



STEM for inclusive Schools

WP2 – Activities

Worksheet - Virtual Greenhouse Design Challenge

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Project Title:	STEM for inclusive Schools
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Worksheet for the Activity:

Virtual Greenhouse Design Challenge

name of the activity

Task description

Time to finish the task: 6 days

Supplies:



Writing utensils (pen/pencil, blank sheets for drafts).
Computers or tablets with access to free online tools (e.g., Google SketchUp, Tinkercad).
Software for creating presentations or infographics (e.g., PowerPoint, Canva).

Method:



Digital design challenge to create and document a sustainable virtual greenhouse. Using free online tools like Google SketchUp or Tinkercad, design a digital model of a greenhouse. Focus on integrating sustainable features such as:

- **Efficient plant placement to maximize sunlight exposure.**
- **Water conservation systems like rainwater harvesting or drip irrigation.**
- **Renewable energy solutions such as solar panels or wind turbines.**
- **Effective use of space to accommodate diverse plants while maintaining efficiency.**

Then prepare a digital presentation or infographic to showcase your designs. This includes:

- **Visual representations of their greenhouse.**
- **Descriptions of the sustainable practices integrated into the design.**



- **An explanation of how these features contribute to environmental sustainability.**

Finally, present your designs to the class, promoting discussion on innovation, feasibility, and environmental impact.

Instructions:



DAY 1:

Discuss in your group:

- What are the key features of a sustainable greenhouse?
- How can water and energy be conserved in a greenhouse?
- What role does space efficiency play?

Write down at least 5 ideas for your greenhouse design in Table 1.

DAY 2-3:

Explore free online tools (e.g., Google SketchUp or Tinkercad) to familiarize yourself with their features. Begin creating a virtual greenhouse model with your group. Ensure your design includes:

- Efficient plant placement.
- Water conservation systems.
- Renewable energy integration.
- Space optimization.

DAY 4-5:

Refine your virtual greenhouse design based on group feedback. Create a digital presentation or infographic showcasing:

- Key features and innovations.
- Environmental benefits.
- The impact of your design on sustainable agriculture.

DAY 6:

Present your virtual greenhouse to the class. Participate in a discussion about:

- The creativity and feasibility of each design.



- How each design supports sustainability.
- Reflect on what you learned about sustainable agriculture and the use of technology.

Your Group name:



Write the names of your group members in the box:



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Table 1:

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Write down at least 5 ideas for your greenhouse design and answer why is it important for sustainability:

Number	Idea	Why is it important for sustainability?
1.		
2.		
3.		
4.		
5.		



6.		
7.		
8.		

Reflection Questions:

1. What was the most challenging part of designing your greenhouse? How did your group address this challenge?
2. Which feature of your greenhouse are you most proud of, and why?
3. How can the technology you used in this project contribute to real-world sustainability?