but they often say that their buddy helped them see both of the places differently through their creative expression.

Finally, we give a short introduction to art history and show the different ways nature has been painted and seen by people over time. And how the way people paint nature may tell us a lot about their relation to nature was (and how it may illustrate the general relation of humans with nature in that particular era). We invite participants to look again at their communication about nature activities. What are you telling people with the images and words you are choosing? What can you change it to make it more attractive to someone else?







# Part 3

## The NQ Youth Programme Design Process



# A stepwise approach

We hope we have succeeded in convincing you of the potential value of NQ for your work and organization, and that you have become just as enthusiastic about this approach as we are. In our view, being able to make a heart-felt, true connection with nature lies at the base of a healthy and meaningful life, caring and respectful of other people and the environment.

We also realize that after reading all this, you may be wondering which concrete steps you can take to start working with the concept of NQ.

## General approach

As a general recommendation, if you want to incorporate NQ in your youth work setting, we recommend that you aim to at least nurture the four NQ-dimensions (cognition, emotion, spirit and behaviour), and that you take the four design principles into consideration when designing and implementing your youth programme. In our experience, youth work is (as with everything else in life) work in progress and with a bit of patience and curiosity, you can have a huge impact on young people's lives as well as in yours. Most importantly, we think that the best programmes are those that actively involve young people in all stages of programme design.

## Step-by-step guide

To further support you in putting NQ into practice, we present a step-by-step guide for implementing NQ in youth work (see table 3.1). For each step, suggestions for specific actions are indicated, along with a description of possible outcomes. These outcomes will help you evaluate whether the steps and actions have been completed successfully.

## Work in progress

In using this manual and the step-by-step guide, we hope you understand that this NQ project is a 'work in progress' and that we highly value the great work that you've already done that touches upon the core of nature intelligence. Please feel free to use our recommendations in a way that fits in with your organization and use your own imagination and experience to design an NQ youth work programme from scratch and to 'update' or further improve your existing programme into an 'NQ proof programme'.



**Table 3.1.**

**Step-by-step guide for implementing NQ  
in your design process.**

Steps	Actions	Outcomes
<b>1.</b>  <b>Assess needs and map your resources</b>	Read background information about NQ and distribute it among staff	Staff knows about the concept of NQ and the corresponding competencies and principles
	Discuss and assess which needs young people have when it comes to designing an NQ programme. Which NQ competencies would they like to develop further?	Youth workers have a good overview of what young people care about when it comes to nurturing their NQ. They know how to tailor the NQ programme to the actual needs of young people.
	Discuss the added value of NQ for the activities and mission of your organization	The value of adopting NQ in your organization has been identified and confirmed
	Identify resources, obstacles and opportunities for implementing NQ	The feasibility of implementing NQ has been established.
<b>2.</b>  <b>Implement principles for working with NQ</b>	Organize an inspiration session with staff members to discuss the principles for working with NQ.	Staff is familiar with principles for designing activities that facilitate NQ and is inspired to start using them
	Evaluate the current programme and activities to identify gaps and opportunities for making the programme more 'NQ proof'. We recommend to actively involve young people in this stage.	A shared vision on how to implement NQ in your organization and youth work practices has been created (e.g., which of the competencies/principles are already addressed and which need more attention). There is a good understanding of the young people's expectations.

3.	<b>Develop programme scope and structure</b>	Stimulate staff to follow an (online) training on NQ or other nature based educational approaches and to come up with ideas for implementing NQ in their activities	Staff members 'embody' the NQ approach and feel comfortable and confident to tailor it into their own best practices. They also have the confidence to explore new ways of delivering NQ programmes.
		Explore the need and potential for partnerships with complementary expertise	Partnerships with other organizations have been established that create synergy or are complementary to each other.
		Develop a format for an NQ based programme and activities	A 'toolkit' for delivering an NQ based programme is available, with detailed descriptions of activities (e.g., aim, duration, number of participants, materials, questions for facilitation/debriefing)
4.	<b>Select supportive environments and go for it!</b>	Find suitable natural environments in the vicinity of where you are located, or seek ways to enrich indoor settings with nature (Tip: NQ can be nurtured in every environment: green – blue - grey)	Supportive environments that enable nature as a teacher for nurturing NQ have been found or created
		pilot test and carry out your NQ programme	The programme has been delivered
5.	<b>Evaluate</b>	Administer the NQ scale pre- and post-programme to monitor changes in NQ	The contribution of the programme for promoting NQ in relation to participants' needs and ambitions has been verified
		Use experiences and outcomes to improve your NQ programme	Suggestions for improving the programme have been discussed and implemented
		Hold qualitative evaluation or reflection rounds during and after the activity with the participants.	You have insight into how young people experienced the programme and have concrete ideas about how to improve the programme for subsequent delivery.





## Evaluating your NQ youth programme

Evaluation is a major element in the field on non-formal learning. With young people, the impact of a learning experience is mainly based on the quality of the evaluation process. Proper facilitation with good questions will crystallise the experience and help young people integrate learnings into their daily life. Similarly, as a youth worker, evaluating your NQ youth programme's quality will help you understand what the impact was and how to improve it for next time. Given that evaluation is such an important and challenging process, we would like to share some thoughts of this subject.

### *Why evaluation is so important*

After running a programme, you might wonder how effective it was and to what extent and whether you can measure this. Individual and group reflective practices done during and at the end of the programme can certainly be a way of detecting the extent to which the programme is fulfilling its aim and responding to the young peoples' own learning and personal needs in terms of NQ.

We believe that insights and learnings often happen way after the programme has ended, due to the specificities of the process-oriented and learner-centred approach that is typical of an experiential learning approach. This means that evaluations should be held several times during the process, and again once the programme is over. You could, for example, do this one, three or even six months after the programme has ended, but if that is too much, we suggest that at least one additional evaluation be done between one to three months after the programme has finished.

### *Evaluation at several levels*

Measuring impact or effectiveness can happen at several levels, such as individual or programme levels. To measure impact at participants' level, we can recommend using the NQ-36 one week before the programme starts, and again after the programme has finished (for example 1 month later). The young people will then be able to see for themselves if they have developed their NQ competencies and which domains. For you, as a youth worker, you could use the data to see if your programme has been overall effective for all the participants. You would need some statistical skills, however, to be able to do this at group level. Complementary evaluating the learning process at qualitative level through any kind of self or group reflection is of course an important aspect of non-formal learning and will allow you to understand how the growth process has unfolded.

We suggest you assess the effectiveness of your programme using measurements that are based on qualitative rather than quantitative data. Based on our experiences as practitioners, we'd like to share an example of how a long-term self-assessment template could look like. Using the items in the NQ-36 scale as a set of indicators, we drafted several questions you can use when facilitating reflection processes (see Appendix A). If you find the questions too detailed, you can also opt for a more open format in which you ask participants to reflect on their experiences within each domain (instead of all the competencies separately), or to select and use those questions that you find most appropriate for the programme your designed. Of course, you are welcomed to add any additional questions you may find relevant.





## *The several NQ domains interconnected*

You will realise that most young people's experiences in NQ programmes contribute to the development of more than one NQ domain or competency at the same time. For example, starting to cultivate a city garden can be an indicator of both the development of the emotional area (e.g., the connectedness to nature competency), and of the development of the cognitive area (e.g., literacy competency). In fact, cultivating a plant means not only loving it. It also means wanting to understand its characteristics and processes. What time of the year should the seed be planted? What soil does it thrive best in? How much water does it need? How long does it take to grow and when can it be harvested? What nutrients does it need? What insects may be harmful?

This illustrates that the NQ domains and their competencies are interconnected. Therefore, separating the areas and its competencies and creating a template with indicators can be a rather crude way of collecting data for evaluating the extent to which the programme was effective in terms of creating new healthy habits for oneself and the environment. We invite you to use the suggested indicators only as a way of igniting a process of self-inquiry and self-awareness and not as "musts" that, if not achieved, show the programme as not effective.

When wishing to understand to what extent your NQ programme was effective, you may want to be a bit more open in your questions and just take the various competencies as examples of the broader four domains of NQ. In your open inquiry, you can use more general reflection questions such as:

- What did you do lately that falls into this area and competency?
- How did it make you feel?
- Are there further steps/actions you would like to do next in this area? If so, which ones and who do you imagine will be with you?

## *Evaluating at programme level*

Similarly, we suggest to also assess the quality and effectiveness of your youth programme in general. Just as young people are 'growth' in the making, youth organizations and youth programmes are (or should also be) in continuous evolution. Evaluating and reflecting on your NQ programme is therefore essential so you can understand what worked well and what could be done differently. You can use the stepwise approach from table 3.1 to plan and evaluate your programme, complemented by qualitative evaluations held with participants and the other people involved (e.g., facilitators, youth workers). For example, you could ask questions about such as:

- How was the flow of the workshops perceived?
- Did the content of the workshops match the objectives of the programme?
- Did the facilitator(s) help you foster your NQ competencies during the programme?
- Was the setting suitable for the purpose of the programme?
- Did the group dynamics contribute to your NQ experience?





# References

- [1] Van den Berg, A.E. & Albers T. (2022). *Nature Intelligence in Youth Work: Conceptual model, measurement scale and critical success factors*. Aalten: Anatta Foundation.
- [2] Gardner, H. E. (1983). *Frames of mind: The theory of multiple intelligences*: Hachette UK.
- [3] Corradini, A., & O'Connor, T. (2010). *Emergence in science and philosophy* (Vol. 6): Routledge.
- [4] Bortoft, H. (1996). *The wholeness of nature*: SteinerBooks.
- [5] Miller, J. P., Nigh, K., Binder, M. J., Novak, B., & Crowell, S. (2019). *International handbook of holistic education*: Routledge.
- [6] Van den Berg, A. E., & Ter Heijne, M. (2005). Fear versus fascination: An exploration of emotional responses to natural threats. *Journal of Environmental Psychology*, 25(3), 261-272.
- [7] Ewert, A. W., & Sibthorp, J. (2014). *Outdoor adventure education: Foundations, theory, and research*: Human Kinetics.

# APPENDIX A:

## Template with example reflection questions for individual evaluation of an NQ-programme

COGNITION	
REFLECTION QUESTIONS	OPEN ANSWER WITH OBSERVATION OF ONE'S EXPERIENCES AND CONNECTED EMOTIONS
LITERACY	
To what extent are you able to focus on the different characteristics of plants and animals?	
Are you able to identify spontaneous edible plants?	
To what extent are you able to notice climate change?	
To what extent are you able to orient yourself in natural environments?	
CURIOSITY	
To what extent are you curious to explore the environment and how does it make you feel?	
To what extent are the elements in nature interconnected for you? Report some examples you noticed in your daily experience.	
How much do you love immersing yourself in unexplored natural environments?	
SKILLS	
How often do you spend a night out in nature using the natural elements around you to build a shelter or a tool you might need?	
To what extent are you able to use star constellations to orient yourself?	
How do you organize yourself when you go in the woods? Do you take a torch, rope, knife, k-way etc?	

## EMOTION

### REFLECTION QUESTIONS

OPEN ANSWER WITH OBSERVATION OF ONE'S  
EXPERIENCES AND CONNECTED EMOTIONS

#### CONNECTEDNESS

How does immersing yourself in nature make you feel?

How do you take into consideration and respect the natural environment around you?

To what extent do you take care of nature as well as your own body?

#### EMBODIMENT

To what extent do you love spending time in nature even with adverse weather conditions?

To what extent do you immerse yourself in natural environments without fearing getting dirty?

#### OPEN-MINDEDNESS

To what extent do any aspects of nature attract you, including insects, wild animals, or even dead animals etc.

To what extent do you find beauty in all aspects and natural manifestations, even the most impressive and frightening ones, such as storms etc?

To what extent do you recognize and respect the natural cycle of life? Think of examples.

To what extent are you at ease when spending time outdoors without facilities or toilets?

## SPIRIT

### REFLECTION QUESTIONS

OPEN ANSWER WITH OBSERVATION OF ONE'S  
EXPERIENCES AND CONNECTED EMOTIONS

#### TRANSCENDENCE

To what extent do you feel in flow with the whole eco-system?

To what extent do you feel that nature is an expression of spirituality?

When in nature, to what extent do you perceive a spiritual connection?

#### MINDFULNESS

To what extent do you feel more present?

To what extent are you aware of your sensations when in the presence of natural phenomena?

To what extent are you aware of the micro movements of the natural elements (hearing the ants walking on the leaves, the soil crackling when dry etc)?

## AUTHENTICITY

How much do you feel you can be yourself when in nature?

To what extent does nature inspire you to pursue your highest potential?

When in nature, to what extent do you perceive more clearly what your values are and what you deeply care for?

## ACTION

### REFLECTION QUESTIONS

OPEN ANSWER WITH OBSERVATION OF ONE'S EXPERIENCES AND CONNECTED EMOTIONS

### HEALTH

How often do you use natural remedies - homeopathy or phytotherapy or essential oils - when you have some minor health issues (headache, stomachache, muscle pain)?

How often are you aware of your bodily needs and take action to fulfil your needs - rest when tired, eat when hungry or drink when thirsty etc.?

When you're angry or sad or need to take a break from your daily life, do you go for a walk in nature?

How often do you go into nature to meditate or simply contemplate its features?

To what extent do you establish a bidirectional relation with animals as a way of regulating your emotions and nurturing your intuitive intelligence?

### ENGAGEMENT

How often do you recycle?

To what extent are you aware of where and how the goods you're using are produced? How often do you make choices based on an eco-systemic and ethical way of thinking?

How often are you engaged in activities to care for the environment?

How often do you collect the rubbish you find during your walks in nature?

To what extent do you pay attention to how you use resources (water, gas, electricity, etc)?



