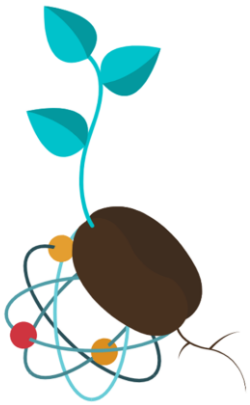
DELIVERABLE 2.1. GUIDELINES FOR IMPLEMENTING THE MAKEATHONS



SEEDS

VERSION V.4

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VERSION CONTROL SHEET

- **Project summary**

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ABBREVIATIONS

EC	European Commission
ECSA	European Citizen Science Association
EU	European Union
IISPV	Fundació Institut d'Investigació Sanitària Pere Virgili
SEEDS	Science Engagement to Empower Disadvantaged AdoleScents
STEM	Science, Technology, Engineering and Mathematics
SWAFS	Science With And For Society
UOE	University of Exeter

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EXECUTIVE SUMMARY

Science Engagement to Empower Disadvantaged AdoleScents (SEEDS) aims at fostering science interest, literacy and STEM (Science, Technology, Engineering and Mathematics) education, by raising the health understanding, also pursuing the empowerment of youth in an extreme citizen science based on the participation of leader' adolescents in all the research process: identifying adolescents barriers and necessities for having a healthy lifestyles, designing a community-based public intervention for adolescents of low-socioeconomic areas and with stakeholders participation, interpretation of the data and dissemination to community. These guidelines are intended to provide clear outlines of the various key stages of the Makeathon that will be standardised across all countries delivering the SEEDS Makeathons. They are presented here to support the delivery of Makeathons in other contexts.

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1. INTRODUCTION

Makeathons are creative, collaborative challenges in a short, predetermined amount of time that bring together makers from different backgrounds to reflect on and tackle a single cause together. The makers work in teams to freely create whatever they want from a preset theme or subject, which is revealed to participants at the last moment so that they have free rein to improvise. All disciplines can take part, and everyone can interpret the theme in their own way. Makeathons also have a responsible and ethical aspect. Participants come together to create an object or piece of work that is environmentally friendly, unique, and innovative.[1]

SEEDS uses citizen science to provide teenagers with a space to explore their creativity and scientific curiosity about their own lives, in turn creating an opportunity for teenagers to shape the change they want to see in their lifestyles. The Makeathons are one stage of the citizen science process in SEEDS, where their role is to empower teenagers and relevant stakeholders to create, develop and test interventions. This approach is directly implementing 'extreme citizen science',[2] whereby the teenagers are involved throughout the SEEDS methodology in defining their experimental questions and creating the interventions to explore these. The co-creation process is a fundamental part of this, and this requires an equitable methodology that addresses the challenges of authority and power that teenagers experience daily.

The interventions created during the Makeathons are led by teenagers and/or professionals and will run for four to six months in intervention schools with the aim of supporting teenagers to live a healthy lifestyle. The experiences gained through participation in a Makeathon are also intended to expose teenagers to many aspects of STEM, contributing towards an improvement in STEM literacy amongst this cohort. These guidelines aim to standardise the Makeathon processes and procedures to be implemented in participating intervention schools in Spain, Greece, the UK and the Netherlands. All partners in SEEDS have contributed to the development of these guidelines to ensure they are fit for purpose.

[1] Adapted from "Going the Distance with Makeathons—'Makers' Marathons' Explained" https://www.welcometothejungle.com/en/articles/en-going-the-distance-with-makeathons-makers-marathons-explained

[2] Haklay. 2013. Citizen Science and volunteered geographic information: Overview and typology of participation, *Crowdsourcing Geographic Knowledge*

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2. MAKEATHON ELEMENTS

2.1. Safety Disclaimer

The safety of all parties is the utmost priority during these events, and the following guidelines are intended to support rather than contravene the agreed local protocols to ensure the safety of minors. Where there is conflict between these guidelines and the agreed protocols with local teachers or guardians, the latter will always supersede the former. This document is also intended to be read in connection with Deliverable 6.2 to address data protection issues. Each school group should provide an appropriate number of teachers or other adults as guardians, with a designated teacher responsible for coordination and liaison with the SEEDS local team.

2.2. Risk Assessment

The local Makeathon team is responsible for carrying out a risk assessment in advance of the event in collaboration with teachers and other relevant authorities. This should be stored locally, read by all before the Makeathon and adhered to during the Makeathon. COVID protocols will be followed as applicable in the host countries context.

2.3. Makeathon Modes

These guidelines have been developed to cover various modes including in-person, hybrid and online-only. A draft timeline for pivoting to online events has been included. Adaptations for hybrid events have been highlighted throughout the document to indicate suggested areas for modification.

2.4. Role of SEEDS Project Partners

To ensure the Makeathon runs as smoothly as possible, SEEDS project partners should collectively identify a Makeathon coordinator, Makeathon project partners and Makeathon facilitators at a local level. The coordinator is the central point of contact for the event, managing the logistics, communications and delivery of the Makeathon. They will have oversight of the whole event and should delegate specific tasks to the project partners. They are also responsible for ensuring the risk assessment is adhered to and is up to date. The project partners support the overall event, including preparing the venue, coordinating people and problem solving in situ.

The facilitators' main role is to support the teenagers and stakeholders in the Makeathon process, sharing their expertise and encouraging the teams to critically explore their proposed interventions. The facilitators should not try to influence or shape the intervention(s) but should instead act as mentors to challenge and discuss ideas with the teams. Facilitators and stakeholders need to balance the weight of 'real-life' against the teenagers' ability to innovate and

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create, so they should provide relevant examples or facts but should not temper the energy, enthusiasm or creativity of the teenagers.

Hybrid Makeathon Modifications

- There should be a coordinator at every school. They have the same tasks as those described for "normal" coordinators and additionally will be responsible for the technical organization with livestreams etc.
- Facilitators have the same tasks. Contact with students will be via the Teams meeting, but they will also use the chat-option a lot to type students' ideas as the facilitators were not able to read their post-its. Facilitators on their turn wrote some key-points or summaries in the chats. This is also very useful to look back at after the Makeathon.
- Chairperson can run the overall event, and if possible it is very helpful if they are able to travel between sites to connect the sites together.

2.5. Location

The Makeathon coordinator, project partners and facilitators should visit the venue in advance of the event to assess its accessibility and suitability. The venue should be big enough to give each team sufficient space to discuss their ideas away from the other teams, as well as providing space for testing different interventions. Space to bring the entire group together for stages 3.2-3.4 and 3.8 will also be important so that the Makeathon team can address the whole group together. Presentation screens and/or access to computers for presenting should be considered, as well as how visible this information is for the group. If screens are not available, alternatives such as presenting without slides can be prepared for. The venue should also have accessible toilets for all. Local and national rules relating to e.g., COVID-19 protocols and social distancing should be considered and implemented accordingly.

Hybrid Makeathon Modifications

- When in partial lockdown, it is not always possible to visit the location beforehand. If possible, arrive early to arrange all technical stuff and getting help from a teacher or IT-person would be very helpful.
- Where possible, start and end in one overall online meeting with all schools, coordinators, partners, facilitators and stakeholders.
- When in smaller groups, each team should be assigned to an individual Teams meeting to connect with the facilitator and stakeholder. Therefore, 1 laptop per team is needed.

2.6. Makeathon Teams

Teams should consist of groups of up to 5 teenagers, with support from stakeholders. Ideally the teams should be randomised, but this should be decided in consultation with the teachers and with consideration for gender distribution. The average ratio of teenagers to stakeholders should

be 15:2, to ensure that the teenagers voices, experiences, and opinions are not dominated by the stakeholders. Stakeholders should also receive a copy of the Stakeholder Guidelines in advance of participation, to inform them of the Makeathons background, their role, and their expected behaviour during the Makeathons (Annex 1). During the Makeathon event, the SEEDS project and the role and expected behaviour of adolescents will be explained. One facilitator per group should be assigned, and their role is to advocate for the teenagers and to ensure all voices are heard, as well as supporting the team through the Makeathon process.

Hybrid Makeathon Modifications

Assign 1 stakeholder to each team (4-6 students), but the facilitator should make sure they do not overrule the students.

2.7. Resources

Large sheets of paper and pens/markers are important to enable teams to sketch out ideas. Each team should have a large table with chairs for all participants, and suitable space between the tables is necessary to reduce the influence of teams on other teams. Each team member should have their own pack of post-it notes and a pen. Access to the internet would be helpful for teams to fact check or research topics. Each team should have a page with the question they are addressing and a page with the barriers that should be tackled to address these questions (both shaped in the focus groups) on their table. Voting boxes should be prepared for evaluation after the Makeathon and every participant should be given two tokens to vote with (See Annex 3 and 4). The participant resources should be gathered into a pack for them to take away at the end after they have voted.

Hybrid Makeathon Modifications

- Ideally each team should have a laptop with a camera
- Develop a technique for the livestream and clarify this in advance with the relevant teachers and IT teams in the schools to ensure it is appropriate
- If multiple schools are participating, extra voting boxes are necessary

2.8. Timing

The Makeathon process should last 2.5 hours (under COVID conditions where the event runs online) or can be extended to half a day if it is possible to run this in person. This length of time has been chosen to balance the time needed for creativity and the demands on classes and stakeholders' time, as well as challenges in accounting for the potential that an event might have to run entirely online. The sections in the timeline that can be extended are highlighted below. Extras can be delivered in addition to this – see section 2.9 below. Breaks/lunchtime should also be planned in to give participants time to relax and reflect. Depending on the number of

participants, partners may wish to consider staggering arrival and departure times of schools to facilitate easier coordination.

Hybrid Makeathon Modifications

Hybrid events are energy intensive, so 4 hours would be the suggested maximum limit.

2.9. Stakeholders

Stakeholders can participate in most stages of the Makeathons (see notes about the Ideate phase) cooperatively with the teenagers, but should first read the guidelines in Annex 1 and should ensure they do not dominate or overwhelm the teenagers expertise or ideas.

2.10. Extras

Partners may wish to extend the day with extra activities/tours/talks and should consider the relevant resources and timings for this around the Makeathon.

2.11. Language

Language used during the Makeathons should be carefully considered. Our participants are experts and we need to treat them accordingly. We are asking them to help us, so it is important to work from a place of mutual respect. This should be considered when developing material for talks and presentations for the Makeathon.

2.12. Photos

Partners are encouraged to take photos (with permission) following the agreed protocol in Deliverable 6.2.

2.13. Makeathon Report

Partners should record information about the Makeathons, particularly in the Ideate, Pitch and Post-Makeathon phases in the Makeathon evaluation report provided for them. Partners should ensure all information is non-identifiable and can be codified according to the Makeathon Event and to the Country.

2.14. Equitable Participation

Working with teenagers or people who are not familiar with formal authorities means trust-building is essential for the Makeathon process to be successful. Equitable citizen science relies on equitable participation. In addition to the considerations for language discussed in section 2.10 above, it is therefore crucial that the whole Makeathon team creates an environment where the

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power between the teenagers and stakeholders, and indeed between the teenagers and the Makeathon team, is distributed equally and shared between all parties. Traditional relationships with authority may create situations where Makeathon participants do not trust the Makeathon organisers or stakeholders. This should be addressed by clear communication, treating everyone with mutual respect and sharing power at all possible stages.

2.15. Makeathon Modes

These guidelines have been developed to cover various modes including in-person, hybrid and online-only. Timings for online only and in-person events have been outlined. Adaptations for hybrid events have been highlighted in particular sections to indicates suggested areas of modification.

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3. MAKEATHON STRUCTURE

The Makeathon structure outlined below was developed based initially on the protocol described by Soares, Silva and Silva[3], which originates from Design Thinking. This protocol has subsequently been modified to target it to our project. Stage 3.1 is mainly organiser-focused, preparing the location and the documentation for the event. Stages 3.2-3.3 involve speaking to the full groups of teenagers and stakeholders. Stage 3.4 involves separating the teenagers into their groups, with a separate group for the stakeholders for the majority of this stage (*). Stages 3.5-3.6 is where the teenagers and the stakeholder teams will prototype their ideas. Stage 3.7 will involve all teams reuniting together at the end to pitch and discuss their interventions with the larger group. Stage 3.8 involves the partners reflecting on the event.

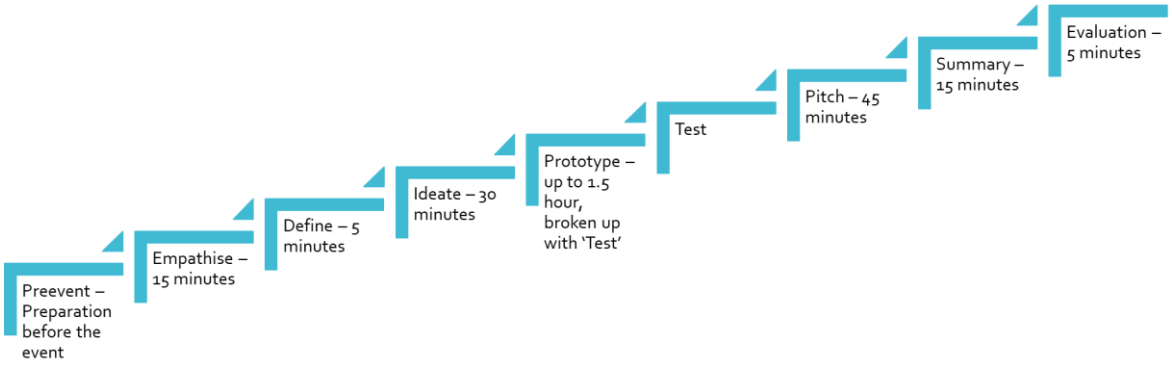

Figure 1. Outline of an in person Makeathon event. Time is not included here for breaks but these are essential and should be planned in by the Makeathon organisers.

The output from the Makeathons will be discussed and considered collectively by teenagers, stakeholders, and the SEEDS Consortium to identify which interventions will be implemented in each country. The draft timeline aims to deliver the Makeathon within 2.5 hours to account for the potential the event runs entirely online. However, it is recognised that e.g. breaking teams up into groups or moving people around takes time. It is therefore suggested to prepare as much as possible in advance to reduce time lost in moving people or distributing resources or preparing the space. Sections where it will be possible to extend the Makeathon for events that will run in person are clearly highlighted.

[3] "Make-a-thon: A blueprint for SDG-driven innovation" Soares, Silva and Silva, ISPIM 2020

(*) This is an important point to address, as in the first SEEDS Makeathon in 2021, it was identified that many teenagers felt intimidated by the stakeholders. By providing the stakeholders with a separate space for the majority of the ideate phase, you create an environment where teenagers feel more comfortable making suggestions and thinking outside the box. By providing the stakeholders with space to generate their own ideas, you also demonstrate that you value their perspectives.

3.1. Pre-event

The risk assessment and safety should be checked and updated if necessary. A walkthrough the venue should be carried out and resources prepared. All SEEDS partners and facilitators should be briefed to ensure they are aware of the risk assessment and venue lay out.

3.2. Empathise (15 minutes)

The coordinator should introduce the SEEDS project, highlighting the scientific motivations behind the project. It is important to keep this concise and to focus on the key information participants require including general information about the venue (toilets, etc.), explaining what a Makeathon is and what the SEEDs project is. This should explain the timeline, progress made and next steps of the SEEDS project. It is also helpful to highlight to the participants that they are the experts here and we require their help. A common presentation will be provided for use by partners.

3.3. Define (5 minutes)

The questions of the Makeathon are presented here (below), and each team will address one question during the Makeathon. This will directly lead on from the work in focus groups to define the question. There will be two questions shared across all four countries (Q1 + Q2), and there is an optional third question that can be used (Q3 below). The question should not be leading or biased towards a preset intervention. It should also not make the participants feels intimidated or like they are unqualified for creating an intervention, so clear language should be used.

Q1. What experiment would you create to improve snacking and drinking in your school?

Q2. What experiment would you create to be more physically active and sit less during the school day?

Q3. What experiment would you create to …?

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3.4. Ideate (15 minutes online, 30 minutes in person)

Before starting the activity, team members should introduce themselves. Each team will have one facilitator to support them. The aim here is for the teams to generate a large number of ideas followed by discussions to identify the best and most feasible ideas. The group of ideation exercises used in previous Makeathons may be useful here, but given the time constraints, it might be necessary to skip the 'Build on Top' section. However, partners can choose whatever they prefer. At the end of the Ideate Phase, partners must take a photo of the large sheet with all the ideas as the participants have clustered them. In cases where team members do not generate many ideas, the facilitator can lead a short open discussion to stimulate conversation and idea generation before repeating another round of silent brainstorming.

Stakeholders should be given one of the questions and encouraged to explore this through the same process as the teenagers. However, to minimise the intimidation factors, it is better to gather the stakeholders together for the silent brainstorming phase, and then ask them to join the table with the teenagers exploring the same question as them for the last few minutes of the ideate session. This provides all parties with the space to create ideas without one party dominating another's ideas, as this runs counter to the very concept of extreme citizen science.

Silent Brainstorming

What?

Silent Brainstorming is a useful technique for generating many different ideas and solutions to a problem without distractions or influence from other members of the group.

Why is it helpful?

It is often challenging to put a group of individuals in a room and expect equal, creative participation from them all. There will often be passive individuals who may not contribute as much as those who naturally like to take the lead. This can result in certain ideas dominating and limits the other possible solutions that team members might have. Silent brainstorming can help avoid some of these potential problems and maximise contributions from team members.

How to:

1. Team members should write down the question in the centre of a large piece of paper, leaving space around the outside to place post its. Leave it visible in the centre of the table. Ensure the question is formatted in such a way that it suggests that are multiple different answers, not just one correct answer.

2. Outline the rules of engagement for silent brainstorming.

a. All ideas count. We never know what ideas might trigger further conversation or idea generation.

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b. All ideas are considered equally – there should be no judgement or fear of criticism.

c. No talking during this stage

3. Every team member should get their own pile of post-it notes and a pen. Each team member should (in silence) write down as many different ideas for interventions they can within 5 minutes – one idea per post it

4. Everyone should place their post-its around the question on the large piece of paper in the centre.

5. The team should discuss the ideas and group them into themes.

Cluster and select

Team members can sort through the ideas to cluster ones that are related and then to identify which ones have potential. The aim here is to whittle the list down to provide a few key seed ideas for the prototype and test phases.

Build on Top

Team members should each take a random post-it, consider the idea and then add to it. A technique frequently used is the 'Yes, and' method, where people are expected to build on the idea by adding something after the 'and'. As an example, consider a theoretical Makeathon where people are designing new tools for online meetings. Someone might suggest an online networking platform to accompany the meeting on a post-it, and when another person gets the post-it, they might say 'Yes, and we could have a set time during the meeting for everyone to network in the platform.' This activity supports co-creation of ideas and helps quickly identify opportunities and limitations.

Hybrid Makeathon Modifications

- Send the facilitators the question the day before by e-mail. They should put the question in the chat for the stakeholders. Teenagers should have the question on paper in front of them.
- Teenagers should present their ideas first, afterwards the stakeholders can speak out or write ideas in the chat.

3.5. Prototype (1 hour online/1 hour 30 minutes in person (including Testing))

The team should next turn their attention to developing their ideas for application as interventions. This happens in the prototyping and testing phases, which run together iteratively.

The team should take one of the seed ideas and create a prototype by imagining how they would implement the idea as an intervention. This will involve discussions with stakeholders, considering how their classmates will feel about the idea, identifying opportunities and limitations, exploring

whether the intervention should evolve as the intervention period progresses or whether it should stay the same etc. There are four core questions that the teams should address that they will need to present later at the pitch stage:

- **What** is the intervention?
- **Who** is involved?
- **Where** should this intervention take place?
- **How** will it have an impact?

Throughout the Makeathon, the facilitator should remain with their team to support them whilst the partners should wander amongst the various groups to offer support as necessary. If the team are struggling, facilitators could use the following questions as prompts (as opposed to sharing previous interventions as this would bias the outcomes from these Makeathons) to help the team explore the idea further:

- **Who** does it affect, **Who** is involved, **Who** needs to help, **Who** else might be interested?
- **How** will the intervention happen, **How** will it be measured, **How** should it evolve throughout the intervention period, **How** will it initiate change?
- **What** do you need, **What** support would help, **What** opportunities and problems have you identified? **What** do you like/dislike about physical activity? **What** do you dislike/like about the snacks available to you? **What** opportunities do you see for more movement in your day?
- **Where** should the intervention happen?

3.6. Test (1 hour online/1 hour 30 minutes in person (including Prototyping))

Prototypes should be tested in a practical way where possible. This could include, for example, practising a physical activity prototyped above, testing out the space requirements necessary/time length of the proposed activity/how it feels to perform this activity etc. For prototypes that cannot be tested in a practical way, a thought experiment can be performed. This will enable teams to see their work in action and cycle through stages of design optimisation and adaptation to ensure their activity is fit for purpose. The testing stage should be carried out as true to life as possible, so the teams should follow the intervention in a way that is as true to their daily routine as possible. The testing phase might identify certain prototypes that are not feasible as interventions, so at this point the team should loop back to develop a different prototype using one of the other seed ideas.

Hybrid Makeathon Modifications

In the hybrid variant, when only the chairperson and coordinator are present at the schools, they should make sure to encourage the students to test out the ideas. They are the only test persons available in the room (besides the students themselves), so they should take a bit more responsibility in encouraging or recommending the students that they can help out if they need

to. When facilitators and stakeholders are present, like in the "normal" Makeathon, they will be the test persons or they will make sure the idea will get tested. But as this interacting is a bit harder online, the chairperson and coordinator should have this on their radar.

3.7. Pitch (30 minutes online, 45 minutes in person)

All teams should return together and each team should share their idea in a pitch. In traditional Makeathons the pitch is often quite a formal process, but a more informal process may make participants feel more comfortable. One member from every team should present their idea addressing the four core questions from the prototype phase. One partner should write down the intervention idea on a large paper in front of the room.

After each pitch, the partner should lead a short Q&A session. First, questions can be asked for clarification. When the idea is clear to all participants, the group will be will split in half to identify pros and cons. This will support the group to collectively identify the Makeathon interventions that they feel are the strongest. It is important that stakeholders are equally distributed among the two groups. Group members of the presenting team that did not do the pitch can also join this session, but they should be equally divided among the pros and cons group.

The partner gives the two groups the task to think of pros and cons. Ambassadors and students can raise their hands to give arguments why they believe that the idea might work or might not work. When ambassadors have given their input, it is time for stakeholders to also contribute to the discussion. Do they see other pros and cons? To help partners and ambassadors select best ideas, it is suggested that one facilitator write down the key discussion points on the large paper in front of the room. This will ensure the final decision about interventions includes the maximum input from the teenagers and stakeholders.

When all arguments are listed, it's time for the next group to come to the stage and pitch their idea. There is no fixed time that this phase will take, but we think that most pitches, pros and cons will take 5 to 15 minutes.

The partner should remind everyone to be respectful about other ideas. Feedback and constructive criticism are welcomed, but it is encouraged to frame the latter in the idea of 'We could build on your pitch by …'. This framing ensures the teams feel supported in their creation of starting points to develop a potential intervention.

Following the pros and cons sessions, the partners should explore solutions with the teams. This is an important part of the pitch stage to help the teams understand the possibilities of the intervention. The teams may be limiting themselves to what they think is possible rather than a full awareness of the breadth of what might be within the scope of the intervention. Stakeholders and partners should therefore use this opportunity to share potential ways to address the limitations or the cons that they have identified.

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Hybrid Makeathon Modifications

A separate portable microphone is useful to ensure people can be properly heard during the pitch phase, as a shared microphone makes it very difficult for participants to hear each other.

3.8. Summary (in person only – 15 minutes)

After the last pitch has been held, there will be some time to reflect on the ideas, the pros and the cons. Are their ideas that everyone believes should be implemented? The input collected at the large paper, together with the recording of the discussion by a facilitator that is not part of the session, will be the basis for further developing the intervention in a next meeting with the ambassadors.

Hybrid Makeathon Modifications

The chairperson can give an overall summary of all ideas (from both schools) and again give another summary after all pitches/pros and cons were done. The local coordinators in the schools can then focus on the students in their school to thank them, explain the voting, next steps, etc. If there is no chairperson who has attended both schools, then it would be a good option that the coordinators share the summaries of the ideas and the overall day within their school during the livestream, and the other will do it as well. The final summary parts should be carried out by the coordinator in each school.

3.9. Evaluation Vote

Each participant (teenagers and stakeholders) should use one token to vote for each evaluation question as they exit the Makeathon space. If possible, a space for each participant to vote privately should be provided (e.g. letting them vote one at a time) to demonstrate the best practice of voting and ensure they are not biased by their fellow participants. The evaluation questions used in the Makeathon are presented in Annex 5.

3.10. Post-Event

The coordinator, partners and facilitators should gather to share their reflections on the Makeathon process and to count and record the votes. These should be recorded in the Makeathon report to ensure we build a true picture of the Makeathon process. Useful quotes from participants and observations (positive, negative and other) should also be included in this discussion and recording. All pitches and notes should be anonymised and shared via the SEEDS shared folder online. This will be extremely helpful for future Makeathons, as well as a powerful way for the SEEDS team to reflect and report on the efficacy of the Makeathon itself.

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Partners should work with their ambassadors to identify the optimal interventions, and these should then be communicated back to the intervention schools appropriately e.g. via working with the ambassador and perhaps by creating a 'how-to' for intervention participants.

When each country has a draft design of the intervention for their country considering the intervention template created by IISPV, a virtual meeting with all ambassadors to share the intervention created and their experience with the Makeathons will be carried out. In this meeting the ambassadors of each country, and also the partners/researchers, can participate in defining the final intervention of each country.

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4. ANNEXES

Annex 1 – Guidelines for Stakeholders

What is a Makeathon?

Makeathons are creative, collaborative challenges in a short, predetermined amount of time that bring together makers from different backgrounds to reflect on and tackle a single cause together. The makers work in teams freely to create whatever it wants from a preset theme or subject, which is revealed to participants at the last moment, so that they have free rein to improvise. All disciplines can take part, and everyone can interpret the theme in their own way. Makeathons also have a responsible and ethical aspect. Participants come together to create an object or piece of work that is environmentally friendly, unique, and innovative.

The role of Makeathons in SEEDS is to empower teenagers and relevant stakeholders to create, develop and test interventions. These interventions are teenager-led and will run for six months in intervention schools with the aim of supporting teenagers to live a healthy lifestyle. The experiences gained through participation in a Makeathon are also intended to expose teenagers to many aspects of STEM, contributing towards an improvement in STEM literacy amongst this cohort. These guidelines aim to standardise the Makeathon processes and procedures to be implemented in participating intervention schools in Spain, Greece, the UK and the Netherlands. All partners in SEEDS have contributed to the development of these guidelines to ensure they are fit for purpose.

What is your role during a Makeathon?

Your role is to share your expertise and your knowledge with the teenagers to support them in developing their interventions. It is critical to note that your role is not to dominate the process nor is it to limit the creativity of teenagers.

It is important to establish a good relationship with the teenagers and to remember that their contributions should be treated with respect and equal consideration. They will be responsible for carrying out the interventions over the next six months in their schools, so it is critical that they are connected to and engaged with the Makeathon process. Rather than dismiss their questions or ideas, explore the logic behind their ideas and share the process behind your thinking.

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Annex 2 – List of Makeathon Resources

For the Venue

Common Roll Up

10 x Voting Boxes, covered to ensure the tokens inside are not visible. Before starting the Makeathon, a preset number of tokens of the same colour should be set inside each box, and this should be recorded and subtracted from the final box numbers. This will ensure participants are less influenced by the sound of fewer tokens in one box.

Sellotape, blutac and scissors

For every Table

Large A0 sheets – 1 per Makeathon group, with one question taped into the centre of the sheet

A3 sheet for summary of Pros and Cons (to be shared with the other groups to use in the Pros and Cons discussion)

A3 sheet of barriers

For every Participant

SEEDS Bag with SEEDS design logo containing:

1 x Pack Post it notes

1 x Pen

2 x tokens (different colours for teenagers and stakeholders)

Additional memorabilia from your local institution if desired

1 x Flyer to explain the SEEDS project

For stakeholders only: 1 x guidelines of expected behaviour (from annex of Makeathon Guidelines)

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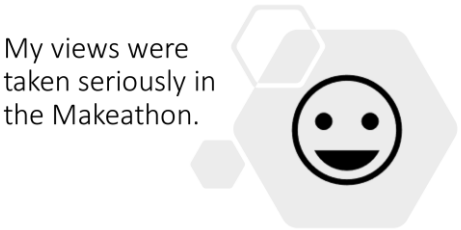
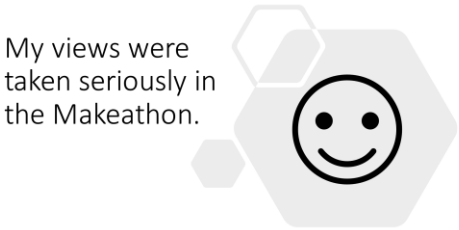
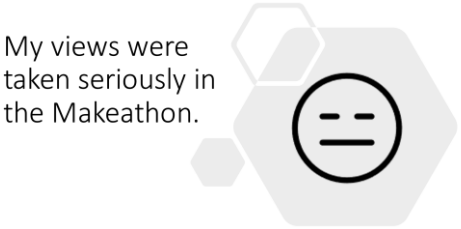
Annex 3 – Evaluation Resources

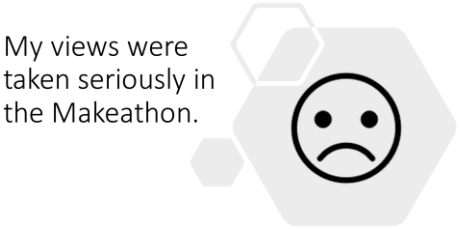
Each set of images for Q1 and Q2 should be printed to A4 size and placed on sealed boxes for voting.

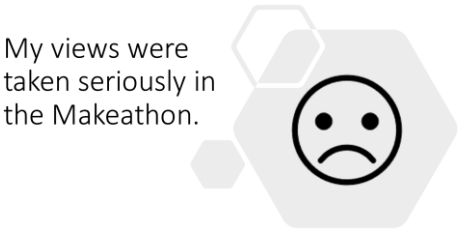
Q1. My views were taken seriously in the Makeathon



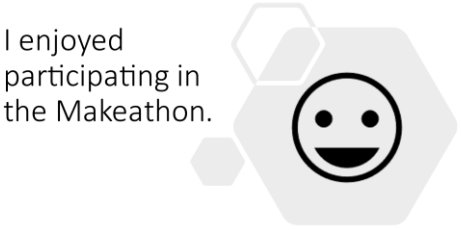


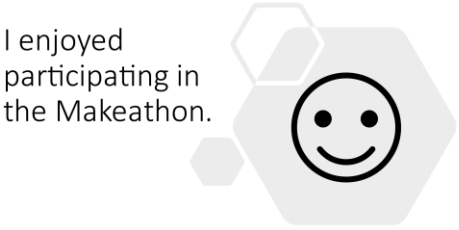






Q.2 I enjoyed participating in the Makeathon





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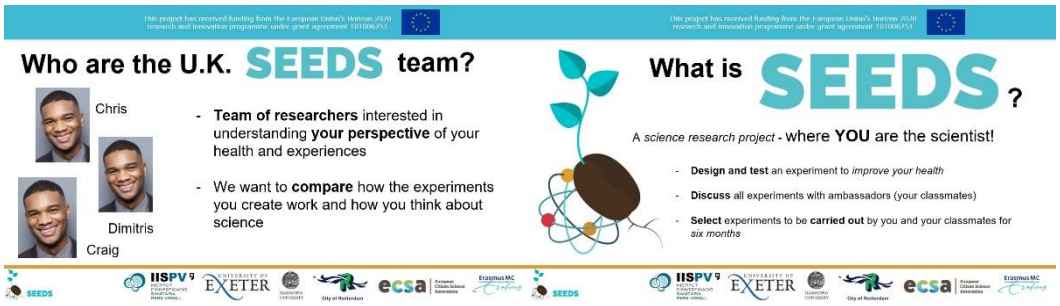
I enjoyed participating in the Makeathon.

I enjoyed participating in the Makeathon.

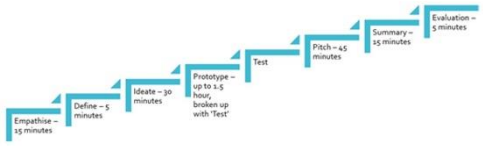
I enjoyed participating in the Makeathon.

Annex 4 – Common Introduction

The slides below were shared with all partners in advance to enable them to modify them to their local language and local context.



What are the stages of the Makeathons?



SEEDS stages #1:

Empathise
This helps you understand the science and how the project works.

Define
We will share the questions we want you to answer with your expertise in small teams.

Ideate
Discuss the question with your team to help you understand it and to explore the different ideas you have

SEEDS stages #2:

Prototype and Test
Take the ideas from the 'Ideate' stage and create a draft of the experiment. This could be a thought experiment. Then test it out in your groups.

Pitch
Share your ideas with the group and work out which ideas from the groups are the best.

Evaluate
Use your marble to vote in our two questions. We want to know what you thought about the Makeathon process!

Important Points to Consider

- **Prototypes Matter**: Make/debate them quickly to learn and make better models in the next round of design. Knowing what works is just as important as what doesn't work.
- **Skills Matter**: Your voice matters. You have skills and expertise that we need in this project.
- **Interests Matter**: This intervention will be run for six months. Make sure it is fun to do for you and your classmates to do.
- **Stakeholders Matter:** They are here to help on an equal level - ask them for help but they should not dominate the discussion.

What happens next?

Your **experiments are considered** by the ambassadors with us, including the pros and cons you have created for the experiments.

The **ambassadors will pick** the best experiments to work together

We will **share this information** with you

You will **run the experiments** for six months!

We will **talk with you** about your experience

We will **share your ideas and perspectives** around the world

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Annex 5 – Evaluation Forms for Makeathon

Overall General Information

EVALUATION MAKEATHON	
Country	
Date	
Nº Makeathon	
Nª participants	
Nª ambassadors	
Nª adolescents	
Nª stakeholders	
Nª facilitators	
Nª other personel involved	
Duration of the Makeathon	
Stakeholders reaction of two final questions (total smile face green/orange/red)	
Question 1: enjoyment	
Question 2: co-creation	
Adolescents reaction of two final questions (total smile face green/orange/red)	
Question 1: enjoyment	
Question 2: co-creation	

Evaluation for each Pitch

Pitch 1: *(title idea suggested)*

What?

Who?

Where?

How?

Ambassadors		**Stakeholders**	
Pros	Cons	Pros	Cons

Evaluation for Partners

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General evaluation	
Experience (or feelings) partners	
What is your overall experience?	
What went well?	
What difficulties did you encounter?	
What should be improved for next makeathons?	
Important things to be highlighted:	
Investigative perspective (Methodology of Makeathon)	
Practical perspective (Organization of the Makeathon: location,resources, nº participants, etc.)	

Add other sections that you think are important	

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Annex 6 – Roll up Banner for the Event