

The **SPRACHSPINAT**^(R) concept: **Combining
language education, natural sciences, and
education for sustainable development**

Sonja Eisenbeiß



Affiliations



Universität
zu Köln



<https://www.sprache-spiel-natur.de/>



SPRACHSPINAT

Fostering language acquisition and education about language:

- playfully,
- in natural settings,
- while learning about nature,
- combined with education for sustainable development, supporting efforts to achieve the 17 UN sustainable development goals (SDGs)

Of course, an unusual approach requires an unusual name



Language Spinach?

Sprache + Spiel + Natur

Language + Play + Nature

Language Spinach?

SPRACHe + **SPI**el + **NAT**ur = **SPRACHSPINAT**

Language + Play + Nature = **LANGUAGE SPINACH**

It is green and makes your language grow stronger ...

... just like spinach made Popeye's muscles grow stronger



Components

- 3 lists with plant names for 3 types of gardens or garden zones:
 - a kitchen garden with aromatic herbs and vegetables,
 - a biodiverse insect garden,
 - a drought- and heat-tolerant climate garden.
- "WuPf"-box: a portable box with plants and a built-in „tower“ with worm compost and compost worms

Mapping of Components

- Language:
 - vocabulary and Grammar at Levels A1 to B1 (initially for German)
- Nature:
 - ecological principles
 - properties and important secondary plant compounds of core plant families for herbal pedagogy and gardens in educational institutions
- Education for Sustainable Development (see [Sprachspinat-Blog](#)):
 - 17 Sustainable Development Goals (SDGs), part of the UN Agenda 2030

SUSTAINABLE DEVELOPMENT GOALS



Kitchen Garden: Plant Names

- compounds like *Zitronenminze* 'lemon mint' or *Zitronenbasilikum* 'lemon basil' with:

Zitrone ('lemon') fem. typically in initial position

Minze ('mint') fem. typically in final position

Basilikum ('basil') neutr. (or masc.) typically in final position

Thymian ('thyme') masc. typically in final position



- compound vegetable names from larger plant families or genera with recurrent components, e.g. the *Allium* genus with *Lauch* 'leek', *Knoblauch*, 'garlic', *Bärlauch* 'wild garlic', *Schnittlauch* 'chives', *Lauchzwiebel* 'spring onion', *Zwiebel* 'onion'



Kitchen Garden: Language & Nature

- vocabulary:
 - nouns for herbs, vegetables, garden tools etc.
 - verbs for sensory experiences, likes and dislikes, cooking etc.
- German rules of gender assignment, e.g. feminine for schwa nouns (*Zitrone, Minze* etc.)
- morphological structure of compound nouns
 - headedness (head determines gender of compound, position language-specific)
 - linking elements such as *n* in *Zitrone-n-melisse* 'lemon balm
- ambiguity and informativeness of common (plant) names vs. scientific terminology
- scientific taxonomy: (plant) families, genera, and species
- common plant families, their properties & secondary plant compounds

Language & Nature Activities: An Example

Where do *Basilikum*, *Minze*, *Thymian* and *Zitrone* appear? Why?

Amalfizitrone, Anisbasilikum, Apfelminze, Bananenminze, Basilikumminze, Baumbasilikum, Bergamotteminze, Bergamottethymian, Bergminze, Bergthymian, Erdbeerminze, Frauenminze, Gartenminze, Gartenthymian, Goldzitronenmelisse, Hemingwayminze, Katzenminze, Königsbasilikum, Krauseminze, Kriechthymian, Lakritzbasilikum, Langstängelthymian, Langzahnthymian, Marokkominze, Meyerzitrone, Minzverbene, Mojitominze, Nanaminze, Orangenminze, Orangenthymian, Pfefferbasilikum, Pfefferminze, Rosenduftthymian, Schoko(laden)minze, Speerminze, Steppenthymian, Strauchbasilikum, Teppichthymian, Thaibasilikum, Thymbrabergminze, Wassermintze, Zitronatzitrone, Zitronenbasilikum, Zitronenbergbohnenkraut, Zitronengoldmelisse, Zitronengras, Zitronenjohanniskraut, Zitronenkraut, Zitronenkatzenminze, Zitronenmelisse, Zitronenminze, Zitronenthymian, Zitronenverbene ...



In which word-internal positions do *Basilikum*, *Minze*, *Thymian* and *Zitrone* appear? Why?

Amalfizitrone, Anis**basilikum**, Apfel**minze**, Bananen**minze**, **Basilikumminze**, Baum**basilikum**, Bergamotte**minze**, Bergamotteth**thymian**, Berg**minze**, Berg**thymian**, Erdbeer**minze**, Frauen**minze**, Garten**minze**, Gartenth**thymian**, Gold**zitrone**melisse, Hemingway**minze**, Katzen**minze**, Königs**basilikum**, Krause**minze**, Kriech**thymian**, Lakritz**basilikum**, Langstängel**thymian**, Langzahn**thymian**, Marokko**minze**, Meyer**zitrone**, **Minz**verbene, Mojito**minze**, Nan**aminze**, Orangen**minze**, Orangen**thymian**, Pfeffer**basilikum**, Pfeffer**minze**, Rosenduft**thymian**, Schoko(laden)**minze**, Speer**minze**, Steppen**thymian**, Strauch**basilikum**, Teppich**thymian**, Thai**basilikum**, Thymbraberg**minze**, Wasser**minze**, Zitronat**zitrone**, **Zitrone****basilikum**, **Zitrone**bergbohnenkraut, **Zitrone**goldmelisse, **Zitrone**gras, **Zitrone**johanniskraut, **Zitrone**kraut, **Zitrone**katzen**minze**, **Zitrone**melisse, **Zitrone****minze**, Zitronen**thymian**, **Zitrone**nverbene ...



In which word-internal positions do *Basilikum*, *Minze*, *Thymian* and *Zitrone* appear? Why?

Amalfizitrone, Anis*basilikum*, Apfel*minze*, Bananen*minze*, *Basilikumminze*, Baum*basilikum*, Bergamotte*minze*, Bergamottethymian, Berg*minze*, Bergthymian, Erdbeer*minze*, Frauen*minze*, Garten*minze*, Gartenthymian, *Goldzitrone*melisse, Hemingway*minze*, Katzen*minze*, Königs*basilikum*, Krause*minze*, Kriechthymian, Lakritz*basilikum*, Langstängelthymian, Langzahnthymian, Marokko*minze*, Meyerzitrone, *Minz*verbene, Mojito*minze*, Nanaminze, Orangen*minze*, Orangenthymian, Pfeffer*basilikum*, Pfeffer*minze*, Rosenduftthymian, Schoko(laden)*minze*, Speer*minze*, Steppenthymian, Strauch*basilikum*, Teppichthymian, Thai*basilikum*, Thymbraber*minze*, Wasser*minze*, *Zitronat*zitrone, *Zitrone**basilikum*, *Zitrone*bergbohnenkraut, *Zitrone*goldmelisse, *Zitrone*gras, *Zitrone*johanniskraut, *Zitrone*kraut, *Zitrone*katzen*minze*, *Zitrone*melisse, *Zitrone**minze*, *Zitrone*thymian, *Zitrone*nverbene ...



Kitchen Garden: Common vs. Scientific Names

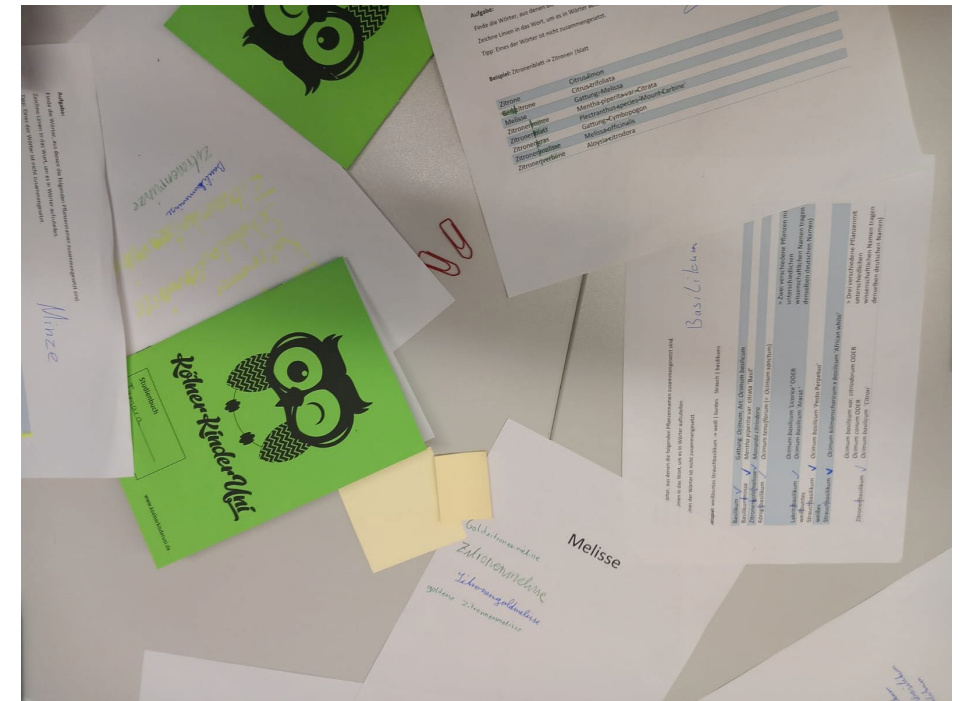
Deutsch	<ul style="list-style-type: none"> ● Lauch ● Porree 	<ul style="list-style-type: none"> ● Schnittlauch 	<ul style="list-style-type: none"> ● Knoblauch 	<ul style="list-style-type: none"> ● Bärlauch 	<ul style="list-style-type: none"> ● Zwiebel
English	<ul style="list-style-type: none"> ● leek 	<ul style="list-style-type: none"> ● chives 	<ul style="list-style-type: none"> ● garlic 	<ul style="list-style-type: none"> ● ramson ● wild garlic ● bear leek 	<ul style="list-style-type: none"> ● onion
Italiano	<ul style="list-style-type: none"> ● porro 	<ul style="list-style-type: none"> ● erba cipollina 	<ul style="list-style-type: none"> ● aglio 	<ul style="list-style-type: none"> ● aglio selvatico ● aglio orsino 	<ul style="list-style-type: none"> ● cipolla
Scientific Names	<ul style="list-style-type: none"> ● <i>Allium porrum</i> 	<ul style="list-style-type: none"> ● <i>Allium schoenoprasum</i> 	<ul style="list-style-type: none"> ● <i>Allium sativum</i> 	<ul style="list-style-type: none"> ● <i>Allium ursinum</i> 	<ul style="list-style-type: none"> ● <i>Allium cepa</i>

See [materials for Kinderuni \('children's university\) event](#) (Eisenbeiß & Torregrossa, 2023)



Kitchen Garden: Plant Name Lessons

- German & English compounds are right-headed
- Italian compounds are left-headed.
- Common names for plants and other entities
 - have synonyms and
 - do not reflect scientific taxonomy.This can be confusing.
 - We need scientific names.
- German compounds contain linking-elements.
- Heads of compounds determine their gender.



Kitchen Garden: Language & Nature Activities

- word-structure detectives (as just seen)
- coming up with new plant names & finding out whether they already exist (*licorice basil*: yes; *mustard basil*: no)
- planting and caring for plants
- sensory play
- harvesting, cooking and making tea
- creating herbal cosmetics
- learning about secondary plant compounds ...





Kitchen Garden: ESD & SDGs



Some topics:

- growing your own food
- local food production
- "industrial" vs. organic food
- urban gardening
- access to land and food
- the role of (women &) herbal and traditional medicines



Insect Garden: Plant Names

- plants for an insect-friendly garden
- plant names containing every-day words:
 - *Frau-en-mantel* ('lady's mantle')
lady's mantle
 - *Löwe-n-zahn* ('dandelion')
lion's tooth
- plant names containing derivations
 - *Gäns-e-blüm-chen* ('daisy')
geese-flower-DIM



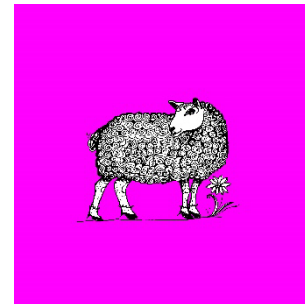
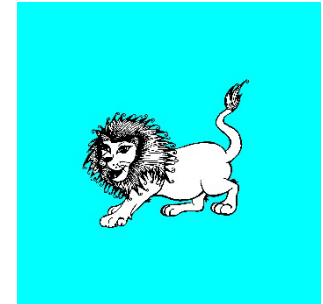
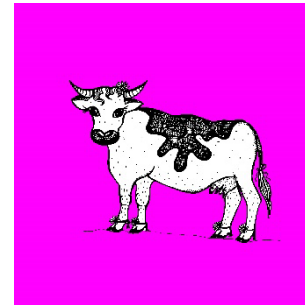
Insect Garden: Language & Nature

- vocabulary: basic nouns
- morphological structure
 - headedness
 - linking elements
 - derivation
- plant names and what they tell us about our relationship to nature
- (threats to) biodiversity
- polination, plant reproduction/propagation
- common plant families, their properties & secondary plant compounds
- healthy cooking

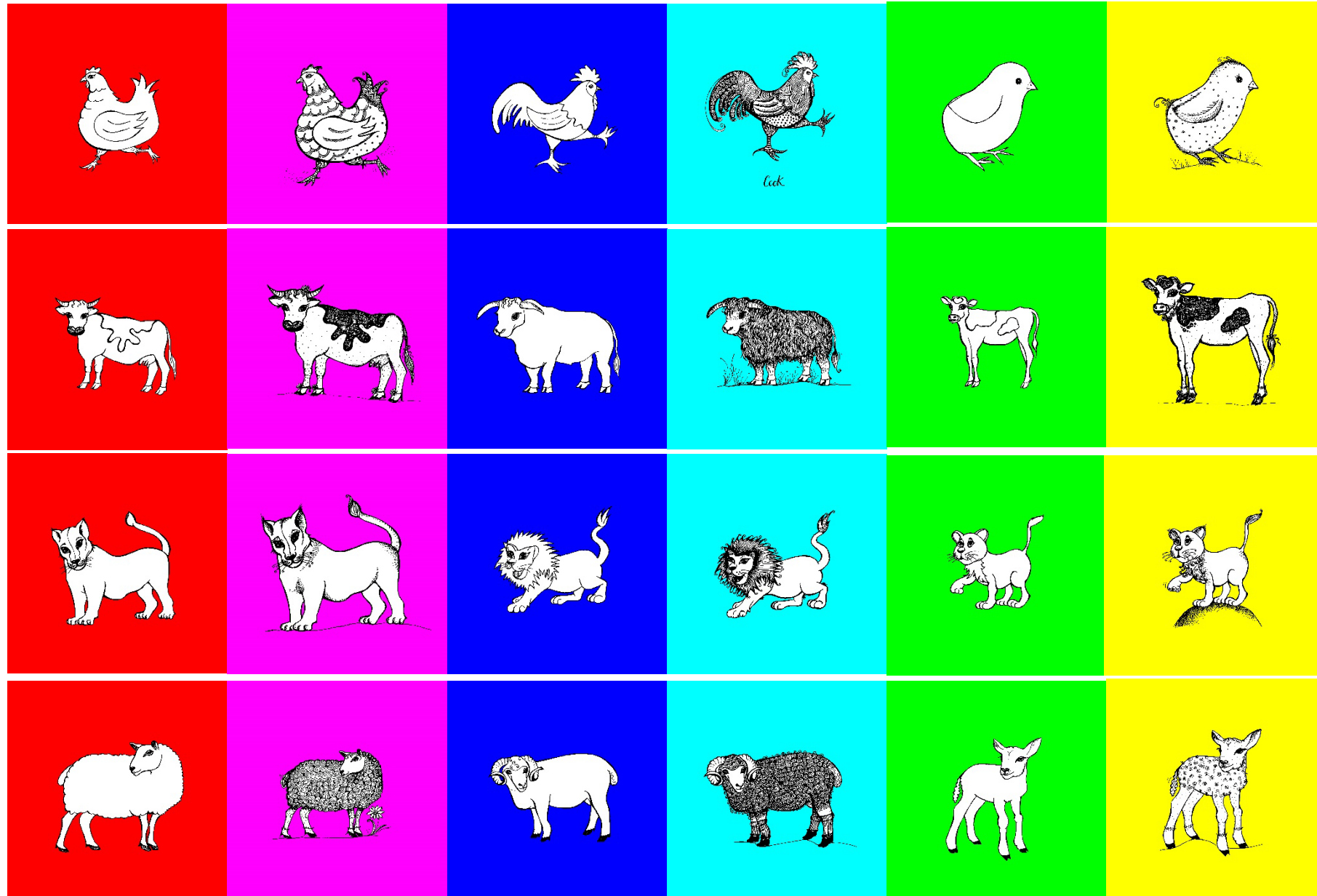


Insect Garden: Language & Nature Activities

- memo-games, matching pictures or names of plants to plant name components (e.g. lion-dandelion)
- selecting plants & planting
- harvesting, cooking and making tea
- creating herbal cosmetics
- researching origin of plant names
- search-and-find games in the garden
- writing/reading labels for plants
- cross-linguistic comparisons ...



The Sprachspinat Animal Picture Series





Insect Garden: ESD & SDGs



Some topics:

- plant names and what they tell us about our relationship with nature (food, medicine, toxins, etc.)
- biodiversity and habitats
- threats to insect life
- urbanisation and (insect-friendly) urban gardening
- ...



Climate Garden: Plant Names

- heat- and drought-tolerant stonecrop plants (*Crassulaceae*) with complex phrases as names
 - *Reichblühendes Fettblatt*
(*'richly blooming fat leaf'*)
 - *Weißblühender Rotmoos-Mauerpfeffer*
(*'richly blooming red moss wall pepper'*)



Climate Garden: Language & Nature

- vocabulary: adjectives and prepositions
- noun-phrase-internal inflection/agreement
- (plant) adaptations to climate (change)
- water transport in plants
- common plant families, their properties & secondary plant compounds



Climate Garden: Language & Nature Activities

- experimenting with watering systems
- researching climate-adaptation of plants
- fitting plants into botanical taxonomies (with gamification elements)
- hide-and-seek with hidden toys in the garden, with verbal instructions
- sensory play
- [interactive pictures with H5P](#)



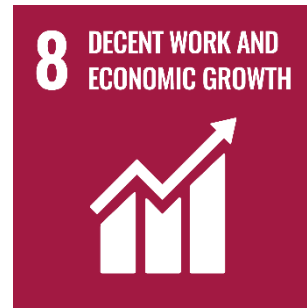
Climate Garden: ESD & SDGs

4 QUALITY EDUCATION



Some topics:

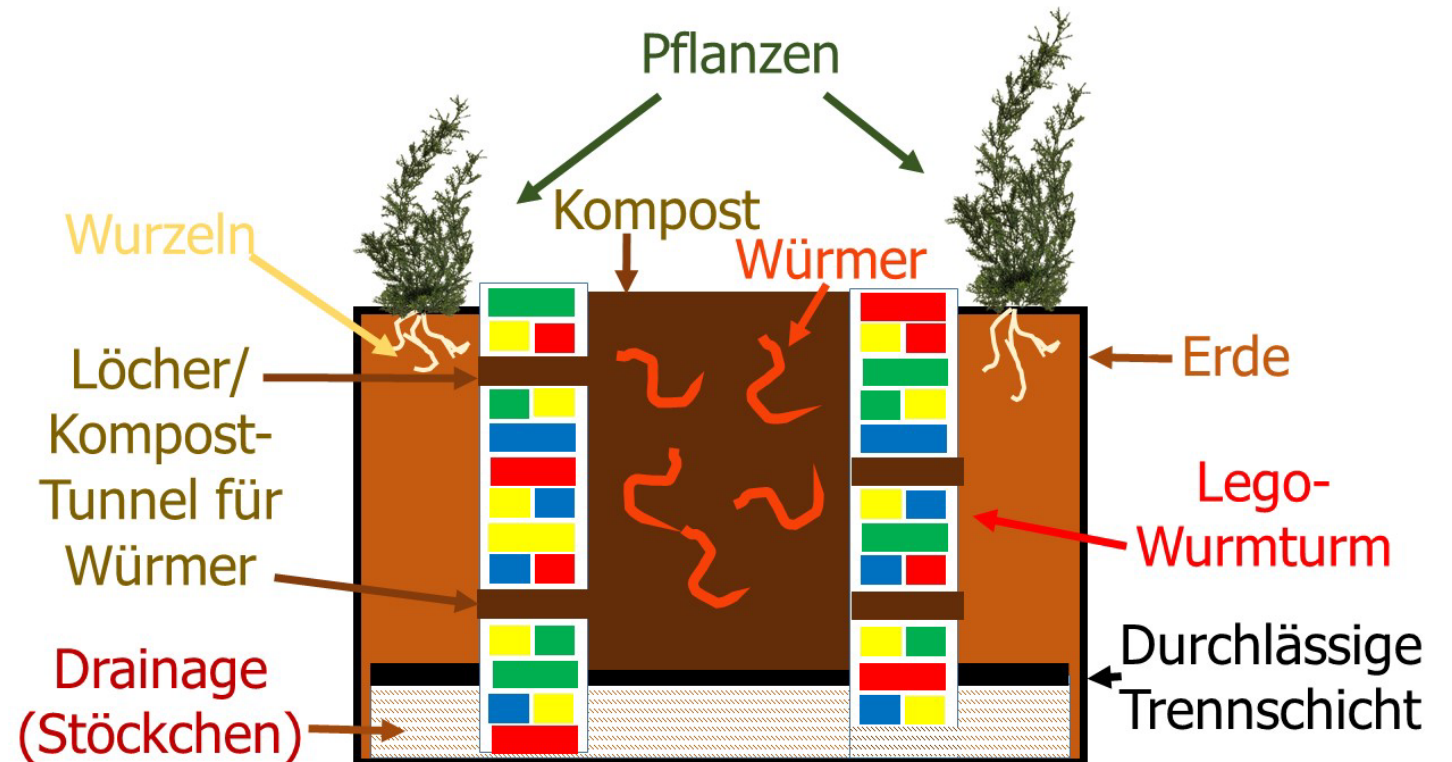
- climate change
- industry & (de-) growth
- climate change & inequality
- climate adaptation & cities
- international cooperation



SPRACHSPINAT

"Wupf"-Worm-Plant-Box: Concept

- a plant box with a built-in worm compost "tower"
- toy animals
- real and toy plants



"WuPf"-Worm-Plant-Box: Language & Nature

- vocabulary:
 - spatial expressions
 - adjectives (color, size, attitude, etc.)
 - numbers
- morphology:
 - verb forms (tenses, person, number)
- cycles (carbon, nitrogen, water)
- growth and decay
- composting



"WuPf"-Box: Language & Nature Activities

- sourcing the box
- building the worm compost "tower"
- planting up the box
- decorating the box
- discussing spatial arrangements
- discussing soil and the circle of life





"WuPf"-Worm-Plant-Box: ESD & SDGs



Some topics:

- 5 Rs: refuse, reduce, reuse recycle, rot (= compost)
- composting & climate change
- eco-systems & their preservation
- eco-systems & climate change
- regenerative agriculture & organic gardening



Applications of the Sprachspinat Concept

- ideas and articles on the [Sprache-Spiel-Natur-Blog](#) (tag "[Sprachpinat-Garten](#)")
- events:
 - [Kinderuni](#),
 - [VHS](#) reading mentoring training & gardening
- courses on ESD: University of Cologne & Technical University of Cologne)
- a [gardening project at the youth center in Köln Weiden](#)
- posts on [Instagram](#)
- ...



<https://www.sprache-spiel-natur.de/>

