

Youth Summit on Food and Education - Project ideas

Imagine an entire school curriculum rooted in a single denominator: food. For example, biology, ecology and environmental science centred on projects relating to the growth of plants and animals. Or literature, history, sociology and humanities focusing on the importance of food and concepts like 'breaking bread', feasts and banquets. Just think of how explorations by Vikings, Columbus, Marco Polo, etc. were largely driven by trade in spices, tea, sugar, coffee, silk and cotton... And then imagine your students turning these food-related projects into 3-5 min videos, which you upload to this Summit to share with other educators and students around the world.

Here are some ideas to inspire you and your students. Consider your students' local environment, what is unique about where they live, their interests and what they think would be a creative/innovative video project to share with the rest of the world. The subject categories below are only for guidance.



- **Growth of plants.** As vegetables grow, how do they change in structure? What happens with the root mass? Or the leaves and the structure of the canopy?
- **Vegetable development.** Study the process of flowers on tomato and pepper plants as they turn into edible and harvestable vegetables.
- **Cell and tissue biology.** Under a microscope, examine tissues and cells from different vegetables and from different parts of each plant, and relate structure to their functions and development stage.
- **What is yeast?** How does it live/grow, and why is it essential to bread making? What is the history and definition of "bread"?
- **Insects in our community garden.** Throughout a growing period, take photos of the different insects visiting your garden and explain to the audience which ones are pollinators, pests (herbivores – eating the plants), and biocontrol agents of pests – in other words, describe your garden as a diverse web/community of organisms. Also sample organisms in the soil – the decomposers/detrivores.
- **Human health.** Use food grown with students to prepare food and investigate the nutritional values of different dishes. Perhaps include traditional recipes and reach out to the families of students, their parents and grandparents, to obtain interesting and diverse recipes. In classes with students from different cultural and ethnic backgrounds, take advantage of this diversity and include projects about the many different ways to prepare food. This can be combined with a "food contest", e.g. which group of students can prepare the tastiest and also most healthy/nutritious meal?
- **How important are specific micro- and macro-nutrients to human health and nutrition?** Identify crops with high levels of specific micro- and macro-nutrients that can grow well locally. Develop recipes. Launch a cooking competition! Offer selected winning food items to fellow students and survey their feedback (collect and present data).



- **What is the effect of ambient and soil temperatures on the growth of a tomato plant?** Measure growth of tomato or bean plants where you live and collect data on ambient and soil temperatures. Use this data to develop a tomato plant growth model. Search the internet and compare your results with published growth models.
- **How much food could you potentially grow where you live?** Investigate growth models available on FAO websites: <http://www.fao.org/land-water/databases-and-software/crop-information/en/>). Calculate yield potential and input requirements for your area/region. How many kilos of beans could be grown at your school, for example? What would be the market value of those beans?
- **School canteen.** How much food is your school canteen purchasing per week? How much of that food could be grown at your school, based on availability of land? Could the school save money by growing its own food?
- **How many grams of different vegetables would I need to eat each day to meet my nutritional requirements?** Examine articles and statistics on human health. Students can use this information to calculate their daily requirements for different nutrients. Then link that to information about nutritional content of different vegetables to calculate how much of a given vegetable students need to eat each day. Turn these calculations into figures.
- **Surveys of food and preferences.** Develop a questionnaire (could be online) and survey students at your school about their food preferences (fruits, vegetables, meat) and generate figures. Link these data to articles and statistics on human health and on agronomics to make calculations of: 1) how much land and input (water and fertiliser) is needed to grow food according to the students' preferences; 2) if preferences by students could be changed, could their food needs be met with less land and input?



- **How are food items used as symbols in art (i.e. paintings or poems)?** Describe classical and also creative examples of food in art. Show an example of art made with food.



ENVIRONMENTAL SCIENCES

- **Is it possible to collect rainwater from the roof of your school?** Study annual rainfall data and compare these with FAO data on irrigation needs for specific crops. Develop irrigation schedules (as a function of planting) to make total yield predictions.
- **How much food could be grown on roofs or walls of your school? And in your city/town?** Search the internet for agronomic statistics on roof production of vegetables and use Google Earth to quantify roof coverage. Then calculate amounts of rain and provide estimates of how much food could be grown on roofs.
- **“Upcycling” and food production.** Are there ways to compost “waste products” from nearby productions and use such waste products as fertiliser? Is there a way to reconsider “waste”, so that it is not something we throw away but instead a rich input to a food production system?



SOCIAL SCIENCES

- **How and why do food and meals vary among cultures around the world?** Discover and study ways in which food is used in different cultures and its role in traditions and conflict resolutions.
- **Food and food deserts.** What is the availability of fresh vegetables in your area? Compare with other areas and investigate solutions to shortage of fresh food in some areas (food deserts).