

Educator Guide:

Self-Guided Experience



How will we sustainably feed nearly 10 billion people by the year 2050?

Journey 2050 takes students on a **virtual simulation that explores world food sustainability** and answers the question above. The online program guides students through necessary instruction and allows students to make decisions on a virtual farm to witness their **impact on society, the environment and the economy at a local and global scale**. The lessons engage students with important concepts regarding sustainable agriculture. The online simulation contextualizes these concepts as students **experience the lives of three farm families in Kenya, India and Canada or the United States**. As students interact with each family, they learn the role of best management practices in feeding the world, reducing environmental impacts and improving social performance through greater access to education, medical care and community infrastructure.

Schools around the world can experience agriculture like it's never been taught before—for **FREE**. Educators do not need an agricultural background to facilitate the learning outcomes. Each lesson guide includes step-by-step instructions and the self-guided option allow students to complete the entire program independently. The program can be completed in **seven hours**. The program uses agricultural sustainability as the foundation to introduce topics of soil nutrients, water conservation, markets and economy, land use, geography and careers.

To engage with the online simulation, students will need a computer or tablet and internet access.

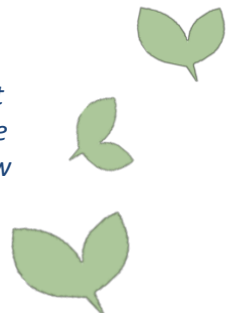
The program was **developed with teachers and sustainability experts to complement curriculum** and provide the critical thinking skills needed to address global food sustainability issues. The strongest ties are with science and social studies standards aimed at **grades 7-12** and higher.

A special thank you to Nutrien, Calgary Stampede, Alberta Canola Producers Commission, Nutrients for Life (USA and Canada), Agriculture in the Classroom Canada, National Agriculture in the Classroom Organization, and FFA for their contributions to this cutting-edge program that is constantly evolving to ensure it is science-based, factual, aligned to education standards and engaging!



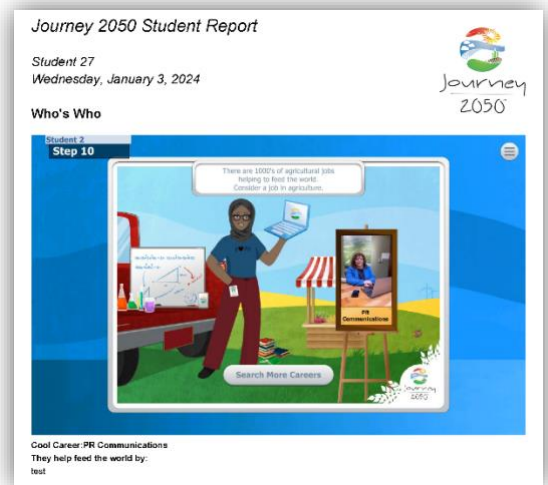
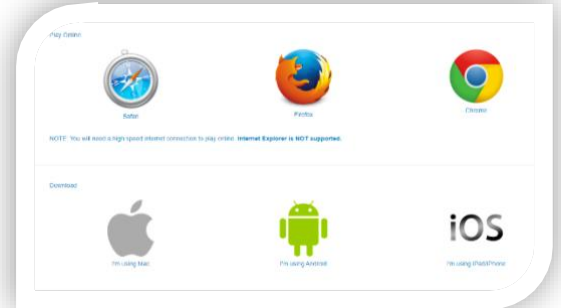
The goal of Journey 2050 is to engage students in positive discussions about the importance of sustainable agriculture, best management practices and innovations. Feeding the world is the responsibility of all. We need to think about the ways we act now so that future generations and our natural environment may prosper.

Food is life. Sustainable food is our future.



Preparation to Facilitate the Self-Guided Experience:

1. Visit the [Journey 2050](https://app.journey2050.com) website and register for a teacher account if you have not already done so (<https://app.journey2050.com/auth/teacher-signup/>).
2. Ensure each student has access to their own computer or tablet to play the game:
 - If playing on a computer, the game can be opened directly through a web browser such as Chrome, Safari or Firefox. Internet Explorer is no longer compatible.
 - If playing on a tablet or device, download the game for free from the App Store or Google Play.
 - View device options under Play/Download Game in your account (<https://app.journey2050.com/teacher/online/play-game/>)
3. Determine if you will be utilizing teacher reports. If students have an internet connection and enter your teacher code and their student number before playing, the game will generate a teacher report that you can view in your online account. These reports are typically used for grading or class discussions.
 - Your teacher code is found in a green box on the main page once you sign in. It is a four-digit code.
 - **Important:** If you are using reports, you will be responsible for providing students with a student number prior to playing in addition to the teacher code. This is required so you can identify student reports without the program collecting any student information. If you aren't using reports, students will go directly to gameplay and will not require your code or number.
 - Reports are generated based on each game. Level 1-4 is split into 4 topics for the lesson plans, but it is one game, so students must complete all 4 levels at once to generate a report. Level 5 and 6 are independent games so a report is generated after each one if the code is entered beforehand.



Find more information about reports and access reports [here](#).

4. Share the curriculum with students. It is recommended that you download the PDF guide for each lesson and provide it to each student through your online system (Blackboard, Canvas, Google Classroom, etc.) This PDF has fillable text boxes for students to record answers to questions as they move through the lesson. Instruct students to follow the step-by-step instructions to complete the lesson. Students also have the option to download directly from the website if preferred.

Program At-a-Glance:

These lesson plans focus on student exploration, using three-dimensional learning or a backwards design teaching method. The lessons follow the 5E Instructional Model: Engage, Explore, Explain, Elaborate, and Evaluate.¹

- Lesson 1: Sustainable Agriculture
- Lesson 2: Soil Nutrients
- Lesson 3: Water
- Lesson 4: Economies
- Lesson 5: Land Use
- Lesson 6: Careers
- Lesson 7: Technology and Innovation



Self-Guided Lesson Example:



LESSON 1

Sustainable Agriculture

You will be introduced to the concept of agricultural sustainability and begin exploring the core question, "How will we sustainably feed nearly 10 billion people by the year 2050?"



Handout Download



Video (4 mins) View



Game Level 1 (3 mins) Play



Lesson Video Guide

Optional Activities:

– Handout 1: World Population Download



Student do not need to register. They can access the Self-Guided lessons through the Journey 2050 website: <https://www.journey2050.com/students/#part-2>

Questions:

If you have questions or would like to speak with a professional agricultural expert such as an agronomist, feel free to contact us. We have a network of organizations excited to visit with you and your students about agriculture! Journey2050@nutrien.com

¹ <http://enhancinged.wgbh.org/research/eeeeee.html>

Lesson 1 Teacher Key: Sustainable Agriculture

- 2-1: 2050 is the year when it is estimated that there will be nearly 10 billion people on the earth.
- 2-2: The sustainability barrel represents all the factors that impact sustainability. They include social, economic, and environmental factors.
- 2-3: The ripple effect describes indirect impacts that choices or events have on other choices or events. It illustrates that each choice impacts something else –like a ripple in a pond.
- 3-1: Answers will vary (student's best guess).
- 3-2: Answers will vary (student's best guess).
- 4: Better medicine and better agriculture (any order).
- 5-1: Calculate according to today's date.
- 5-2: Calculations will vary.
- 7: Answers will vary.

Lesson 2 Teacher Key: Soil Nutrients

- 2-1: Nitrogen, potassium, and phosphorus. Soil nutrients can be replenished through fertilizers, manure, and organic sources/ compost.
- 2-2: By being healthy and thriving.
- 2-3: "Best Management Practices" describe the best way to accomplish a task according to the knowledge we have. They take into consideration a balance of influencing factors in society, the economy, and the environment.
- 2-4: The 4Rs represent the best-known method of applying nutrients to crops. Apply nutrients at the right place, the right time, the right rate, and using the right nutrient source.
- 3: The plant-based foods that we eat all grow in soil. The livestock that provide meat, milk, and eggs for us eat food that was grown in the soil. Successful agriculture relies on healthy soil.
- 5-1: Best management practices. Students' answers may vary based on their game decisions.
- 5-2: Answers will vary, but they likely saw a decrease in food production.
- 5c: Farmers can use the 4R Nutrient Stewardship program.

Lesson 3 Teacher Key: Water

- 2-1: 97%.
- 2-2: 31%
- 3-1: Water is used to irrigate crops, water livestock, sanitation, etc.
- 3-2: Pivot irrigation, flood irrigation, drip irrigation.
- 3-3: Conservation tillage, creating riparian areas and preserving wetlands, using seed varieties best suited for lower water use.
- 4: Answers will vary, but some answers you can expect include water, sunlight, nutrients, seeds, space, and acceptable climate.
- 6: Answers will vary.

Lesson 4 Teacher Key: Economies

- 2-1: Earning money and creating jobs.
- 2-2: A place where buyers and sellers meet to trade goods and services.
- 2-3: It leads to better and more education and provides opportunity for investments.
- 5: Answers will vary.

Lesson 5 Teacher Key: Land Use

- 1: 3/4 of the Earth's surface is water; 1/12 of the Earth's surface is inhospitable land (deserts, mountains, polar regions); 1/12 of the Earth's surface is habitable land (non-agricultural) used for houses, roads, public lands; 1/48 of Earth's surface is agricultural land used to grow crops for humans to eat; 3/48 of the earth's surface is agricultural land used to grow crops for livestock feed or to provide grazing for livestock that produce meat, milk, and eggs for humans to eat.
- 2-1: It's where everything is built, it's part of our ecosystems, and where we farm to provide our food.
- 2-2: Precise application of crop nutrients, watering at the best time of day, replenishing soil nutrients, planting hedge rows, etc.
- 5: Many acceptable answers found in video.

Lesson 6 Teacher Key: Careers

Answers will vary.

Lesson 7 Teacher Key: Technology and Innovation

Answers will vary.
