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## STEAME ACADEMY TEACHING FACILITATION LEARNING & CREATIVITY PLAN (L&C PLAN) – LEVEL 1 STUDENT TEACHERS FLOWERS: GARDENING AND DECORATIONS

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### 1. Overview

Title	FLOWERS: GARDENING and DECORATIONS		
Driving Question or Topic	How to create a sustainable business by using local resources and technology?		
Ages, Grades, ...	<i>Age selection: 13 – 15</i>	<i>K-12 grade level selection: grades 7 - 9</i>	
Duration, Timeline, Activities	<i>10 learning hours</i>	<i>Ten 50 minute class periods</i>	<i>8 activities</i>
Curriculum Alignment	Entrepreneurship, Biology, Arts, Mathematics		
Contributors, Partners			
Abstract - Synopsis	<p>This learning and creativity plan aims to enhance students' capability to capitalize on various environmental resources for developing sustainable businesses.</p> <p>In the initial phase, students will explore gardening and garden architecture. In the second phase, students' learning process will involve researching data about the flower business. In the next phase, they will design plant arrangements for the forthcoming school anniversary celebration, where a fair will be organized. In the final stage of this project, students will present their work and sell what they have created, demonstrating their skills, and disseminating the results of their work.</p>		
References, Acknowledgements	<p><a href="https://designsvalley.com/low-cost-business-ideas-with-high-profit/">https://designsvalley.com/low-cost-business-ideas-with-high-profit/</a>  <a href="https://seedmoney.org/school-garden-resources/">https://seedmoney.org/school-garden-resources/</a>  <a href="https://seewhatgrows.org/6-school-garden-examples-to-inspire-your-own/">https://seewhatgrows.org/6-school-garden-examples-to-inspire-your-own/</a>            Growing Together, School Garden Resource Pack</p>		

### 2. STEAME ACADEMY Framework\*

Teachers' Cooperation	To promote a multidisciplinary approach, Teacher 1 (Entrepreneurship), Teacher 2 (Science – biology), Teacher 3 (Arts) and Teacher 4 (Mathematics) work together harmoniously to incorporate components from distinct fields into the learning process. When student teachers receive mentoring from service teachers, the partnership is governed by a planned work schedule with specific
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	<p>objectives and tasks to guarantee efficient assistance and growth as professionals.</p> <ol style="list-style-type: none"> <li>1. Establishing Learning Objectives: Teacher 1 and Teacher 2 work together to create well-defined learning goals that incorporate ideas from both disciplines and are in line with curricular standards and student learning outcomes.</li> <li>2. Planning and Preparation: They create a work schedule that details duties and activities for student teachers as well as service teachers. This entails formulating lesson plans, producing educational resources, and spotting chances for cross-disciplinary collaboration.</li> <li>3. Collaboration meetings: discussions on progress, sharing of ideas and resolving any problems that arise are scheduled to take place regularly. Teacher 1 will provide guidance and mentoring to the student teacher, offering insight and feedback on his or her experience and expertise.</li> <li>4. Co-Teaching and Observation: Teachers 1, 2, 3, 4 and 5 participate in co-teaching, where they learn how to implement effective learning strategies while facilitating educational experiences between them. The teachers shall monitor and provide feedback to student teachers, guiding the provision of lessons and classroom management.</li> <li>5. Reflection and feedback: To assess their progress and identify areas of improvement, service teachers and students engage in reflection practices during the cooperation. To help student teachers improve their teaching skills and confidence, Teacher 1 will provide them with constructive feedback and support.</li> </ol>
STEAME in Life (SiL) Organization	<i>Meeting with business representatives/Applications in real world Entrepreneurship – STEAME in Life (SiL) Days</i>
Action Plan Formulation	<p>STAGE I: Preparation by one or more teachers</p> <p>STAGE II: Action Plan Formulation (Steps 1-18)</p>

\* under development the final elements of the framework

### 3. Objectives and Methodologies

Learning Goals and Objectives	<p>Knowledge:</p> <ul style="list-style-type: none"> <li>- Understand the concept of business and sustainability</li> <li>- Basic knowledge of gardening</li> <li>- Study of plants, plant development, and their environmental impact</li> <li>- Compare data about flower and decoration prices from various sources.</li> <li>- Elements of design in realising plant arrangements by combining various styles and materials.</li> </ul> <p>Skills:</p> <ul style="list-style-type: none"> <li>- Analyze data about prices and businesses.</li> <li>- Practical work in the garden.</li> <li>- Planning activities on a long-term projection plan</li> <li>- Work effectively in teams.</li> <li>- Demonstrate collaborative skills such as communication, active listening, and task delegation to achieve common goals.</li> <li>- Generate original ideas and practical solutions to address identified needs (creativity and problem-solving)</li> <li>- Apply mathematical concepts such as the rules of three, calculating quantities, means, sums and other parameters relevant to the topic.</li> <li>- Estimate the cost of various products and, therefore, their business proposal.</li> <li>- Design a logo and advertisements.</li> <li>- Communicate ideas clearly, using verbal, written, or visual means.</li> </ul>
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	<ul style="list-style-type: none"> <li>- Students will design and create sustainable floral arrangements using recycled materials.</li> <li>- Students will apply scientific principles of plant biology and design to create visually appealing and long-lasting arrangements.</li> </ul> <p>Attitudes:</p> <ul style="list-style-type: none"> <li>- Maintain an open mindset and curiosity and seek innovative ideas.</li> <li>- Genuine interest in exploring the broad theme of flower decorations and sustainability.</li> <li>- Embrace challenges as opportunities and improvement during the creation of the business proposal.</li> <li>- Students will develop critical thinking and problem-solving skills through creative design and experimentation.</li> </ul>
Learning Outcomes and expected Results	<ol style="list-style-type: none"> <li>1. Research the flower arrangements industry and sustainable alternatives.</li> <li>2. Create sketches for different flower arrangements.</li> <li>3. Develop a business proposal.</li> <li>4. Create flyers or promotional videos, highlighting the benefits of the materials they use and their competitive pricing.</li> </ol>
Prior Knowledge and Prerequisites	<ol style="list-style-type: none"> <li>1. Organizing data in tables</li> <li>2. Basic understanding of proportions</li> <li>3. Analytical reasoning</li> <li>4. Proficiency with measuring tools</li> <li>5. Experience with group work.</li> <li>6. Openness to interdisciplinary learning</li> </ol>
Motivation, Methodology, Strategies, Scaffolds	<p>To guarantee a thorough comprehension, this lesson plan's teaching technique combines interactive lectures, discussions, practical activities, and group work.</p> <ol style="list-style-type: none"> <li>1. Interactive Lectures: The instructor of social entrepreneurship employs lectures to present important ideas and get the class talking about topics like investing, profit and loss, sustainability, and logo design.</li> <li>2. Practical Activities: To provide students with real-world experience of managing a firm, teachers resort to computation exercises and data analysis assignments based on /starting from students' collected information from various sources during their market research and explorations (Some suggestions are given in Annex 1, 2, 3).</li> <li>3. Group Work: By working together to develop the project activities and construct various floral arrangements, students may strengthen their cooperation skills and put what they have learned into practice.</li> <li>4. Reflection and Discussion: To promote critical thinking and give students a chance to consolidate their learning and exchange viewpoints, reflective time and open conversations are incorporated into each session.</li> </ol>

#### 4. Preparation and Means

Preparation, Space Setting, Troubleshooting Tips	<p><i>Procedures, spaces, and material preparation</i></p> <p><i>Setting in classroom, outdoor activity, computer lab, etc.</i></p> <p>The project work will be initiated in the classroom, then the students will continue to explore and collect data outside of school, from local entrepreneurs. The established groups will meet regularly. The classroom students will have regular meetings with the teachers to enhance their subject learning in</p>
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	connection with the real-world explorations made. The project's progress will be analyzed on a regular base.
Resources, Tools, Material, Attachments, Equipment	<ul style="list-style-type: none"> <li>- Websites for supermarkets and flower shops where one can find information on selling prices.</li> <li>- Cameras, computers</li> <li>- Excel software, Google Forms</li> </ul>
Health and Safety	<i>Clear instructions and written forms of consent will be provided for outdoor activities.</i>

## 5. Implementation

Instructional Activities, Procedures, Reflections	<p><b>1. Activity: Brainstorming and project planning</b></p> <p>Students will be divided into groups of four to five after being briefed on the project's topic and asked to compile a list of materials or factors that need to be investigated to make and market floral arrangements. They will discuss among themselves and produce a list of tasks that they can all work on together later. Students will agree on what products will be realized and the strategy to achieve their goals. They will also agree on the way to present the project results (for example, as a poster or a ppt presentation). One of the teachers will facilitate this activity.</p> <p><b>2. Activity: Market research on the floral arrangements industry</b></p> <p>Students visit the websites of numerous flower sellers to find out the price range and selling price of their raw materials and flower decorations. They use a worksheet to record the information they collect in a table. They will compare pricing, compute statistical means, and evaluate data. Students will also visit local flower shops and markets to gather more data, learn more about how flowers are grown for the arrangements industry and its impact on the environment. They will also observe how a flower shop is run and what strategies are implemented in order to maintain a profitable business. They will make observations about gardening, harvesting plants and the unique needs of each plant regarding the amount of sunlight needed, type of soil and watering schedule.</p> <p><b>3. Activity: Look for eco-friendly substitutes for supplies and environmentally friendly ways to get and discard flowers.</b></p> <p>Students will investigate sustainable floral procurement, disposal practices, and green material substitutes and recycled materials. They use a worksheet to record the information they collect in a table. They will compare pricing, compute statistical means, and evaluate data.</p> <p><b>4. Activity: Design products</b></p> <p>Students will draw their cards and floral designs on paper. Alternatively, they can work on a computer, using photos and design software. They will select recycled materials for their vase or container and consider incorporating natural elements like dried flowers, leaves, or twigs. They will discuss ways to minimize waste and maximize the longevity of the arrangement. Groups refine their designs and create a list of materials needed for their arrangements.</p> <p><b>5. Activity: Create a business proposal</b></p> <p>After taking into consideration every cost-related detail, the flower decorations' selling price is determined. The students will draft a selling offer after considering all the information they have examined and the conclusions they have drawn from the earlier exercises.</p> <p><b>6. Activity: Design logo and advertisements</b></p>
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	<p>Students will create a logo, web flyers, or videos to promote their design and approach to business.</p> <p><b>7. Activity: Project presentation in the classroom</b></p> <p>The groups present their work. The other classroom groups will analyse and comment on the work done and make suggestions for improvement so that all the students in the class will be able to present their final products confidently at the forthcoming celebration.</p> <p><b>8. Activity: A short written analysis of the project</b></p> <p>Students will reflect on the activities they did during the project based on a structured essay.</p>
Assessment - Evaluation	<p>1. Formative Assessment</p> <ul style="list-style-type: none"> <li>- Constantly assessing students' learning through group projects, practical exercises, and class discussions.</li> <li>- Students receive regular feedback to help them with their study and clear up any misconceptions.</li> <li>- Short tests to determine understanding of important ideas and abilities.</li> <li>- Opportunities for peer and self-evaluation, when students consider their own development and offer comments to peers.</li> </ul> <p>2. Summative assessment</p> <ul style="list-style-type: none"> <li>- Classroom presentation of the products designed by each group. Each member of the audience groups will provide peer evaluation and feedback, for each presentation. Teachers will also give feedback. This will also be an opportunity to improve the products before the public presentation.</li> <li>- Students' participation in the school fair at the flower shop booth also serves as a summative assessment.</li> <li>- Evaluate the creativity, originality, and technical skill demonstrated in the floral arrangements.</li> <li>- Assess the use of recycled materials and sustainable practices in the design and creation of the arrangements.</li> </ul>
Presentation - Reporting - Sharing	<p>Classroom presentation and sharing</p> <p>Presentation of the activity to the school's teachers and kids.</p> <p>Presentation at the school fair via the advertisement.</p>
<i>Extensions - Other Information</i>	

# Resources for the development of the STEAME ACADEMY Learning and Creativity Plan Template

## In the case of learning through project-based activity

### STEAME ACADEMY Prototype/Guide for Learning & Creativity Approach Action Plan Formulation

*Major steps in the STEAME learning approach:*

#### **STAGE I: Preparation by one or more teachers**

1. Formulating initial thoughts on the thematic sectors/areas to be covered
2. Engaging the world of the wider environment / work / business / parents / society / environment/ ethics
3. Target Age Group of Students - Associating with the Official Curriculum - Setting Goals and Objectives
4. Organization of the tasks of the parties involved - Designation of Coordinator - Workplaces etc.

#### **STAGE II: Action Plan Formulation (Steps 1-18)**

##### Preparation (by teachers)

1. Relation to the Real World – Reflection
2. Incentive – Motivation
3. Formulation of a problem (possibly in stages or phases) resulting from the above

##### Development (by students) – Guidance & Evaluation (in 9-11, by teachers)

4. Background Creation - Search / Gather Information
5. Simplify the issue - Configure the problem with a limited number of requirements
6. Case Making - Designing - identifying materials for building / development / creation
7. Construction - Workflow - Implementation of projects
8. Observation-Experimentation - Initial Conclusions
9. Documentation - Searching Thematic Areas (AI fields) related to the subject under study – Explanation based on Existing Theories and / or Empirical Results
10. Gathering of results / information based on points 7, 8, 9
11. First group presentation by students

##### Configuration & Results (by students) – Guidance & Evaluation (by teachers)

12. Configure STEAME models to describe / represent / illustrate the results
13. Studying the results in 9 and drawing conclusions, using 12
14. Applications in Everyday Life - Suggestions for Developing 9 (Entrepreneurship - SIL Days)

##### Review (by teachers)

15. Review the problem and review it under more demanding conditions

##### Project Completion (by students) – Guidance & Evaluation (by teachers)

16. Repeat steps 5 through 11 with additional or new requirements as formulated in 15
17. Investigation - Case Studies - Expansion - New Theories - Testing New Conclusions

## STAGE III: STEAME ACADEMY Actions and Cooperation in Creative Projects for school students

**Title of Project:** \_\_\_\_\_

Brief Description/Outline of Organizational Arrangements / Responsibilities for Action

<b>STAGE</b>	<b>Activities/Steps</b> Teacher 1(T1) Cooperation with T2 and student guidance	<b>Activities /Steps</b> <b>By Students</b> Age Group: ____	<b>Activities /Steps</b> Teacher 2 (T2) Cooperation with T1 and student guidance
A	Preparation of steps 1,2,3		Cooperation in step 3
B	Guidance in step 9	4,5,6,7,8,9,10	Support guidance in step 9
C	Creative Evaluation	11	Creative Evaluation
D	Guidance	12	Guidance
E	Guidance	13 (9+12)	Guidance
F	Organization (SIL) STEAME in Life	14 Meeting with Business representatives	Organization (SIL) STEAME in Life
G	Preparation of step 15		Cooperation in step 15
H	Guidance	16 (repetition 5-11)	Support Guidance
I	Guidance	17	Support Guidance
K	Creative Evaluation	18	Creative Evaluation



ANNEX 1: Data collection for problem solving











Annex 2: Example of floral decoration for cards



Annex 3: Business ideas for using flower decorations













