# LESSON PLANS

## Module 11: Preparing a STEAM Project Poster & Presentation on the Farm

## Lesson Plan 1

Farm Equipment Poster Design & Farm Exhibition

**Proposed Students Age Range: 9-14**

| Purpose / Learning Objectives |
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| * Students understand the functionality and importance of various farm equipment in sustainable farming. * Students develop skills in graphic design and effective communication through poster creation. * Students apply engineering and technological concepts in designing sustainable farm equipment. |
| Intersecting objectives |
| * Students know structural engineering and construction materials. * Students know environmental science and policy. * Students understand sustainable agriculture practices and their implementation. * Students design equipment that is safe, efficient, and effective * Students analyze and interpret data from sensors and other sources * Students design and construct buildings that are safe and functional * Students know sustainable farming techniques and systems * Students know climate change science and adaptation strategies. |
| Facilitation |
| * Choose a local farm to visit your students and announce the upcoming farm visit or on-site activity. * This is an on-site class in the farm so you should get the necessary permissions and make transportation arrangements. * During the class the teacher provides ideas and an overview of various farm equipment, their functions, and their significance in sustainable farming. * The teacher guides students on effective poster design principles, including layout, colour schemes, and visual elements to represent the equipment. * The teacher encourages group discussions on different aspects of farming and how technology can improve sustainability. * The teacher provides videos about sustainable farming, sustainable farming equipment, and eco-farming equipment. There are some recommended videos below in the source section. |
| Ideas for follow-up |
| Farm Exhibition  Teachers and students can organize a "Farm Equipment Farm Exhibition" where students can present and explain their posters to their peers, teachers, and invited local farmers.  They can invite professionals from the agricultural or engineering field to assess the posters and provide feedback to students. |
| Resources required |
| * Drawing paper, poster boards or large canvases * Drawing and colouring materials * Simple musical instruments such as sticks, small drums, speakers and music player. * Internet access for extra research * Markers, coloured pencils, glue, scissors * Transportation and permissions for the farm visit. |
| Source / The day of the lesson: Materials & Class preparation |
| Ingenious Agriculture Tools  <https://www.youtube.com/watch?v=01cc5or1728>  Amazing Farming Tools That Work Well  <https://www.youtube.com/watch?v=14MmNALEqjY>  Can we create the perfect farm?  <https://www.youtube.com/watch?v=xFqecEtdGZ0&t=132s>  How to draw agricultural tools with names  <https://www.youtube.com/watch?v=xaM7RB5xnPI> |

| Implementation |
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| Timing | Instructions step by step |
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| 20 min | **Pre-activity: Brainstorming & Ideation in the farm**   * Take a short walk on the farm and let students to observe the farming tools * Ask students to name the most used, useful or creative tools that they observe on the farm/s. * Explain that you are going to create a list of tools that are commonly used, highly useful, or creatively innovative on farms. * Allocate 5 minutes for brainstorming. * Encourage students to think broadly and consider various aspects of farming, such as planting, harvesting, animal care, maintenance, or technology. * After the brainstorming time, ask students to share their ideas. Write these ideas on a paper. * Discuss and Group Ideas: Encourage discussion about the tools, their functions, and how they contribute to farm operations. |
| 10 min | Show educational videos or visuals related to farm equipment and sustainable farming practices to the students.   * Facilitate a discussion with students about the equipment showcased in the videos and how they contribute to sustainable farming practices. * Ask students to note down key points and interesting features of the equipment discussed. * Ask students to start the design process |
| 30 min | * Divide the students into groups, ensuring each group has access to drawing and coloring materials, poster boards, and internet access. * Instruct each group to choose a farm equipment item from the brainstorming session or the videos. * Each group should design a poster illustrating the chosen farm equipment, its functionality, and its importance in sustainable farming. * Encourage them to apply engineering and technological concepts in the design. * Emphasize effective communication through visuals and text on the poster. |
| 30 min | * Ask each group to present their posters. * During the presentations, encourage groups to explain the functionality and significance of the chosen equipment in sustainable farming. * Facilitate a discussion where students can share their reflections on the activity, what they've learned, and any challenges they faced during the poster design process. |

| Hands on activity / farm - based learning |
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| Timing | Description of activity |
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| 60 min | Students will form groups and use drawing materials, poster boards, and internet access to design a poster about a chosen farm equipment item. Each poster will illustrate the equipment, its functionality, and its importance in sustainable farming, incorporating engineering and technological concepts.  Groups will then present their posters, explaining the equipment's role in sustainable farming. A class discussion will follow, allowing students to reflect on their learning and discuss any challenges faced during the design process. |

## Module 11: Preparing a STEAM Project Poster & Presentation

## Lesson Plan 2

Farm-to-Table Storytelling

**Proposed Students Age Range: 9-14**

| Purpose / Learning objective |
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| * Students understand the concept of "farm-to-table" and its significance. * Students comprehend the role of science, technology, engineering, mathematics, and art in the food production and distribution process. * Students develop artistic storytelling skills to convey educational content related to farming and sustainability. |
| Intersecting objectives |
| * Students are aware of plant growth and development * Students are aware of manufacturing processes and quality control. * Students understand sustainable agriculture practices and their implementation. |
| Facilitation |
| * Choose a local farm to visit your students and announce the upcoming farm visit or on-site activity. * This is an on-site class in the farm so you should get the necessary permissions and make transportation arrangements.   Beyond the Lesson for Students:   * Encourage students to maintain a farm journal, documenting their continued exploration of farming and sustainable food choices.   Encouragement for Teachers:   * Integrate farm visits or on-site activities into your curriculum regularly to reinforce the concepts of sustainable farming and healthy eating. |
| Ideas for follow-up |
| * You can have students share their stories with younger classes to promote awareness of sustainable food choices. * You can organize a "farm-to-table" fair where students can showcase their visual storytelling pieces along with samples of the fruits or vegetables they depicted. * You can organize a farm-to-table recipe competition, where students create recipes using their chosen fruit or vegetable and present them to judges. |
| Resources required |
| * Art materials for creating storytelling (paper, markers, pens, colored pencils, simple musical instruments, music player, speaker for dance performance etc.). * Transportation and permissions for the farm visit or on-site activity. * Farm experts or guides to explain the farming processes during the visit.(optional) |
| Source / The day of the lesson: Materials & Class preparation |
| * YouTube Video: Milk’s journey from farm to table   <https://www.youtube.com/watch?v=Qt8SqUB386k>   * Youtube video: Field to Fork - Strawberry Video   <https://www.youtube.com/watch?v=1h3750ryHu8>   * Youtube video: How did this Broccoli get to my plate?   <https://www.youtube.com/watch?v=yd_yWjj3d0o>   * Youtube video: A Potato's Journey from Farm to Fork   <https://www.youtube.com/watch?v=9uEiaXnMhH4>   * Website: Farm to Fork Projects   <https://www.behance.net/search/projects?search=farm+to+fork&sort=recommended&time=month> |

| Implementation |
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| Timing | Instructions step by step |
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| 40 min | Pre-activity:   * Take a walk around the farm. Students will observe the farming practices and the stages of growing, harvesting, and preparing the farm products. * Encourage them to take notes, sketches, or photos during the activity reference in their storytelling. * Find a suitable place and start with a discussion on the concept of "farm-to-table" and why it's important for sustainable and healthy eating habits. * Emphasize the role of science, technology, engineering, mathematics, and art in this process. * Introduce the chosen fruit or vegetable and its typical journey from the farm to the table. |
| 10 min | Activity:   * After the on-site activity, assign each student a dairy product, fruit, or vegetable based on their observations and experiences. Or you can divide the class into groups and assign the groups to a dairy product, fruit, or vegetable. * Provide time for research on their chosen produce, using the information gathered during the visit. If you need you can use the videos in the source section. Moreover, you can provide pictures, posters, or websites. * Let the students to choose among different arts (music, dance, role-play, visual arts, literature etc.) Guide students in creating a story or outline for their storytelling. |
| 40 min | **Artistic Creation**   * Allow students to use various arts to create their visual storytelling * Encourage creativity in how they represent the journey, incorporating both artistic and educational elements. |

| Hands on activity / farm - based learning |
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| Timing | Description of activity |
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| 40 min | **Artistic Creation**  Students will use various arts such as visual arts (posters, comic-strips, cartoons, illustrations), music (chants, songs, rhythmic tongue twisters), literature (stories, poems), theatre (role plays) or dance to create their storytelling. |