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## STEAME ACADEMY TEACHING FACILITATION LEARNING & CREATIVITY PLAN (L&C PLAN) - LEVEL 1 STUDENT TEACHERS: LEMONADE STAND

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### 1. Overview

Title	LEMONADE STAND
Driving Question or Topic	What is the best lemonade recipe? What is the most advantageous option? How much should a lemonade cup cost in order to turn an income that is profitable?
Ages, Grades, ...	Age selection: 13 – 15      K-12 grade level selection: grades 7 - 9
Duration, Timeline, Activities	6 learning hours      Six 50 minute class periods    5 activities
Curriculum Alignment	Science, Math, Entrepreneurship
Contributors, Partners	
Abstract - Synopsis	The students plan a charity fair where they will sell lemonade among other items. They investigate what is the best water - lemon juice – sugar ratio for their lemonade and which would maximize their sales. The most cost-effective solution will be determined by the students after accounting for the prices of raw materials and cups needed. The final objective is to choose a selling price that both fits the market price range and generates a healthy profit for the seller.
References, Acknowledgements	

### 2. STEAME ACADEMY Framework\*

Teachers' Cooperation	<p>To promote a multidisciplinary approach, Teacher 1 (Entrepreneurship), Teacher 2 (Science) and Teacher 3 (Math) 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 objectives and tasks to guarantee efficient assistance and growth as professional.</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 detailed 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> </ol>
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STEAME in Life (SiL) Organization	<p>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.</p> <p>4. Co-Teaching and Observation: Teachers 1, 2 and 3 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.</p> <p>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.</p>
	<p><i>Meeting with business representatives/Applications in real world</i></p> <p><i>Entrepreneurship – STEAME in Life (SiL) Days</i></p>
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	<ol style="list-style-type: none"> <li>1. To organize and carry out a legitimate experiment to test their theories.</li> <li>2. Calculate ratios and identify the factors that influence the taste of lemonade</li> <li>3. Use a variety of techniques, including observation, measurement, and recording, to gather and document data.</li> <li>4. Using the data they gather, create tables and analyze data.</li> <li>5. Calculate the unit price of objects by applying the reduction method to the unit.</li> <li>6. To create justifications for conclusions based on data.</li> <li>7. Gain proficiency in making wise decisions.</li> </ol>
Learning Outcomes and expected Results	<ol style="list-style-type: none"> <li>1. Create a banner for the lemonade stand.</li> <li>2. Create a price list for lemonade.</li> <li>3. To create a promotional video, 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 and ratios</li> <li>3. Volume/capacity of solids (glass shape / truncated cone)</li> <li>4. Analytical reasoning</li> <li>5. Proficiency with measuring tools</li> <li>6. Experience working in groups;</li> <li>7. 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 exercises, 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, etc.</li> <li>2. Practical Activities: To provide students with real-world experience managing a firm, computation exercises and data analysis assignments are used.</li> <li>3. Group Work: By working together to construct various floral arrangements, students may strengthen their cooperation skills and put what they've 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	<i>Procedures, spaces, and material preparation</i> <i>Setting in classroom, outdoor activity, computer lab, hybrid environment, etc.</i>
Resources, Tools, Material, Attachments, Equipment	Websites for supermarkets and coffee shops where you can find information on selling prices; lab supplies, painting materials, sample cups, Excel software, Google Form, cameras
Health and Safety	

## 5. Implementation

Instructional Activities, Procedures, Reflections	<p>Activity 1: Group-collaborative activity (groups of 4-5 students)</p> <ul style="list-style-type: none"> <li>Brainstorm: After giving the class an explanation of the theme, each student is requested to compile a list of all the subjects they feel require more study to be able to sell lemonade at the charity fair. Worksheets are used for this. Students in each group brainstorm and create a list of topics or variables to investigate; they then present their lists in plenary to justify their choices. After arguing and debating, every student makes a shared list of tasks they need to complete later.</li> </ul> <p>Activity 2: Group-collaborative activity (groups of 4-5 students)</p> <ul style="list-style-type: none"> <li>Choosing appropriate recipes for lemonade and running an experiment to find the ideal proportions of water, lemon juice, sugar, and baking soda</li> </ul> <p>To produce lemonade, students can use a variety of recipes and ingredients. Pupils create a Google Form and distribute samples of the lemonade they made to all pupils in the school, allowing them to cast their votes.</p> <p>Activity 3: Group-collaborative activity (groups of 4-5 students)</p> <ul style="list-style-type: none"> <li>Market studies on sugar and lemons.</li> </ul> <p>Pupils research the costs of sugar and lemons on supermarket websites to select the best deals. To determine the cost of the unit in each package, they apply the reduction procedure to the unit.</p> <p>They enter all of the data they gather into tables (Worksheet 3) and draw conclusions about the best way to buy raw materials to make lemonade.</p> <ul style="list-style-type: none"> <li>Survey to get data on lemonade sales prices.</li> </ul> <p>To ascertain the pricing range and set the selling price of their lemonade cups, students look through the cafeteria websites that provide resident beverage distribution. They keep track of the data they gather in a table (Worksheet 3).</p> <p>Activity 4: The balance sheet.</p> <p>The students complete market research on the packaging of the cups they would purchase (number of cups in the box in connection to the price of the package), after considering all the data they have examined and the conclusions they had made in the previous tasks. They arrive at the selling price of lemonade for two or three distinct cup sizes after accounting for all the cost and appropriateness data.</p> <p>Activity 5: Marketing initiative to increase sales</p> <p>Students create a price list for lemonade in various cup sizes, a banner for their beverage counter, and a promotional movie for the drinks they serve that highlights the advantages of the recipes they employ and their costs.</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> </ul>

Presentation - Reporting  
- Sharing

*Extensions - Other  
Information*

- Short tests to determine understanding of important ideas and abilities.
  - Opportunities for peer and self-evaluation, when students consider their own development and offer comments to peers.
2. Students' participation in the school fair at the flower shop booth serves as the summative assessment.

*Documents, outputs, artifacts, products produced by the students with references, web links etc., for sharing to media*

# 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