

Hackathon – waking up passion & creativity

Polish Space Agency activity

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Acknowledgment

This material was created for teachers, educators and everyone that wants to help students find their own strengths and talents and grow into STEM.

It summarizes two hackathons organized by US Embassy in Warsaw, features tips based on lessons learned and other activities by POLSA.

The purpose of this material is to share an idea, not to provide the 'one and only' rule or any kind of instructions. While organizing hackathons one does not have to follow the described phases step by step. Instead choosing what fits the best and combining the presented methods with own experience is the best solution.

The history

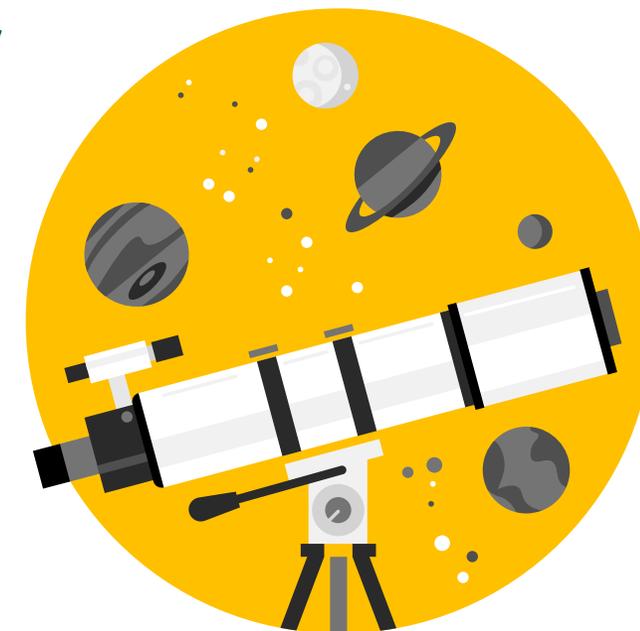
- ✓ In 2021 & 2022 Polish Space Agency was invited to co-organize a hackathon for students. The main organizer was U.S. Embassy in Poland, and executing partner was European Space Foundation.
- ✓ In 2021 the hackathon was organized on-line due to Covid-19 restrictions. Students had only 3 hours to work with mentors on their own ideas. In 2022 it was held on-site. Students worked from Friday till Sunday afternoon.
- ✓ It wasn't an ordinary hackathon, since no app was to be created. Students were asked to design Mars colony.

Why Mars colony?

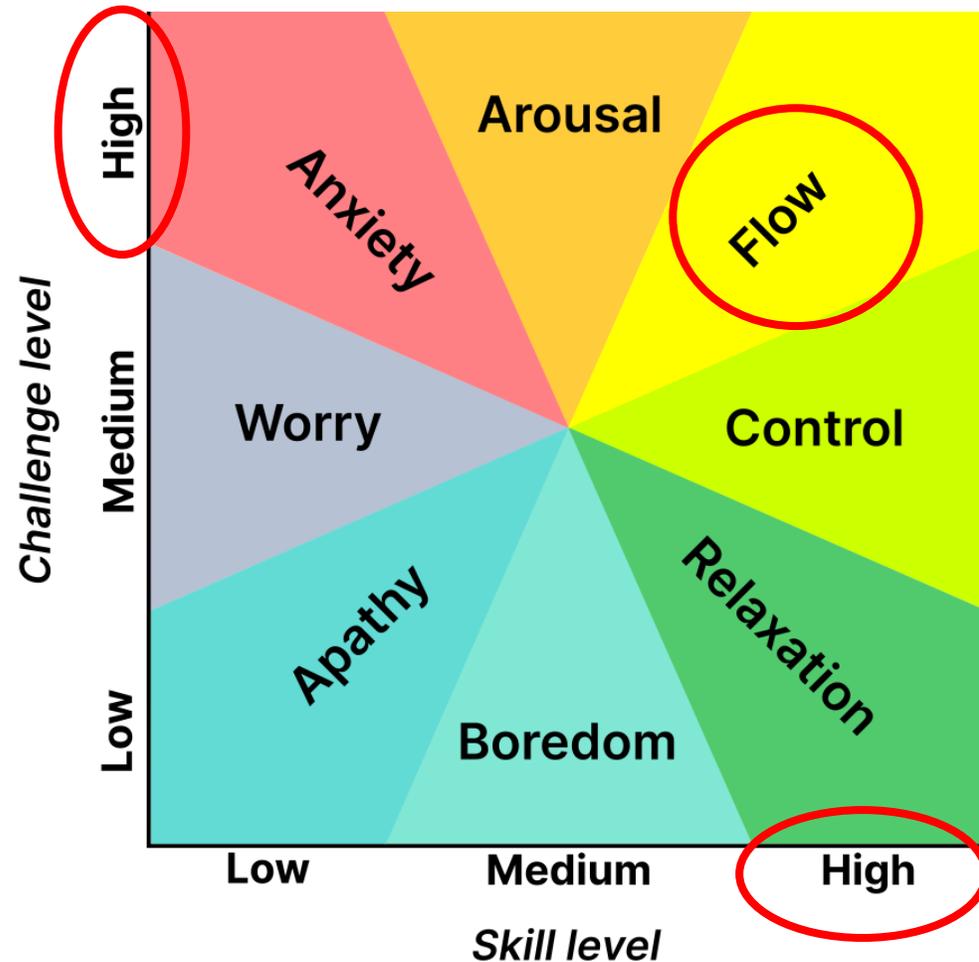
There are a few reasons:

- ✓ nobody knows what is the best way to do it, there are many research and R&D projects trying to figure out what humans should do and could do on Mars;
- ✓ it's a very ambitious goal, but the kind of one where students can use their own knowledge and experience – this ensures the flow of work and curiosity;
- ✓ it's a very interdisciplinary idea – many experts must cooperate to find the best solution. By combining STEM and not STEM matters students are inspired to think and work more broadly.

Our tip: It can be Moon Village as well, especially since it's highly promoted by European Space Agency.



What is flow & why it's important?



It's interesting! Flow is a term explained by Hungarian-American psychologist **Mihaly Csikszentmihalyi**. It explains why we feel engaged in some activities. We experience flow when we are highly challenged, but we also can use our skills to perform the task.

This concept is used in games and in the gamification process.

Understanding flow helps leaders to better manage their teams.

The idea

Both hackathons used a combined idea of:

- traditional hackathons, where the result is an application & teams use data delivered by sponsors/organizers,
- Reversed Science Cafe where scientists engage non-science & often not-from-the-field people to find an answer or solution to some challenge,
- Design Thinking tools and prototyping approach.



On-line hackathon

- Was held on zoom from 4pm-7pm;
- Students could apply through an on-line form;
- The event was promoted by US Embassy and Polish Space Agency, as well as mentors;
- Each team was working on different aspect of a colony like architecture, design of every-day use tool, consitution, national identity, localization.
- Each team had a mentor – an expert in the field with a passion for space exploration.
- At the end all teams presented their vision.



The teams

- Each team had a dedicated mentor-a professional working in the field, most of them were scientists with experience in working with the target group, but that is not a must;
- Teams worked on:
 - The right place for the colony with planetary geologist Anna Łosiak, PhD;
 - Architecture of a habitat with analog mission facility designer and CEO, architect Leszek Orzechowski;
 - Constitution for the colony with academic lawyer focused on space law prof. Malgorzata Polkowska;
 - Culture and local identity of the colony with entrepreneur and trainer Filip Debowski;
 - Domestic design of something that will help to soften the feeling of missing the Earth with a designer and 3D printing specialist Prof. Marta Flisykowska.

How to find a mentor?

It's easier than you think!

- Engage with American corner or US Embassy in your country;
- Engage with your national space agency, ESA BIC or ESERO;
- Engage with ESA;
- Check if there is any professional association or space cluster in your region;
- Engage with students' team working on rockets, satellites or rovers – you can find them by checking the websites of International competitions like European Rover Challenge.



What else to think about?

Sponsors

US Embassy in Poland was kind enough to take all budgetary burden on themselves. However, you might need to look for a sponsor. Where to find one, how to approach one?

- Check out space companies – participating as a sponsor is a part of their employer branding strategy (or should be);
- You may also check the same organizations where you look for mentors – they may become co-organizers or sponsors;
- Check if there are any national grants for promoting science, STEM or space activities;
- Think about barter agreement with catering-providers, etc.

Venue

- Hackathons are often prepared in creative space, co-works, etc. but truly it's about the team spirit and... room to work, sleep, eat, or have a creative break. Usually, people want to stay as long as possible to work on their ideas, but also want other teams not to interrupt or see their ideas.
- Think about some large space that can be divided into a few smaller ones. Even a rent apartment might be good.



Communication

- The trickiest part because everyone think it is easy.
- First of all, invitation – be as specific as possible on who you are looking for, how to apply, what you cover, and what is expected from people and from the event.
- When communicating about application deadline add info about the exact time of closing the process.
- Selection may take longer than expected – communicate with applicants. Nothing is worse than bad impression caused by lack of information.
- Preparation: be clear how people should be prepared – is there any recommend reading? Should participants bring their own computers, note pads, snacks, etc.? Would you like to invite participants to share their talents during creative breaks? Let them know about that.
- It's always better to share a draft agenda then share nothing.



Hackathon 2022 fotos

Communication

- It's helpful to send reminders a few days before the event (7 days before, 3 days before, a day before). It also may be good to create a group to communicate with mentors and a separate one with teams – WhatsApp, Discord, GitHub or any other app is very helpful. However, remember about respecting the privacy of participants – create a group where people can join via link, and share the link with all engaged parties.
- Communicate during the event – remember that official speeches should be as short as possible – dividing speaking slots through all days and all sponsors may be helpful.
- If you decide to have the Hackathon last a few days, it is good to start the day with some organizational meeting or short stretching/meditation session for everyone.
- It is good to have closing as well, but teams often still work afterwards. Therefore, it may be simply something to gather people – talent session, short game (so people don't sit all day long, it helps to keep them creative), or Dixit/puns session.

Jury and judges

- You should be clear who will assess the work – it might be an expert, mentors or all audience – nevertheless you should prepare scoring sheet and introduce them to the teams. It should be clear from the beginning how the ideas are validated – what will be taken into consideration (e.g., presentation, speech, teamwork, argumentation of the solution).
- Be sure you plan the time for counting points and some discussion among the jury.
- Be sure you plan the time for jury to explain their judgment and decisions. Let them provide feedback to teams.
- Be sure jury and judges know your ideas about the evaluation process, what is expected from them, when they will have time for discussion, how you want to run it – communicate!
- After the Hackathon you may want to organize a meeting with all involved parties to share the experience and build engagement for the future.
- If you asked participants about their expectations before the event, be sure you know if you met them.

Don't forget

- Power outlets – people will bring computers, phones, tablets – you don't want them not to be working because they were looking for power sources.
- Wi-Fi – no event can be hold without it.
- Communication – again, it's not that easy – plan your time to do it right.
- Be sure you have people who can handle questions.
- Be sure your team and mentors communicate in languages you expect for the Hackathon.
- Know why people are joining – what is their "why," what they want to accomplish – once you know it you may be able to fulfil their needs, help them and it's a reward on its own. Plus, you want them to be satisfied and speak well of your efforts.
- Promotion – and also how you want participants to promote the Hackathon and the general idea.
- Building a team spirit – people come to hackathons for networking as well – help them do that. Also, communication is a key skill that many are lacking – help them develop it.

More on Mars Colony Hackathons

- [Hackathon 2022](#) and also [here](#)
- [Hackathon 2021](#)

Interesting readings

- [The Hackathon handbook.](#)
- [Survival guide for your first Hackathon.](#)