



What's Growing ON? Parent Guide



Dear Parent/Guardian:
 We would like to thank you for taking the time to work with your child on the *What's Growing ON?* project.

This project has been designed to help Ontario students and their families gain a better understanding about how grain crops are grown and the role of grain products in their daily lives.

The project is offered in Grade 3 classrooms across Ontario and will culminate with an interactive activity and visit to the Royal Agricultural Winter Fair in Toronto in November.



Growing

During the next few months your child will be growing a wheat or soybean plant, having started the seeds in the classroom. As the plant grows, your child will track the growth of the plant and the conditions under which the growth is occurring. The inside of this folder provides a place for your child to record this information. Once the plant has reached maturity, your child will harvest the grains and store them for later use.

Transplanting

All of the plants will need to be transplanted to a larger container or a garden. You will notice on the growth chart it indicates the stage of growth at which you need to transplant the plant. You will need to provide a larger container with a depth of 30cm to allow the roots to grow or a spot in a vegetable or flower garden to allow the roots adequate space to grow. Food for plants, fertilizer, can be used as the plant matures to ensure its health and strength.

Royal Agricultural Winter Fair

Every November the country comes to the city. The Grain Farmers of Ontario would like to invite you and your family to visit their display at the fair. Your child is encouraged to bring the grains harvested from their plants. At the fair, the Grain Farmers of Ontario will help your child process their grain into an endproduct. The display will help your child understand the wide variety of uses for both soybeans and wheat.

Thank you

There are 28,000 corn, soybean and wheat farmers in Ontario. The crops they grow cover 5 million acres of farm land across the province, generate over \$2.5 billion in farm gate receipts, result in over \$9 billion in economic output and are responsible for over 40,000 jobs in the province. It's a part of our province's heritage and future.

We want to thank you in advance for supporting your child in this project. We are very excited to be involved with the schools and to help our children gain a better understanding of the growing and processing of Ontario's grain products.

Ontario's agricultural community has a long standing tradition of supporting Ontario families. We look forward to working with you and your family.

See you at the Fair! -- Grain Farmers of Ontario

Web connections

Since this project is taking place in different communities across Ontario, a website has been set up so that students can track their plant's growth and compare their plant to those of other students participating in the project, and with what farmers are growing in their fields. Photos and videos of students plants and of farmers will be uploaded to the site regularly. A blog is linked to the website to allow students to interact with farmers.

Meet a grain farmer

As part of the project your child will have the opportunity to meet a grain farmer, either through a classroom visit by a local farmer or virtually through our website. Since your child will continue growing their plant over the summer months at home, there will also be an opportunity for your child to ask questions of a farmer through the blog set up on the website.

Care of plants		
	Soybeans	Wheat
Sun	Partial shade	Full sun
Water	Keep moist	some moisture
Food	Provide nutrients in soil	Provide nutrients in soil

www.GoodinEveryGrain.ca



Growing Soybeans										
Date										
Plant inside										
Plant outside										
Weather conditions										
High temperature										
Low temperature										

Seeds: Soybeans need moisture and nutrients to grow, just like other seeds. Farmers start the process in the spring after the first frost by tilling the land, adding fertilizer or organic material to it, and then using a planter to put seeds into trenches that are 4 cm deep. Once the seed is under the soil, it starts to germinate. The root emerges after one or two days, but you don't see small plants emerge from the soil for 5 to 10 days. It's a dicotyledon, meaning it has two sides to the seed.

Germination: Between the two sides of the seed is the start of a plant. Once the outer shell of the soybean breaks, both the radical, which becomes the root, and the plumule, which becomes the stalk

of the plant, are inside. When the hard outer shell of the soybean breaks, the plumule grows upward toward the sunlight and the radical grows out the bottom and eventually grows roots. To germinate, the seed needs warm soil, but it doesn't need sunlight, yet.

Roots: While the soybean develops roots and leaves, it still needs some form of nutrition. The nutrition and energy that the soybean uses comes from the bean itself. The bean contains all the nutrients the small plant needs until it can manufacture its own. Those same nutrients are available for any animal that eats soybeans, including humans if they eat the seed and don't plant it.

Growth: As plants grow, they convert the sun and minerals into energy to build cells that make them taller. The plants blossom between July and September. The flowers pollinate and small pods that contain soybeans develop.

Maturity: Soybeans start to mature as early as late September, depending on location. Final stages of the plant often occur a month later when leaves of the plant turn brown and fall off, exposing the matured pods of soybeans. At this point farmers use a piece of equipment called a "combine" to pick beans from the stalks and separate them from the pods and stems. The combine drops the soybeans into its container. The farmer later sells the soybeans.



Growing Wheat										
Date										
Plant inside										
Plant outside										
Weather conditions										
High temperature										
Low temperature										

Seeds: As a seed, wheat is equipped with everything it needs to sprout except for water and warmth. The seed contains the energy and nutrients needed to sprout. The seeds absorb water and send shoots sprouting through the soil. The shoot bears a leaf to capture sunlight for the wheat plant to convert into energy through photosynthesis. Roots sprout through the bottom of the seeds allowing it to absorb water and nutrients from the soil.

Shoots: As the shoot absorbs sunlight, water and minerals, the plant begins to grow and add leaves-averaging a new leaf about every five days. Further maturation of the plant causes the stems to elongate. Secondary shoots, called tillers, begin to form along the main shoot-tillers can also produce grain. As the plant further matures, tiny heads-tucked inside of the shoots begin to form at the tips of the tillers and the main shoot. After the formation of heads, any new tillers are unlikely to produce grain.

Grain: Further maturation causes the heads to emerge from the shoots. The wheat self-pollinates before the flower heads open. Flowering takes about five days. Moisture causes the heads to take a "dough-like" texture, but it will harden at maturity. The kernels spend the next couple of weeks storing starch, water and protein, and increasing to its mature size. The kernels spend a few more days hardening before eventually ripening at one of its many variants of brown.

