How can **crop diversity** feed the **world?**

the food DIVERSITY challenge

The **food** DIVERSITY project challenge asks you to focus on the importance of diversity for the "food of the future," including diverse plant varieties, food products and food systems.

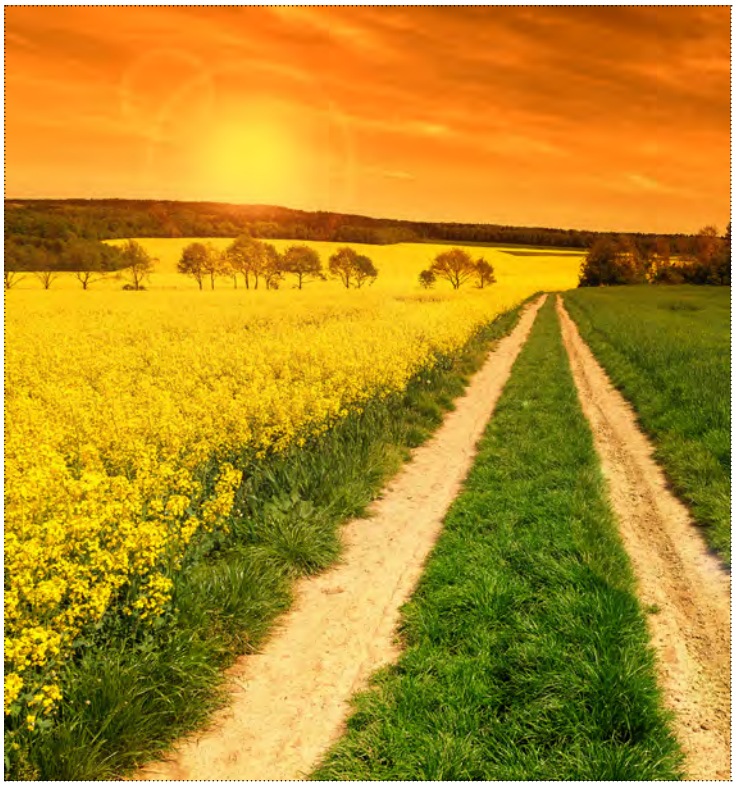
Think about the range of food choices that can come from a variety of environments, including cultivated plants, traditional Indigenous plants, seed banks and/or wild plant species. The food choices that you identify as "foods of the future" can be shared by illustrating the role of plants in these food choices, including:

- The plants' characteristics, structures and functions
- Their life cycles and growing needs and environments
- Their place in seed banks for future plant diversity
- The cycle they go through as a food that comes from a field and ends up on the table
- How the cells and systems of the plants helps us understand their nutrient value

You can create and develop your project around a variety of ideas. Consider the following examples or create your own project focus.

- Your project could be created with a sequence of one, two or three demonstrations, labs or skits that share innovative food dishes of the future and the plants they come from.
- Your project could also be developed as an infographic or photo board featuring plant foods of the future, with callouts used to identify plant characteristics and structures.

This project TOOLS guide includes graphic organizers, thinking maps, the **food DIVERSITY Project Planner** and **Project Pages**.



- You could also feature a poster or photo board display that shows how healthy and sustainable food production can be mechanized in the future with innovative technologies.
- You could construct a lab demonstration that shares the results of two to three plants grown in different growing conditions, including conclusions that address why these plants are important for the future food supply. Alternatively, your lab could explore the cells and structures of a plant food and its importance for future nutrition.
- Your "food for the future" scenarios could be represented with slow-lapse videos, or in a digital format such as a Kahoot, at www.kahoot.com, or a Quizizz, at https://quizizz.com/.

The tools and templates in this guide as well as on the **project** AGRICULTURE website at www.projectagriculture.ca can help you develop your project. Use the **food** DIVERSITY information sources, photos, videos, infographics and stories on the **project** AGRICULTURE website to start your research.

Check out the Alberta farm interviews on the MEET A FARMER webpage of the **project** AGRICULTURE website at www.projectagriculture.ca/meet-a-farmer/ for additional perspectives from Alberta farmers on issues and topics connected to agriculture histories.

project AGRICULTURE **project planner**

being active in the food system

Active participation is about:

- Working collaboratively with others to discuss and take action, from informed food buying to understanding what local farmers and producers do to building strong, healthy and sustainable communities
- Finding out more and becoming knowledgeable about the roles that plants play in food and food systems
- Sharing ideas about the food system

?

How do you depend on plant foods? What do you think you could do to improve the food system?

share your ideas
scenarios
feeding the future
food diversity
project challenge
plants for food
active participation

meeting the challenge

You are challenged to imagine and explore what a food system of the future could look like by creating and sharing a **food** DIVERSITY project**.**

Food systems include the way food is produced, processed, distributed, consumed, and disposed of, and they have direct impacts on the lives of Canadians. Sustainable food systems are interconnected and essential for the well-being of communities.

Your project can share one or several scenarios focused on the importance of diversity in the food system. It can identify the diversity of foods that are needed to feed a growing population.

Scenarios can be stories, examples, problems and solutions or demonstrations. They should be based on evidence and facts. Scenarios can show what the food of the future could be and can be created around a slogan or theme, such as in the following examples:

- More is Better: The food that can be provided by a diversity of crop and/or traditional plants. For example, a poster, infographic or photo board can be used to illustrate the food choices provided by a mixture of existing crops, new crops and/or traditional plants.
- More than the Land: How growing environments and conditions might change in the future. A model, illustrations or a demonstration can show how plants used for food could be affected by changes - both positive and challenging - to water sources, climate and the land.
- Food for Thought: The science behind ways that plant foods might be grown or produced in the future. A Tik Tok video can show a simulated life cycle of a crop plant and identify its place in the food system or share a science innovation that is improving food sources. A video tour can highlight the work of seed banks in protecting food diversity. An animated sequence of photos can focus on the journey of a plant food through a local, sustainable or organic food system.
- Waste Not, Want Not: A comparison of food production and food waste. An infographic, profile poster or community map could highlight how food waste exists and what could be changed for future food diversity.

Consider starting by checking out the latest articles on science and food research and innovation projects on the Agriculture and Agri-Food Canada website in Scientific Achievement in Agriculture at https://agriculture.canada.ca/en/news-agriculture-and-agri-food-canada/scientific-achievements-agriculture.

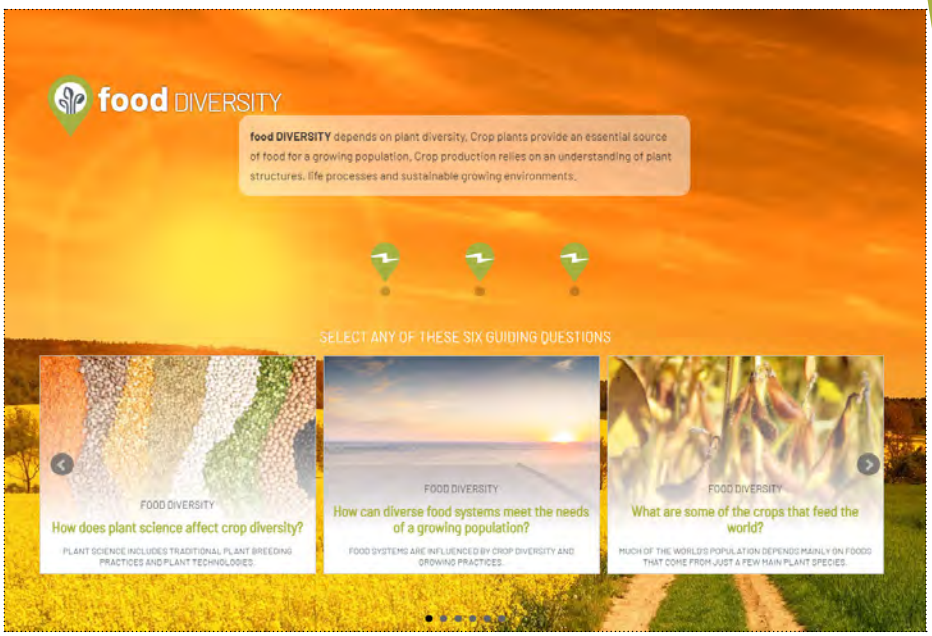
plan your project

Start to brainstorm ideas for a project that is focused on perspectives, opinions and priorities for sustainable agriculture and food.

Use the **project** AGRICULTURE resources to help you identify a project question. Open the **food** DIVERSITY topic.

Click on the animated map pins in the **food** DIVERSITY topic in the **project** AGRICULTURE **TOPIC VIEWER** to find and download learning sources that spark thinking and questions. Hover over the pin to select the focus questions that interest you. Open the window to find and download the Spark Questions about **food** DIVERSITY PDF handouts.

Examples of project questions are provided throughout these Spark Questions handouts. Look for these questions in **INVESTIGATE MORE** sidebars.



Assess your conceptual and procedural knowledge as you develop your project.

- ☐ I create a project question as focus for a **food** DIVERSITY project.
- ☐ I gather and organize information to support my project question.

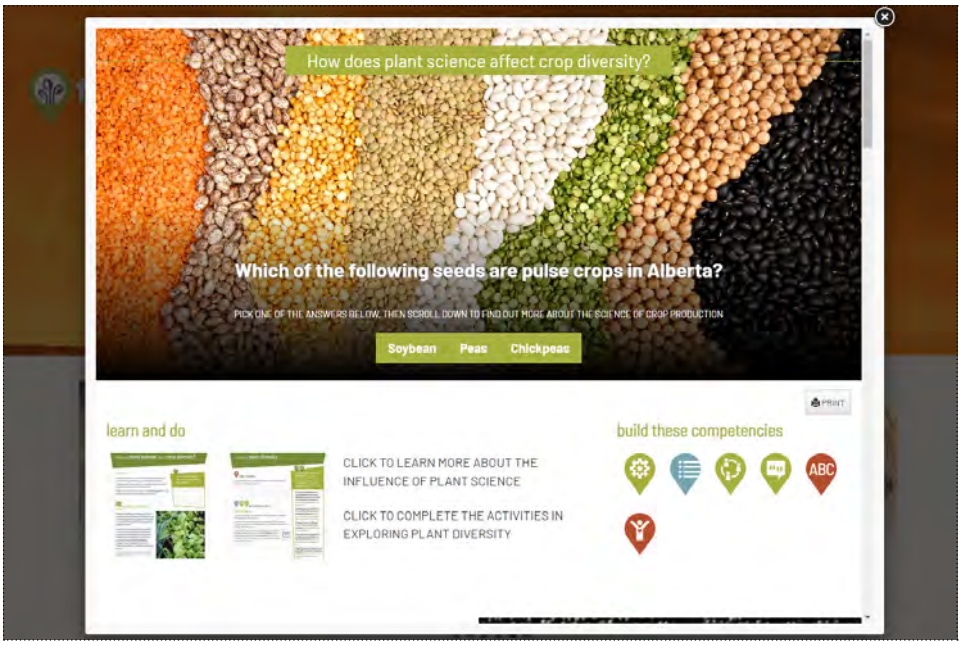
Map a project concept. Identify what interests you and brainstorm ideas. Describe what your project could look like. Consider who you want to reach with your project and what you'd like them to learn.

Use the **food** DIVERSITY **Project Concept Map** on the following pages or create your own.

- ☐ I brainstorm ideas and approaches for my **food** DIVERSITY project.

Explore the learning sources and information in the **food** DIVERSITY carousel slides in this topic.

Each carousel slide focuses on a guiding question. Select from the relevant sources in each carousel slide for your project research.



Use the **food** DIVERSITY **Project Planner Template** on the following pages to plan and create your project. Identify a project design and format.

Shoot a video, build a photo essay, write an op-ed, create an infographic or design your own project format. With your teacher, plan to submit your project to the **project** AGRICULTURE website to share it with other students and Alberta farmers. Choose from the following formats, with a maximum file size of 50 MG:

- PDF document (Word, PowerPoint, Google Docs or Slides to be saved in PDF format)
- JPEG, GIF or PNG file
- Project URL for videos or webpages (including Google Docs, Slides, Youtube, Vimeo or videos hosted on Google Drive)

Use the Project Pages to find design suggestions for different types of projects. Project Pages can be found on the **PROJECT GUIDES** webpage at www.projectagriculture.ca/share/project-guides/.

- [ ] I research background information and perspectives connected to sustainability issues, topics, actions or strategies.

- [ ] I choose a project design for my **food** DIVERSITY project.
- [ ] I develop my **food** DIVERSITY project.

food DIVERSITY project concept map

What are your project interests?

For example, traditional plant foods for the future, plant growth, growing conditions, cells and structures of food plants

Choose **one** focus area and brainstorm ideas.

What will we need to research?

Do our ideas need to be narrowed down?

What will your project look like?

What is the goal of our project?

Who is the audience?

Who can help us?

What do we want the audience to learn?

What is your project question? Relate this to the "need to know" of your project concept.	ACTION

What are your research questions?	ACTION

What is the significant content for your project?	ACTION

What resources do you need? Which resources will you use?	ACTION

What will your final product look like?	ACTION