How to come prepared for a good GROW LAB session

This form helps you think through steps that are important when you come to a Grow Lab session. By completing some of the sections, you will be preparing also for questions that the technicians may ask during your session. It is ok if you don't know.
Read the form carefully and complete it with as much information as you think it may help you in a session. You can also add the questions you have for technicians, or your plans A and B.

Project outline

Write in a sentence "what" is your project, so people can understand the big picture. No need for many details, this is your "pitch"
Example:
Project: I want to create a Styrofoam-like packaging material with bacterial cellulose.

Experiment summary

Write down different steps of your project. Break it down into the different experiments you are planning and then highlight which experiment this grow lab session will be for:

Experiments:
1- Grow the bacteria cellulose and harvest it after 10 days.
2- Blend it and test plasticizers – make the best recipe
- *Blend all the material and separate the pulp for different tests*
- *Test with glycerol, coconut oil, wax and PVA glue to see what is best.*
- *Should I Mix different plasticizers?*

3 -repeat with the best recipe and make 6 x A4 sheets to make a "packaging case" of a small TV with my material

This session: prepare the materials to grow bacteria cellulose for step 1 (tests).
Will prepare 4 trays to test 4 plasticizers in step 2.

Protocol

Does your experiment follow an existing protocol, or are you creating a new one?
Start by choosing one of the options below (Grow Lab protocol, external source such as a paper or online tutorial, or a personal/new recipe). If applicable, add reference links or inspirations. *This does not need to be perfect and will be refined later with your tutor and the lab team*.

☐ **Grow Lab protocol**

- Name of protocol: GL2
- Steps (list step by step):

1. *Prepare media GL 2 , autoclave media and autoclave 4 trays*
2. *Inoculate bactéria / start growing*
3. *Wait 10 days for it to Grow – can i take out after 7 days?*
4. *Harvest the bacteria cellulose (kill the bacteria, get the bacteria cellulose, clean everything)*

☐ **External protocol (paper / website / tutorial)**

- Source (citation or link):
- Steps (list step by step):
- Add a diagram of the protocol if preferred:

☐ **New or combined protocol**

- Sources used (if any):
- Steps **OR** simple sketch/diagram of steps:

Always start by selecting one option above.

Expected timeline

Break down all the steps of your experiment into grow lab sessions and/ or days/weeks/months. Fill in the columns with the required information. It is <u>really</u> important to reflect on and include information about: how much material will be used, volume of media, and temperature.

I will prep the materials and media in 1 GL lab session and start the bacterial cellulose culture in a 2nd session because I need the plastic trays and they only fit the big autoclave.
The BC will grow for 10 days.
I will return in 1 session to harvest the BC (kill the bacteria and wash). And put the BC in the dehydrator to dry.

<u>PREPARATION</u>
How many sessions? ____
- Media ? *GL20 – 1,6L*

- Glassware and materials? *4 plastic trays*
- Autoclaving? *Yes (big)*
- Pre-growth of organism? (wake up organism?) ?) *Yes, K. hansenii.*

EXPERIMENT START/RUN
How many sessions/days/weeks? ____
List the required equipment for your process, how many vessels you need, and any other structure required (hood, autoclave, incubator, etc)
- Laminar flow
- Sterile media
- Incubator at 30oC

After 10 weeks
- dehydrator 50oC (overnight)

END AND CLEANUP
How many sessions/days/weeks? (at least 1 for cleanup)
- Requires autoclave decontamination?
- Requires especial disposal of chemicals?

- *Kill the bacteria (do I have to autoclave?)*
- *ask technician if they can autoclave for me before the* session.

Resources

Click this link for the GL lists	List the resources required and conditions (rotation of shaker, .
Organisms Organism name Is the organism available in the GL collection? Ideal media Ideal temperature Needs light? Needs agitation (shaker)?	 *K. hansenii* *Yes* *Coconut water or GL20* *27oC* *no* *no*
Equipment (be specific about conditions like	*Laminar flow, incubator at 27oC, timelapse box*

temperature, rotation, etc)	
Chemicals	*Vinegar, Coconut water, peptone, glucose*
Glassware (bottles, trays, flasks, etc. please estimate which size/volume you'll need)	*3 plastic trays 900ml*

Purchases

Would the Grow lab need to buy anything to make this experiment viable? If so, list the items below, with as much specification as possible (links when possible) and justify why this is fundamental for the experiment.

- If it is an **organism:** we need to guarantee it is safe to work. Search the scientific name of the organism you want in this list of forbidden biological agents. Technicians can help you identify the hazard group.
- If it is a **chemical**: include the full name (add link if possible) for us to analyze if it is safe to work in the lab, price, delivery times, etc.
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- Other purchases: explain why and link references when possible.

An old TV for me to pack in my Styrofoam-like material.

For each new protocol you create for the Grow Lab, follow these steps:

1. Duplicate this template and rename it to Date_YourName_ProtocolTitle.
2. Complete the form as thoroughly as possible.
3. Present your protocol, requirements, timeline, and next steps to your course tutor.
4. Schedule a consultation with the Grow Lab to review and, if necessary, revise the protocol. Remember to revise amount of media, maths, check if equipment is available and expected time to do the process.
5. Reserve a Grow Lab slot. Bring:
    - Your completed form
    - Lab notebook (bound or digital, not a laptop)
    - Appropriate lab attire (consult the Grow Lab team for PPE advice).
6. After each Grow Lab session, review your notes and organise observations. Adjust the protocol if needed, using a new Grow Lab Form.

If you modify your protocol, repeat the above steps. Depending on feedback, you may skip the consultation step—confirm with the Grow Lab team if unsure. Always inform your course tutor and meticulously track protocol changes and the progress of your experiment.

Grow Lab –Biosafety Lab Code of Conduct

To ensure safety and respect for others, you must follow these rules every time you work in the Grow Lab:

1. **Dress Safely**: Wear appropriate lab attire and personal protective equipment (PPE). Ideally closed toes shoes and cover legs. Ask the Grow Lab team if unsure.
2. **Work Carefully**: Stay focused. Handle and dispose all materials—including chemicals, reagents, and living organisms—with care.
3. **Identification**: Label and properly identify all materials with your **name, date, and what is the content (media, solutions, materials, water, organism culture, etc).** This is a health and safety matter too. Unidentified materials will be disposed without warning.
4. **Keep It Clean**:
    - Always clean up after yourself, especially in shared spaces or when using shared equipment. Clean surfaces, benches and equipment after use.
    - Leave the workspace clean and ready for the next person.
    - Your dirty dishes are your responsibility. You have to hand wash it all! Don't leave it in the sink or dishwasher!
    - Most living organisms need to be inactivated (killed) before disposal. Ask GL team for instructions. This means you might need to return another day to clean up after inactivation.
    - Never discard liquids down the drain without checking if it is ok. It can generate harmful chemical reactions. Never discard alginate or agar down the drain, it may cause clogging.
    - Dispose of sharps in the designated sharps bin only.
5. **Stay Aware**: Move carefully in the lab. Be mindful of others and ongoing experiments.
6. **Take Responsibility**:
    - Plan your sessions in advance.
    - Never rush—schedule time for cleaning in your plan.
    - If it is not included in your experiment plan (Grow Lab form) before your lab slot, do not expect that sudden changes or additions will be approved on the day.
    - Mistakes and unexpected events may happen. Plan for the unexpected, have a plan B.
    - Ask for help if unsure. No detail is too small in a biosafety environment.
    - This is part of your learning as biodesigners: working with living organisms and scientific methods means careful preparation, accountability, and respect for the biosafety environment.
    - Don't hide accidents or mistakes. If a mistake happens, report to the technicians. This helps us prevent future issues.
7. **Respect the Lab**:
    - This is a **Level 2 Biosafety Lab**, not a studio.
    - Be respectful when consulting with Grow Lab staff.
    - Come prepared to every booked slot.