ASTRO PI
MISSION SPACE LAB

Outline for your first 90-minute online Astro Pi session

This session template provides guidance on how to run your sessions online if you cannot meet with your team in person, such as during a lockdown caused by COVID-19.

Important Note: You should have already been sent your Astro Pi kit, and need to have assembled this prior to your first online session.

During your sessions, you need to be your team's 'hands', as they do not have access to the required equipment.

You should organise a video conferencing call for team sessions, so you can run your team's code on the Astro Pi hardware kit and the young people can see what's happening on the LED matrix. Please use the online video conferencing tool advised by your education ministry or your school.

In advance of the session, you might want to register accounts for Repl.it classroom or GitHub, which will allow you and your team to write code together online. If your team members are under the age of 13, their parents need to register an account for them. Your team can then collaboratively edit and make adjustments to their code after seeing the Astro Pi in action.

During this session, you will need to:

- Carry out any manual adjustments of the kit
- Undertake physical testing requested by your team
- Manage installation and run any code created by your team
- Report any errors and testing results to your team for further analysis and corrections

Before the first session, ensure that all attendees know:
- They have made it through to Phase 2 of the Astro Pi project
- About any software they need to download and set up
- About any important rules or guidelines for joining the session

Time	Activity	Description	Sample activities
Start your session			
5–10 mins	Set up time	Allow young people time to join the call and get set up.	Discuss the rules and expectations for how to work during the session, and the mechanisms to get help and ask questions.

			Encourage everyone to practise using the tool controls, for example: mute, chat, and raise hand.
5 mins	Recap and congratulations!	Congratulate your team — you made it through to Phase 2! Remind the team of the experiment you proposed, and look at how you plan to achieve it.	You could: - Remind the team that the easy part is done, now the real science starts! - Discuss the experiment you proposed. - Share any feedback from the Astro Pi judges. - Show your team the completed Astro Pi test unit.
		Plan your ongoing activity	
40–50 mins	Make a plan of work	Decide upon the why, what, how, when, and who of creating your project. Record these decisions for future reference. **Remember:** Project plans are guidelines and should be somewhat fluid. No plan is set in stone, things can happen that mean your plan may need to be adjusted. Make sure everyone can access the plan at any time, but don't allow edit access to students (or at least keep a backup copy somewhere if you do!).	Consider the hypothesis and desired outcome of your experiment, and what you will need to make it work: ● What sensors/peripherals will your experiment require? ● What data will you need to gather? ● What code will be required to manage these tasks? ● What is the criteria required for submission of your experiment? We recommend you review the reasons for rejections at Phase 2. ● What does 'done' look like? How will you know you are finished? Plan the tasks required to achieve your experiment: ● How will you make sure all your equipment is connected and working? ● How will you use this equipment in your experiment? ● How will you collect and store data? ● How will you evaluate your data and come up with a conclusion? ● How will you check in with one another to ensure collaboration and avoid duplicated effort? ● How will you check and test your work as you go to make sure it's all going to plan?

			● How will you make final checks to ensure you have met all the criteria? Assign responsibilities to team members for specific tasks: ● Who will do the coding for each part of the experiment? ● Who will work together on the larger aspects of the experiment? ● Who is responsible for coordinating the efforts of the team? (Probably you, the teacher) ● Who will oversee the testing of the experiment before it goes into space? ● Who will write up your experiment and the project reports? ● Who is responsible for submitting the experiment by the deadline? Create a rough project plan or timeline of work: ● How much time do you have before the submission deadline? ● What order of operations needs to happen to achieve the experiment by the deadline? ● Are there any parts of the experiment that need to be created first, as other parts depend on them working? ● How quickly do you need to have these things in place to allow enough time to work on the next things? ● If something is finished early, what is the next task, to ensure a smooth workflow?
20 mins	Finalise your plan and share it	Create a plan that everyone agrees with and host it somewhere it can be accessed by all.	You can create a spreadsheet or document to keep track of your workflow using Google's G Suite (which is free and comes with a lot of useful tools). Other free team management options exist such as Trello, Asana, or Nifty. Create accounts for your students on

			your platform of choice and ensure everyone can access it easily. Input your plan into the management system you choose.
Set interim goals and wrap up			
5 mins	Review progress and set plans for next week	Reiterate the responsibilities of each team member and set goals to be achieved by your next session (including your own goals!).	Remind students that you are on a deadline, and that success will require work between sessions. Ensure they have all recorded their credentials and passwords to your chosen platform, and that everyone has shared access to it. Set achievable goals for them to work toward by next session. These might be: ● Create blank templates for all required scripts that they are responsible for and store centrally ● Do some research and share notes on specific components and their requisite code ● Add your responsibilities to the plan if you ran out of time today ● Start working on your code ● Build the Astro Pi unit ● 3D print a flight case
Interim goal: Send reminders for your team in the week to see how they are getting on and if there are any issues.			