ΜΑΚΕ ΙΤ ΘΡΕΝ

Set of digital downloadable templates

Deliverable 3.3

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Executive Summary

Make it Open is a project which prioritises widening participation through bringing maker culture, citizen science and open schooling to science education. In this context work package 3 develops an online platform to enhance the sharing of Open Schooling learning material created in the project. This online platform is called the Open Schooling Navigator. This document is the third of three reports on the Open Schooling Navigator while it is iteratively created.

It presents sketches of tools the navigator will contain. These will be in the OSN, both online and as downloadable templates. The reader is taken by the hand to follow the reasoning behind the development of these tools, this is based on user tests of the Open Schooling Navigator prototype, and a co-creation session with project partners. Following the questions and responses in user test 1 the reader learns how users' input is used to decide which functionality of the prototype of the Open Schooling Navigator should be improved, and added. This then leads to the presentation of the tools.

Finally the document addresses that the various outputs which are created in the project (the Open Schooling Navigator being one of them) are highly interdependent both in their creation, as well as in the way they are offered to the end-user. And a suggestion is made how to optimise their connection to one another.

List of abbreviations

In alphabetical order:

LS	Learning Scenario
LU	Learning Unit
OS	Open Schooling
OSN	Open Schooling Navigator

Table of Contents

List of abbreviations	4
Table of Contents	5
Table of Figures	6
1. Introduction	8
2. User tests and co-creating solutions	10
2.1 What we've learned from user test 1	11
2.1.1 Is the presentation of LSs accessible and valuable?	11
2.1.2 Can relevant LSs be found easily?	13
2.1.3 What level of adaptability of the LS is desirable?	14
2.1.4 Information about OS and OSN	15
2.1.5 The support teachers need to start working with OS	16
2.2 Improvements to be implemented in sprint 2	17
2.2.1 Improving the filtering system	18
2.2.2 Adding tools to customise and build LSs	22
3. Downloadable templates and online tools	23
3.1 Tool 1: improved filter and search tool	23
3.2 Tool 2: customising LSs	27
3.3 Tool 3: build new LSs	30
3.4 Tool 4: make a LS from scratch	34
3.5 Languages	35
4. Development process and alignment with other project outputs	37
Appendix 1: Instructions interviews novice teachers	38
Appendix 2: Materials interviews novice teachers	53

WP3: D3.3 Set of digital downloadable templates

Table of Figures

Figure 1.1 OSN development timeline	7
Figure 2.1: Filters for age category and subjects	17
Figure 2.2: Tags in LSs	18
Figure 2.3: Tags in LUs	19
Figure 3.1: Basic search for finding relevant LSs or LUs	23
Figure 3.2: Advanced search for finding relevant LSs or LUs	24
Figure 3.3: Advanced search with activated filter options	25
Figure 3.4 Customising LS tool opening in a popup window	26
Figure 3.5 Customising tool - detail 1	27
Figure 3.6 Customising tool - detail 2	28
Figure 3.7 Build your own LS tool opening in a popup window	30
Figure 3.8 Build your own LS tool - detail 1	31
Figure 3.9 Build your own LS tool - detail 2	32
Figure 3.10 Downloadable template to write completely new LSs/LUs	33
Figure 3.11 Downloading LSs in 10 different languages	35
Figure 4.1 Project outputs and their position, a starting point for conversation to align these	35

WP3: D3.3 Set of digital downloadable templates

1. Introduction

Make it Open is developing a mix of actions, tools and resources that are open for the education community to join, use or attend. Work package 3, led by Waag, develops the Open Schooling Navigator (OSN): an interactive online platform to support teachers and educators in navigating the open schooling world.

This deliverable D3.3 *Set of downloadable templates* is the last report deliverable about the OSN, before it's public launch in M19. A recap from D3.2 chapter 5 *Development Process* will help to understand where this deliverable sits in the development process of the OSN:

"Waag has identified four sprints of development of the OSN between M10 and M24. This development process was presented in Deliverable 3.1 *Content framework with defined requirements and parameters, paragraph 2.2.2 Sprint planning.* We are currently working in Sprint 2. Sprint 2 will be finished in M19, this is the end of the duration of *task 3.3 developing the Open Schooling Navigator,* which ends in the launch of the OSN, a project milestone. The majority of the functionality will be in place, the OSN will meet the description of Task 3.3: *Developing the OSN*"¹



OSN development timeline

Figure 1.1 OSN development timeline

¹ De Sterke, Pam. Deliverable 3.2 Navigator Clickable Prototype and Test Report. p.36

This report does *not* present a final set of downloadable templates. Their design, as part of the OSN, is still in progress, and they will be delivered as an integral part of the OSN in M19.

This deliverable contains:

- An overview of the user tests and co-creative decisionmaking process that informs the improvements in existing functionality and which tools/ templates to create in sprint 2, in chapter 2
- Conclusions of user test 1 and improvements that derive from these conclusions, following the preliminary conclusions presented in D3.2, in chapter 2.
- A description of tools we anticipate to offer users, to work with the material that was developed and tested in the pilots, both online and as downloadable templates as we foresee them now. This is covered in chapter 3.
- A visualisation of the connections between the various outcomes/products and services Make it Open is creating, in chapter 4. The interdependencies will have to become clear, so that we can anticipate their relationship from a user perspective.

2. User tests and co-creating solutions

To understand what functionality needs to be improved and added to the prototype of the OSN, from the perspective of its users, we are doing the following in sprint 2:

- 1. Waag has tested it with pilot teachers (user test 1) in pilot phase 2
- 2. All partners interview novice teachers (user test 2) in M16, using interview set-up created by Waag
- 3. Waag facilitates a co-creation session with all partners in the consortium meeting of M17 for shared decision making on specific parts of the tools (downloadable templates as well as online) to be implemented in sprint 2.

The next version of the OSN will be the result of sprint 2, after these steps have been taken, functionality will be adapted and added, the result is publicly available online OSN, at the end of M 19, and to be used in Make it Open by all who will be working in training or being trained in Open Schooling in WP 4 OS Hubs.

During the time of writing of D3.2 the analysis of the first user test was still preliminary. These are now final. In chapter 2.1 We take the reader through each question (a total of 5) we asked users, based on specific pages/ parts of the OSN); the responses; and what changes we want to make based on those answers. We realise this is a high level of detail, but it is the best way to show what the choices for the next iteration after the prototype derive from. It may be useful to go to the OSN prototype (D3.2) online as a reference: https://prototype.openschoolingnavigator.eu

In chapter 2.2 we summarise the improvements we are making in the OSN version that will be launched for the public in April 2022.

The second user test will be done with novice teachers (teachers new to the project and/or new to OS entirely). Following the 2nd user test Waag will host a co-creation session in M17 with all consortium partners to translate findings from the test (combined with the expertise of all partners) into solutions to be created in version 2 of the OSN. The user test is set up as qualitative design research. This kind of research helps designers to better understand underlying and sometimes hidden needs, desires and challenges of end users. Design research is about having an open conversation with people to further understand them. Since the consortium partners will all act as designers in the co-creation session that follows user test 2, all attendees of this co-creation session will act as researchers in user test 2. All attendees will interview novice teachers. These interviews are planned in M16.

Waag provided the attendees with an instruction for the interviews and with materials to use during the interviews, as presented in Appendix 1 and Appendix 2.

2.1 What we've learned from user test 1

We interviewed pilot teachers, while letting them browse the OSN.² Please follow the five questions we asked users, their responses and our conclusions as to what/how to improve in the next version.

2.1.1 Is the presentation of LSs accessible and valuable?

Question:

"Do users consider the current presentation of the 8 LSs from pilot phase 1 accessible and valuable? What elements about the way they are presented should be improved?"

Responses:

Teachers understand where and how to find the LSs/LUs in the OSN. They also find the presentation of the LSs/LUs helpful in scanning the information that is offered to decide if LSs/LUs are relevant for their own students/context. Two quotes from pilot teachers:

"The Navigator offers small steps to do big things."

² More information on the interviews and interviewees can be found in D3.2 *Navigator (paper or clickable) prototype and test report.*

"I feel comfortable, the information was ordered, nice hierarchy, I could easily find things"

While teachers appreciate the current presentation of the LSs and LUs, we also learned that the amount of information presented can be overwhelming. This is something to improve (see below). Next to this improvement, the test showed the possibility for small improvements in the presentation of LUs (see below).

Improvements next version:

• Improve dosing of the information in LSs and LUs.

The test showed that all information presented for LSs/LUs is considered relevant by teachers and at the same time a bit overwhelming. To make this information more easy to digest, we plan to present it step by step, e.g. through the use of tabs, such as 'general', 'course of activity'.

• Add pictures to LUs.

Teachers would like to see pictures that illustrate the parts of the LUs that describe Sources & Resources and the Course of Activity. This helps to better understand this information, and it makes scanning the information more easy.

• Clarify how to navigate between LUs within the same LS.

The OSN currently offers a possibility to navigate between sequential LUs within one LS. However, most teachers did not see this functionality. We will make this navigation clearer.

• Clarify the communication of phases for the different LUs.

LUs are tagged with phases (prepare, briefing, research, creation, sharing) with an individual colour code. Teachers did not understand this colour coding. We will design a better way to distinguish the communication of the different phases.

• Add a print option for the LUs.

Printing LSs is already possible in version 1. We plan to add the option to print individual LUs as well.

2.1.2 Can relevant LSs be found easily?

Question:

"Does the filter option to select relevant LSs supply sufficient guidance? What should be improved?"

Responses:

LSs/LUs of interest were mainly selected by browsing through them by scanning titles and subtitles. Teachers looked for specific topics of interest such as 'waste', 'forces' or 'creation'. But while teachers mainly browsed the LSs/LUs by topic, most of them also tried using the filters.

Teachers did understand how to use the filters. The test also made clear that teachers find the students' age filter less relevant than the STE(A)M subject filter. Most teachers state they feel comfortable to upgrade or downgrade a LSs/LUs that inspires them for their own students' age group. One of their responses:

"I filter by ages 12 to 16, also a bit lower and higher than my own students' age, because I can always go up or down the level."

Improvements next version:

• Add a search option by keyword.

When the number of LSs/LUs in the OSN increases in the future, scanning titles and subtitles to look for interesting topics is no longer considered user-friendly. An option to search by keyword will support teachers to find relevant inspiration more quickly.

• Reconsider the filters offered and the priority in which they are offered. For the next version of the OSN we plan to reconsider the filters offered. When improving the filtering system (more about this under 2.1.4 *Information about OS and OSN*), we will take into account the test outcome that teachers find filtering by STE(A)M subjects more relevant than filtering by age. This outcome can help us define in which order different filters will be offered.

2.1.3 What level of adaptability of the LS is desirable?

Question:

"How do users envision using LSs? Should LSs be adaptable to make them your own? Which parts of the LSs should be adaptable (which elements of a LS are subject to context and/ or culture?)? What level of freedom/ restriction is desirable?"

Responses:

Some teachers like the idea that the LSs/LUs can be used directly in their own lessons as a 'ready to use' lesson plan. But most pilot teachers envision using the LSs/LUs mainly as inspiration. Responses from test users include:

"When using a recipe book, I open the book, I look at the recipe, and I close the book. I will do the same with this navigator."

"As a teacher you translate the manual to your own class. This is what a teacher does. I am more motivated if I can put my own experiences into my lessons."

Improvements next version:

We learned from the test that teachers consider the LSs/LUs in the OSN mainly as inspiration. But in this project, we aim for the OSN to be more than a website that offers inspiration: the OSN has to inspire as well as activate.

The OSN should activate teachers more to start working with OS. Therefore we will design and add tools to the OSN, that support teachers to act upon the inspiration they will find in the OSN. With the current knowledge, we plan at least the following improvement:

• Add a customising tool for LSs.

A tool that helps teachers to customise existing LSs to their own context is regarded as one of the possible valuable tools to support teachers to act upon the inspiration found.

2.1.4 Information about OS and OSN

Question:

"Do users understand what OS is when using the OSN? Do they understand what the OSN has to offer?"

Responses:

Pilot teachers did not show particular interest in the information about OS that is offered by the first version of the OSN. They were very much focussed on the LSs and LUs.

"I'm here for the LSs and that's what I see. I mainly want a lot of examples that I can use in my lessons. The information about Open Schooling I know already."

Improvements next version

The teachers in this test were already experienced with OS and mainly interested in getting inspired by LSs/LUs and less intrinsically motivated to learn more about OS. But the OSN has a broader target group than experienced OS teachers and does have to give teachers new to OS a deeper understanding of it to truly support them to navigate the world of OS. Therefore, we plan improvements for the OSN that focus on inspiring as well as informing teachers. The next version aims at presenting the link between LSs/LUs and the topic of OS more explicitly. To do so, we plan the following improvements:

• Put OS indicators more central in filtering.

To emphasise more clearly that the LSs/LUs offer inspiration for OS activities (and not 'just' educational activities), we will improve the filtering system. We will put OS indicators (e.g. locations outside school, local partners, format, etc) more central in the filtering system.

• Redesign the homepage.

We will change the setup of the homepage. It is currently focussed on offering 'stand alone' information about OS (it does not link information about OS

explicitly to the LSs/LUs). Teachers now skip this information and instead look for what is of more interest to them (the LSs/LUs).

We will redesign the homepage in such a way that it guides the visitor directly to what is interesting for him/her. Compare this to a travel planning website: it does not start with explaining what travelling is, but it starts with helping you to plan a trip or get inspired. Once the OSN has met the teacher's first need (finding inspiration), we can link the LSs and LUs more explicitly to the topic of OS.

2.1.5 The support teachers need to start working with OS

Questions we had about the user's preference (not a direct question to users): How can we invite users to start working with OS and to explore OS on a deeper level? What information and inspiration about OS has to be added to do so? What is the role of the LSs in this?

Responses

An interesting insight we gained during the test is that teachers that were completely new to OS at the start of the pilot, were a bit "afraid" of starting OS, because it sounded so "different" and "big" and "unpredictable". By working on their LSs, these teachers experienced that OS is not as scary as they thought it would be. And in the end they all very much valued the positive impact of OS on their students. This is how one of the pilot teachers formulated this experience:

"Before I started this Open Schooling project, I thought it would be difficult. I thought it would be hard to organise getting students out of school and to organise people to collaborate. But it was less hard than I thought and I saw the positive impact on the students."

Improvements next version:

The above described insight, made us decide that it's important that the OSN should **keep it simple** and **show it's real**. The OSN should help teachers to get over the first impression that OS is too challenging. We will improve the OSN in such a way that it presents small first steps in doing OS (keep it simple) and show that OS is something

that is really done in real worlds that teachers can relate to (show it's real). With the current knowledge, we at least plan the following improvement regarding these insights:

• Add a search option for LUs.

In the current version of the OSN, teachers can only filter the set of LSs, to find inspiration that is relevant to them. To meet the insight that it's important to 'keep things simple', we plan to add the option to filter the set of LUs too. This can help teachers to see how they can start with small steps.

2.2 Improvements to be implemented in sprint 2

In this paragraph we will go into the improvements of current functionality and new functionality.

In 2.2 we go into various improvements that will be made to the OSN in sprint 2. Some of these require an iteration on the user interaction design by Waag, and implementation. Other desired improvements that came up require a solution co-created with other partners

The focus will be on improvements of current functionality and the addition of new functionalities that:

- Support teachers better to find inspiration (LSs and LUs) relevant to their own context.
- Show the relation between LSs/LUS and OS more explicitly.
- Support teachers to act upon the inspiration found: tools to do something with the inspiring LSs/LUs.

Concretely the main areas of improvement and added functionality are:

- Improving the filtering system
- Adding tools to customise and build LSs

Further detailing of these improvements and functionalities will be based on the output from user test 2 and the expertise of consortium partners.

2.2.1 Improving the filtering system

To support teachers to find LSs/LUs relevant to their own context, the current version of the OSN offers:

- 1. The possibility to find relevant LSs based on age category and STEAM subject (see figure 2.1).
- 2. Tagging of LSs and LUs with important characterics of these LSs and LUs (see figure 2.2 and figure 2.3)



Figure 2.1: Filters for age category and subjects



Home → Learning Scenarios

Our Moving World: Physics Everywhere

Presenting the principles of physics in an experiential and user-friendly way in a playground



This learning scenario was made by Jerusalem Secondary School - Secondary School Israel - IL



General info

The big idea

Playgrounds are a quintessential part of the childhood experience. In addition to contributing to physical and motor development, playgrounds foster language development, social skills, a sense of personal independence, and overall health. While playgrounds are usually perceived as a place for outdoor play, and not as an educational space, when viewed through the right lens the play and enjoyment of the playground can be turned into a learning experience, drawing on what users already know and increasing their agency in the learning process. In the Learning Scenario, we will improve the user experience at the playground by creating scientific captions and offering simple experiments that can be conducted using the playground equipment (without detracting from the free-play experience) and sharing the learned outcomes with nearby elementary school students.

The challenge

Presenting the principles of physics in an experiential and user-friendly way, in order to bring STEM to the wide range of people that use a playground located in a vulnerable neighborhood.

Figure 2.2: Tags in LSs

Engagement with community Locations to visit

Local Area Science museum

```
Local partners
```

 Independent learning

 Facilitators in the Science museum
 Expert
 Architect

 Engineer
 Parent
 Landscape architect
 Vertice

Placemaking artist Playground visitors Other schools Other students

Related careers

Architect Civil Engineer Landscape architect
Physicist

Main goals

Nex 1



Figure 2.3: Tags in LUs

To support teachers better in finding relevant inspiration, we plan the following improvements:

- 3. Put OS indicators more central in filtering and search
- 4. Offer basic search ánd advanced search
- 5. Offer search and filtering for LSs ánd LUs

2.2.1.1 Basic and extended search and OS indicators more central

For the *basic search* we plan to offer three filters to find relevant LSs and LUs, with which the OS indicators become a more central part of the OSN. We plan to use the following two indicators as filters, since they clearly relate to the open character of OS in terms of diversity in places to learn at and from and diversity in people to learn with and from.

- 1. Locations to visit
- 2. Partners to involve
- 3. To be decided in the co-creation session with consortium partners, following user test 2.

Putting these OS indicators more central in the filtering system supports teachers better in finding relevant inspiration and will also contribute to showing the relation between LSs/LUs and the topic of OS more explicitly.

Advanced search can offer search by keywords and filters like STE(A)M subject, age category, format, time/duration (teaching time, preparation time), number of LUs, competencies/skills, etc. The output of user test 2 combined with the expertise of consortium partners will help us to decide in the co-creation session in M17 which filters will be offered in the extended search.

2.2.1.2 Search and filtering for LSs ánd LUs

As already discussed in paragraph *2.1.5 The support teachers need to start working with OS*, the current version of the OSN only supports filtering the set of Learning Scenarios. To answer to the core value 'Keep it simple', we will add the

option to filter the set of Learning Units. This can help teachers to see how they can start 'small'.

2.2.2 Adding tools to customise and build LSs

To support teachers to act upon the inspiration found in the OSN, we plan to add tools to the OSN the help teachers to:

- customise an existing LS by reshuffling LUs, replacing LUs and/or removing LUs
- make a new LS by combining existing LUs to their own liking

These tools support editing Learning Scenarios. The OSN will not offer tools to edit Learning Units, for two reasons:

- 1. Editing complete projects (LSs) fits the goal of Make it Open better. We want to put the emphasis on the LSs, to transform the OSN from a place to find 'nice snacks' into a place where you can prepare 'nutritious meals'.
- 2. User test 1 learned that customising LUs means that teachers will edit them on an operational level. This is one of the strengths of teachers. Teachers made clear this is something they prefer to do in their own way.

Also, the OSN will also not offer digital tools to build completely new LSs or LUs (from scratch). For teachers that want to do this, we plan to offer the template for writing a LS/LU in an accessible way, like a pdf.

The output of user test 2 combined with the expertise of consortium partners will help us to detail the tools we plan to add to the OSN further in the co-creation session in M17.

3. Downloadable templates and online tools

In the second sprint, the OSN will be developed further using a 'bottom up' approach: we start with designing tools that support teachers in taking first steps in OS and once these tools are fully defined and designed, we incorporate them in a complete design for the OSN website. This means that for example, we will design the improved homepage (as mentioned in paragraph 2.1.4) after the tools that will be added are completely clear.

Paragraph 2.2 describes the additional tools for the OSN we will develop in Sprint 2 and motivates our choices for these tools. In this chapter, annotated sketches describe more concretely how we foresee these tools. The sketches show what the tools could look like and combined with the annotations (included under the sketches) show how we envision the user interaction for these tools.

Please note that we use the word 'sketches' instead of 'wireframes' or 'designs', to make clear that the figures in this chapter show our ideas and not the final design of these tools. Tools will be designed and developed further after the co-creation in M17.

This chapter ends with paragraph 3.5, describing the language options the OSN will offer to meet the needs of its international audience.

3.1 Tool 1: improved filter and search tool

As explained in paragraph 2.2.1, we will improve the filter and search system to better support teachers in finding relevant inspiration in the OSN. We will replace the current filtering system, which offers filtering by age category and by subject, with a basic search tool like the one in the sketch in Figure 3.1. This basic search tool puts OS indicators central and offers the possibility to search for either LSs or LUs. An advanced search tool offers the possibility to narrow search results down further, as shown in the sketches in Figures 3.2 and 3.3.



Figure 3.1: Basic search for finding relevant LSs or LUs

#	Explanation
1	Possibility to search in either LSs or LUs
2	The third indicator that will put OS more central in searching for fitting inspiration will be determined during the co-creation in M17
3	Advanced search is optional, when clicking on this option the popup presented in Figure 3.2 opens.

	C Learning S	cenarios C Learning Units		
	•			
	Locations to visit	rtners to involve 👻 Third i	ndicator 👻	
	Adva	nced search	×	
	What are you looking	for? Q	4	
	Select subject	Select format	- 6	and a state of the
C	Select competency -	Select phase	•	STR.
	Age O	Preparation time	120 minutes	
Food travel Get insight into whe behind the scenes of	Number of Learning Units	Teaching time O Is minutes		ur air? ng a device to
Design, Earth & Space Sciences, Life Sciences				9-11 yrs
	Canc	el Search		

Figure 3.2: Advanced search for finding relevant LSs or LUs

#	Explanation
4	Search by keyword will be offered
5	Dropdowns that offer criteria to filter LSs or LUs further. An example of an opened dropdown is presented in Figure 3.3.
1	Cliders that offer colocting ranges for criteria to filter I.Co. or I.U.B. further. An example of an

6 Sliders that offer selecting ranges for criteria to filter LSs or LUs further. An example of an activated slider is presented in Figure 3.3.

Exactly which filter criteria will be presented in this advanced search popup, will be determined during the co-creation in M17. Important to note: some criteria are only

relevant for LSs and not for LUs (and the other way around). We will take this into account when further designing and implementing this tool.

	Learning Scenarios Learning Units
	Locations to visit Partners to involve Third indicator
	Advanced search
	What are you looking for?
	Select subject
C. S.S.	Consign & Art C
	Engineering & Technology Environmental Sciences Life Sciences Life Sciences
Food travel	Mathematics & Computer Science Physical Sciences Social Sciences & Humanities Js 15 minutes Js 120 minutes January
behind the scenes d	I2 12 minutes 120 minutes
behind the scenes c Design, Earth & Space Sciences, Life Sciences	Cancel Apply 9-

Figure 3.3: Advanced search with activated filter options

#	Explanation
7&8	Example of activated filters for subject and preparation time: after clicking the Search button, only items that match the subjects Earth & Space Sciences and Life Sciences and a preparation time between 15 and 75 minutes will be shown.

3.2 Tool 2: customising LSs

As explained in paragraph 2.2.2, we will add a tool to the OSN that supports teachers to act on the inspiration found in the OSN, by customising an existing LS by reshuffling, replacing and/or removing LUs. Figure 3.4 shows what this tool could look like (details of this sketch are annotated in additional figures).

We envision this tool to show in a popup window. It can be accessed by various (later to be determined) ways, including at least a button 'Customise this LS' with each LS.

open schooling navigator				Home	Open Schooling	Learning Scenarios
Home → Learning Sc		Custom	ize		×	
		loving World: P				
	Presen	ting the principles of pl user-friendly way	rysics in an experient in a playground	tial and		
bette	r? Nice! With thi	mize this Learning S s tool you can reshu oughts and ideas ab	iffle, remove and a	add Lear	r own context ning Units	
This no	[•] ideas otepad is at your ser io. Click <u>here</u> to get	vice to organize your ide	as about the customiz tions you can ask you	zation of t rself.	his Learning	
Engineering & Tech						
s learning scenarian Learn Reshuft	ning Units ffle, remove or add I n also add notes to	earning Units to custor	nize this Learning Scen nur ideas about change	ario to yo 25 you wai	ur own liking. ht to make.	• 13-13 yrs
eneral info	LU 1	LU 2	LU 3		LU 4	
The big ic Move laygrounds are a Add a no priributing to ph avelopment, sac thile playgrounds		Move Delete	Move Delote		Move Delete	
educational space playground can be know and increasi						Expert Architect at Other schools
vill improve th offering simpli pment (witho	LU 5	LU 6	LU 7		LU 8	
ed outcomes	Deiete	Move Delete	Move Delete		Move Delete	rehitect
Add a no		Add a note	Add a note		a note	
nerable neighb						
short al	;					where and learning raits capital by upgrading
sics that can b	LU 9	+				rapital by upgrading nyground"
ned plaque:						ty actors
is clence mu Add a no						
s. At the end (it, to which th m the student						d Newton's Laws of
						where and are rid as a research
eacher feedb.	Γ	Print Sha	are Save			dge for every citizen Ierstand how the
Learning				Public space	es are designed accord	ng to their function and
most inspiring one active in the inqui						

Figure 3.4 Customising LS tool opening in a popup window



Figure 3.5 Customising tool - detail 1

#	Explanation
1	The title of the LS that is going to be customised
2	Explanation of what can be done with this customising tool
3&4	The 'Your ideas' section offers teachers the option to make notes of their ideas about customising the LS (4). We plan to add tips and tricks to help them in this, for example by offering a list of questions they can ask themselves when customising the LS (3). This part of the tool will be designed further during the co-creation in M17.

General info The big it Playgrounds are a contributing to pin development, soc While playground educational space playground can bit know and increase we will improve than a differing sign equipment (with learned outcome The chall Presenting the pin to bing STEM to with a science museuri, captioned plaque playground equip this ta science museuri, captioned plaque playground equip this a science museuri captioned plaque this a science museuri this a	C() ()
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Figure 3.6 Customising tool - detail 2

#	Explanation
5	Default the LUs that are part of the LS that is going to be customised are presented in their default order. With the delete option, teachers can delete a LU from this LS. With the move option, teachers can reshuffle LUs, to change their order within this LS. The detailed user interaction for these actions (what happens after clicking these buttons) will be designed at a later stage.
6	We plan to offer the possibility to add notes to each of the LUs. This way, next to deleting, adding and reshuffling LUs, teachers can also add notes about details they might want to customise for specific LUs.

- 7 This part of the sketch visualises the idea to offer the possibility to add other LUs that are present in the OSN to the LS. The detailed user interaction for this action (what happens after clicking this button) will be designed at a later stage.
- 8 These buttons offer teachers the possibility to save, print or share their ideas about the customization of the LS. The co-creation in M17 will help us to decide if these are indeed the most valuable actions we need to offer teachers. The detailed user interaction for these actions (what happens after clicking these buttons) will be designed at a later stage.

3.3 Tool 3: build new LSs

Paragraph 2.2.2 explains that we will add a tool to the OSN that supports teachers to act upon the inspiration found in the OSN, by building their own LS by combining existing LUs to their own liking. Figure 3.7 shows what this tool could look like (details of this sketch are annotated in additional figures).

We envision this tool to show in a popup window. It can be accessed by various (later to be determined) ways, including at least a button 'Build your own LS' on the page that shows the overview of all LSs.



Figure 3.7 Build your own LS tool opening in a popup window



Figure 3.8 Build your own LS tool - detail 1

#	Explanation	
1	Explanation of what can be done with this building tool. Also a reference to the downloadable template that can help to build a LS completely from scratch (more about this in paragraph 3.4).	
2	This field invites teachers to think about the core of the LS they plan to build. Having to write a title in one sentence requires to be concise in this.	
3	This section helps to put OS central in building a new LS. It invites teachers to think about the factors that will make their project a true OS project. The fields presented below the three indicators are open text fields, in which teachers can add notes.	
4&5	The 'Your ideas' section offers teachers the option to make notes of their ideas about building a LS (5). We plan to add tips and tricks to help them in this, for example by offering a list of questions they can ask themselves when building the LS (5). This part of the tool will be designed further during the co-creation in M17.	



Figure 3.9 Build your own LS tool - detail 2

#	Explanation
6	Default this building tool opens with a 'blank slate', without any LUs. With this 'Add a LU' option, teachers can start adding LUs to their LS. We plan to offer two ways to select LUs: by searching in all LUs and by selecting a LU from a list of favourite LUs the teacher can make in the OSN. For both options we note that the exact user interaction will be determined and designed at a later stage.
7	Once LUs are added to the LS, the same options as offered in the customising tool (see paragraph 3.2) to delete and move LUs and make notes for specific LUs are available for teachers.
8	These buttons offer teachers the possibility to save, print or share their idea about the new LS. The co-creation in M17 will help us to decide if these are indeed the most valuable actions we need to offer teachers. The detailed user interaction for these actions (what happens after clicking these buttons) will be designed at a later stage.

3.4 Tool 4: make a LS from scratch

The 'Build your own LS' tool offers teachers the possibility to build OS projects using LUs that are present in the OSN. Paragraph 2.2.2 explains the OSN will not offer an online tool to build completely new LSs or LUs (from scratch). For teachers that want to do this, we will offer the template for writing a LS/LU in an accessible way, like a pdf. The sketch below shows our current idea about this 'tool'. We envision this 'tool' to show in a popup window. It can be accessed by various (later to be determined) ways, including at least a button 'Write your own LS' on the page that shows the overview of all LSs.



Figure 3.10 Downloadable template to write completely new LSs/LUs

#	Explanation
1	Explanation of what can be done with this tool. Also a reference to the tool that helps build a LS from existing LUs (as described in paragraph 3.3).
2	A visual preview of what can be expected when clicking the download button (3).
3	Button to actually download the template. The detailed user interaction that follows clicking this button will be designed at a later stage.

3.5 Languages

The OSN will be launched in English. All partners and third parties have the option to translate the OSN in their language, if they feel this is necessary to engage their local partners to create a national Hub. They can do so at their own pace.

The Learning Scenarios will all be translated into the national languages of all consortium - and third party partners. They will be available to download for the OSN in, at least, the following 10 languages:

- 1. Dutch
- 2. English
- 3. Greek
- 4. Hebrew
- 5. Hungarian
- 6. Polish
- 7. Portuguese
- 8. Rumanian
- 9. Spanish
- 10. Swedish

Figure 3.11 shows how we envision this to work in the OSN.

open scho navigator	ng Home Open Schooling Learning Scenarios
Home → Learning Sc	Download Learning Scenario
	Our Moving World: Physics Everywhere Presenting the principles of physics in an experiential and user-friendly way in a playground
	You can download this Learning Scenario in different languages. Please select your preferred language below to enable the Download button.
and a set	Select a language
	Cancel Download 2

Figure 3.11 Downloading LSs in 10 different languages

#	Explanation	
1	In this dropdown list one language can be selected.	
2	2 After a language has been selected in the dropdown list (1), the Download button is enabled and can be clicked to download the LS in the selected language.	
4. Development process and alignment with other project outputs

For an optimal user experience these 'products', or outputs need to be linked, they need to have a shared main message, and clear divisions in which output serves which purpose, with logical links between them that a user can easily follow.

Waag has put this on the agenda for the consortium meeting in Feb 2022, as a starting point for conversation on how each of these outputs communicate a shared message and how each of them offers something unique, and how they all interlink to enable the user to find the resources she needs.



Make it Open Project outputs

Figure 4.1 Project outputs and their position, a starting point for conversation to align these.

Appendix 1: Instructions interviews novice teachers



Why this document?

- As discussed, we started the co-creation part of the development of the Open Schooling Navigator.
- To learn about the wishes of novice teachers, we ask you to perform interviews with novice teachers in your professional or personal network between Dec 16 and Feb 6th.
- The knowledge you gain about the novice teachers, is important input in the co-creation session that will be part of the partner meeting Feb 7-10, 2022. You don't have to share the results of your interviews with us before the co-creation session!
- This document supports you in doing the interviews.

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Set up of the interview

- The interview consists of three parts
 - Part 1: setting the scene
 - Part 2: getting to know how **project MiO** can support novice teachers in taking first steps in OS
 - Part 3: getting to know how the **OS Navigator** can support novice teachers in taking first staps in OS

This document offers a detailed instruction for all three parts of the interview. Next to this document, you also received a presentation with materials for the interview containing all information and assignments necessary to perform the interview.

Part 1 - Setting the scene

About part 1

The first part of the interview helps the teacher you are about to interview to understand the context of the interview. It prepares the teacher to reflect on his/her own ideas about OS.

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Part 1: steps and duration

This part consists of 4 steps:

- Welcome and introduction
- Assignment 1
- Present basic information about OS
- Assignment 2

This part is estimated to take a maximum of 10 minutes

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max

10 mins

Step 1: Welcome and introduction

Start with a short word of welcome, including a short introduction of yourself and the project MiO. This will help the teacher to understand the basic context of the interview. If you wish to, you can use the information on https://makeitopen.eu/about/ in your introduction about MiO.

You can also communicate the goal of the interview: we want to get a better understanding of what project MiO can offer teachers to support them in taking first steps in OS. This means everything teachers tell you is valuable, and that there is no right or wrong in answers to your questions.

Step 2: Assignment 1

After your word of welcome, use assignment 1 in the materials presentation to help the teacher introduce him/herself and to help him/her think about his/her current position towards OS.

Ask the teacher where s/he would put the arrows at the right place on the three scales. You can do this by sliding the arrows for them and let them say 'Stop' when it's at the right place. Shortly talk about why the teacher put the arrows there.

Step 3: Present basic information about OS

To help the teacher to understand what we consider OS, present the two slides with basic information about OS as offered in the materials presentation. This information is copied from *MiO Pack One: Introduction to Open Schooling*, as developed in WP1.

Let the teacher read this information. Don't elaborate further on the topic of OS (in the next step you will talk more about Open Schooling).

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Step 4: Assignment 2

After the teacher has read the basic information about OS, present assignment 2 from the materials presentation.

Ask the teacher what s/he would fill in in the blue boxes. You can type the answers in the blue boxes. Let them shortly explain their examples.

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Part 2 - Support from MiO to start Open Schooling

About part 2

In this second part of the interview, you are looking for things that will trigger (or withhold) novice teachers to take first steps in doing OS.

You are not yet focussing on the OS Navigator! The next part of the interview focuses on getting to know how the Navigator can support the teacher in starting to do OS. This part of the interview helps to empathize with the teachers in a broader perspective. It can also give you insights that can be interesting for other MiO work packages.



Step 1: Present more information and examples OS

From part 1 of the interview, the teacher learned the very basics about OS. Now it's time to introduce the teacher to the *Why*? and *How*? of OS.

The teachers you interview need to know a bit more about OS, because this helps them to do assignment 3. In this assignment you will discuss what could support them to take first steps in doing OS themselves.

Step 1: Present more information and examples OS

Present the slides with information about **OS benefits**, **OS needs** and the **two case studies** from the materials presentation. This information is copied from *MiO Pack One: Introduction to Open Schooling* and *MiO Pack Two: Open Schooling case studies*, as developed in WP1.

Let the teacher read the information on the slides. Try not to elaborate further on OS. When s/he has read all information, use the slides for assignment 3. With this assignment, we want to check the teacher's ideas about OS after having read this specific amount of information about OS.

Step 2: Assignment 3

In project MiO, we aim to offer teachers tools that support and/or trigger them to start doing OS. In assignment 3, the teachers reflect on their needs and wishes regarding this kind of support (based on what they just learned about OS).

In the materials presentation, we have prepared sentences the teachers can choose from and finish in a way that fits their own ideas about Open Schooling. These sentences will help to have a conversation about their needs and wishes. If the teacher needs inspiration to finish the sentence, you can show the slides with inspiration.

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Step 2: Assignment 3

Tips and tricks:

- Please be aware we are not yet focussing on their needs and wishes regarding the Navigator. The next part of the interview will focus on the Navigator.
- In this assignment, it's not so much about the exact sentence teachers choose and how exactly they finish it. It's really about the conversation you have based on the sentence the teachers formulate.
- Dig deep and focus on getting to the 'why' of the needs and wishes discussed.

Part 3 - Support from the Navigator to start OS

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About part 3

In the previous part of the interview, you have talked about what teachers need to start doing OS, in general terms.

This 3rd - and last - part of the interview focuses on getting to know how the *OS Navigator* can support teachers to start doing OS.

Part 3: steps and duration This third part consists of 3 steps: Present the prototype of the Navigator Including explanation of the structure of LSs and LUs Assignment 4 Assignment 5 This part is estimated to take a maximum of 25 minutes Step 1: Present prototype of OS Navigator Introduce the first version of the Navigator (the prototype) to the teachers.

Introduce the first version of the Navigator (the prototype) to the teachers. Please emphasize that what they see, is a first version, a prototype. Let them know this interview will give valuable input to improve this first version.

It's also important to help the teachers to understand the structure of Learning Scenarios and Learning Units. To do assignment 4 and 5, they have to understand that one Learning Scenario (LS) consists of multiple Learning Units (LUs).

You can use the texts on the next slides to introduce the Navigator and to explain the structure of LSs and LUs.

Step 1: Present prototype of OS Navigator

"One of the tools we are developing in project Make it Open, is a website that supports teachers in taking their first steps in Open Schooling. This website is called 'Open Schooling Navigator'. I will now show you a prototype, a first version, of this Navigator."

- Go to https://prototype.openschoolingnavigator.eu/
- Scroll down to show the teacher what can be found on this page.
- You don't have to explain everything on this page, a first impression is sufficient.

Step 1: Present prototype of OS Navigator

"In this first version of the Navigator, you find basic information about Open Schooling and inspiration for Open Schooling activities. This inspiration is offered to you by Learning Scenarios. Learning Scenarios are plans for Open Schooling projects, made by teachers from different countries, for students in different age categories and with a focus on different STEAM subjects."

- Go to https://prototype.openschoolingnavigator.eu/learning-scenarios
- Scroll down to show the collection of Learning Scenarios.
- Use some filters to show how teachers can narrow down the collection of Learning Scenarios based on age category and STEAM subject.

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Step 1: Present prototype of OS Navigator

"Every Learning Scenario consists of multiple Learning Units. The Learning Units can be seen as separate 'building blocks' or 'lessons' or 'activities' that together make an entire Open Schooling project: the Learning Scenario. Learning Units cán be done as separate activities, but they are designed to fit into a complete project."

- First clarify the structure of LSs and LUs using the slides in the materials presentation.
- Then go to https://prototype.openschoolingnavigator.eu/learning-scenarios and select a LS of your own choice. Show how teachers can find the LUSs that are part of this LS.
- Give the teacher a few minutes to get an idea of the content of the LS you selected and to have a look at one or two LUs.

Step 2: Assignment 4

After the teacher has had a look at the Navigator, it's time for assignment 4. This assignment helps to find out which filters and search options teachers need to find fitting inspiration (relevant LSs and LUs). Use the slide in the materials presentation to do this assignment.

Please note: in the prototype of the Navigator it's only possible to use filters to find relevant Learning **Scenarios**. We want to add functionality to enable teachers to also filter Learning **Units**. But this is not yet part of the prototype.

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Step 2: Assignment 4

In the slide for this assignment you will find blocks with possible filters / search options, empty blocks and 3 dots. In the empty blocks, you can fill in ideas for filters that teachers add themselves.

Ask the teacher to tell you which 3 filters/search options are most important for him/her. You can use the dots with numbers to show this prioritization to the teachers (put the dots on the right blocks) and help the teacher to reflect on it: the conversation about the WHY of the prioritization is more interesting than the exact result of their prioritization.

Step 3: Assignment 5

Now that the teacher has thought about indicators that helps him/her to find relevant inspiration, it's time to talk about how the OS Navigator can support him/her in getting into action, based on the inspiration found.

To help the teachers formulate their ideas about how the OS Navigator can support them, we have prepared assignment 5. In this assignment, you start with asking the teachers to imagine they found a Learning Scenario and/or a Learning Unit that inspires them (they don't have to select a concrete LS or LU, it's about the idea that they found fitting inspiration).

Step 3: Assignment 5

The slides in the materials presentation show different thoughts teachers can have about the inspiration found. The slides also show different possibly interesting tools the OS Navigator could offer to support teachers in getting into action.

Let the teachers select tools that fit the different thoughts they may have. You can delete the tools they don't select. Ask the teachers to reflect on their choices: the conversation about the WHY of the selection of tools is more interesting than the exact result of their selection. Appendix 2: Materials interviews novice teachers

MAKE IT OPEN **INTERVIEWS NOVICE TEACHERS** interview materials Why an interview? Μ

Why an interview with novice teachers?

- As discussed, we started the co-creation part of the development of the Open Schooling Navigator.
- To learn about the wishes of novice teachers, we ask you to perform interviews with novice teachers in your professional or personal network between Dec 16 and Feb 6th.
- The knowledge you gain about the novice teachers, is important input in the co-creation session that will be part of the partner meeting Feb 7-10, 2022.
- You don't have to share the results of your interviews with us before the co-creation session!

Μ

Setup of the interview

Setup of the interview

- The interview consists of three parts (see also next slides)
 - Part 1: setting the scene
 - Part 2: getting to know how **project MiO** can support novice teachers in taking first steps in OS
 - Part 3: getting to know how the **OS Navigator** can support novice teachers in taking first staps in OS

All information and assignments necessary to perform the interview is available for you in this presentation. A more detailed instruction is available in the document Instructions interviews novice teachers.

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Part 1 - Setting the scene

Helps the teacher you are going to interview to understand the context of the interview. Prepares the teacher to reflect on his/her own ideas about OS.

- Word of welcome and introduction of the topic
- Assignment 1
 - To get to know the teacher a bit better
- Give information 'What is Open Schooling'
 - To give the teacher a basic understanding of OS
- Assignment 2
 - To help the teacher reflect on what s/he already does that fits OS

Part 2 - Support from MiO to start Open Schooling

Discussing what the teacher thinks and how s/he feels about OS, to find out what could trigger or withhold the teacher to take first steps in OS.

Goal of this part is to find out what MiO (not yet focussing on the Navigator!) can do to support novice teachers in taking these first steps.

- Show information 'Open Schooling benefits' and 'Open Schooling needs' and two case studies
 - To expand the teacher's understanding of OS
- Assignment 3
 - To help the teacher put into words his/her needs and wishes about what MiO can offer to support in taking first steps in OS

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Part 3 - Support from Navigator to start Open Schooling

In Part 2 you got an understanding of what the teacher needs - in a broad perspective - to take first steps in OS. This part of the interview focuses on getting to know how the Navigator can support the teacher in taking first steps in OS.

- Present the prototype of the Navigator and explain the structure of LSs and LUs
 - To help the teacher understand what the Navigator is
- Assignment 4
 - To understand which filters help the teacher to find relevant LSs and LUs
- Assignment 5
 - To help the teacher put into word what kind of tools the Navigator can offer to support him/her in taking first steps in OS by acting upon the inspiration found.

Materials interview Part 1



What is Open Schooling?

Open Schooling offers students the **opportunity to learn together in the real world**, and widens their horizons to learn from people other than their teachers.

Open Schooling is an approach in which purposeful **collaborations are built between schools and their wider communities**. Families, experts and other stakeholders collaborate with teachers and students to address relevant local challenges, contribute to community development, and promote an active global citizenship attitude.

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What is Open Schooling?

Open Schooling can be tailored to deliver specific curriculum in a new way, to improve student engagement to initiate and deepen a school's relationships with its community.

Whatever form it takes, at the heart of Open Schooling is a mindset and culture that is **outward facing** and **collaborative**.

You almost certainly already do some form of Open Schooling: when you involve outside partners, or bring your students outside the school walls.

Assignment 2: reflect on Open Schooling

You almost certainly already do some form of Open Schooling: when you involve outside partners, or bring your students outside the school walls. Think of **two examples** in your work in which you involved **outside partners.**

<example 1
involving
outside partners>

<example 2
involving
outside partners>

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Assignment 2: reflect on Open Schooling

You almost certainly already do some form of Open Schooling: when you involve outside partners, or bring your students outside the school walls. Think of **two examples** in your work in which you **brought your students outside the school walls**.

<example 1
bringing students
outside school walls>

<example 2
bringing students
outside school walls</pre>

Materials interview Part 2

Open Schooling benefits

Open Schooling holds the potential to benefit students, teachers, schools and the local community. The next slides present benefits for all four.

"I was very impressed by the way my students guided the younger students. They were very prepared." – Israeli teacher involved with the Make it Open project

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Open Schooling benefits for students



Expand pupils' horizons and raise their aspirations

- Open Schooling allows students to learn at their own pace and helps them develop essential skills such as communication, teamwork and critical thinking.
- Students relate their learning to real life in the world around them and are more prepared for real-life situations when they leave school, modelling how learners can participate as active citizens in the future.

Open Schooling benefits for teachers



Provide unique professional development experiences for school staff; Improve teaching and learning

- Personal and professional development
- Exploring new ways to deliver curriculum
- Opportunities to work collaboratively across different subject areas
- Connecting to parents and local community

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Open Schooling benefits for schools



Connect with stakeholder organisations, policymakers and the community; Raise your school's profile

- Improving the (science) teaching and learning culture across the school
- Participating in a wider schools network, locally, nationally and internationally
- Increasing the profile of the school
- Embedding the school in the local community and professional networks

Open Schooling benefits for communities



Invest in the next generation; Nurture relationships which increase community sustainability

- Involving experts, professional and sector organisations to support the next generation
- Directly involve parents and the local community in student learning and development
- Model collaborative and community minded behaviours in solving relevant problems
- Passing intrinsic knowledge and skills within a community

Open Schooling benefits for communities



Invest in the next generation; Nurture relationships which increase community sustainability

- Involving experts, professional and sector organisations to support the next generation
- Directly involve parents and the local community in student learning and development
- Model collaborative and community minded behaviours in solving relevant problems
- Passing intrinsic knowledge and skills within a community

Open Schooling needs

Open Schooling can require slightly different skills and resources than more traditional teaching approaches, though it need not be more complicated.

Like all successful teaching, Open Schooling projects demand a combination of ambition, creativity and methodical planning. The needs on the next slides are specifically relevant to Open Schooling projects.

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Open Schooling need: community support

- Backing of the school leadership
- Parental support (and consent if needed)
- Access to local and subject interested communities and networks

Open Schooling need: tangible resources



Depending on the project:

- Funding
- Equipment or tools
- Materials
- Space

Μ

Open Schooling need: skills

- Communication and relationship building
- Collaboration and participatory processes
- Creative leadership
- Technical skills (depending on project)

Open Schooling need: attitudes and mindsets



- Openness to new things
- Resourcefulness and improvisation
- Determination and persistence
- Sensitivity to potential issues and willingness to listen

Μ



Helping local schools to solve local flooding problems through hands on activities and building solutions

Westcountry Women Working With Water (5W)

The Westcountry Women Working With Water (5W) project engaged primary school children in Somerset, rural England with the water cycle, flooding and sustainable drainage systems in their local area.

Location UK, Somerset Dates 2018 - 2019 Organisation University of the West of England, Bristol

150 students, parents and teaching staff worked together to build 2 rain gardens, learning about climate change and flooding along the way. Through these activities the children also learnt about engineering and how it can help solve local environmental problems. Female engineers led all the hands-on and outdoor activities to encourage girls to consider careers in STEM.

The rain gardens are now a permanent feature of the schools involved. These gardens continue to be used in children's citizen science initiatives to monitor rainfall and runoff data.



Visible female leadership created role models to encourage girls to consider STEM careers

The project worked in sync with its rural setting, drilling into local issues and concerns

The design of the project was strategic; the short term project involving the construction of the rain gardens created a permanent community learning resource



High school students in Jerusalem used a local playground as a vehicle to explore and understand physics, sharing their new learning with the local community.

Location Israel Dates 2021 Organisation Bloomfield Science Museum (Make it Open project)

Over the course of the project they met with design experts, visited a science museum and considered how to engage others in the discoveries they had made.

The students created a series of captions with information and ideas for activities. Working with the science museum and the local municipality, these were then attached permanently to the playground equipment, creating a permanent layer promoting STEM understanding.

An end of the project the learners became teachers, sharing what they had learned with pupils from a nearby elementary school.



The use of a familiar environment as the project context positions science and STEM firmly in the everyday of students lives

The opportunity to make a significant change to a shared public space makes the process of making change real and accessible

Peer learning and changing roles from learner to teacher encourages independence and agency

Assignment 3: your needs to start Open Schooling

In Make it Open, we aim to offer teachers tools that support them in starting with Open Schooling.

Knowing what you now know about Open Schooling, which sentence on the next slide fits your current ideas about your needs to start Open Schooling best? Finish the sentence in your own words.

You can choose more than 1 sentence. If none of the sentences feels right for you, you can formulate your own sentence.











Materials interview Part 3





Assignment 4: filters you need to find your match

If you would use the Navigator to look for a Learning Scenario or Learning Unit that fits your class, your students, your ideas, etc, which indicators would you prefer to use to find the most relevant inspiration?

Make a top 3 for the indicators on the next page: which ones are most relevant for you and why?

If you miss important indicators for your top 3, please add these.



Assignment 5: tools to support you start doing OS

Let's assume you found a Learning Scenario and/or a Learning Unit that inspires you.

We can imagine different thoughts you might have about the inspiration you found. And we can also imagine different tools the Navigator can offer you to support you in your next steps.

What are your ideas about these tools? Would you use these tools and why (not)? Are there other ways you can imagine the OSN can support you?

Which tools fit which thought and why?









