

Canola in the Classroom



Teacher's Guide (Saskatchewan Edition)

Science: Grades 1 - 3

Learning Expectations

All About Canola Plants

Grade 1, Science – Plants

Foundational Objective

Compare various plants, plant parts, and plant products.

Learning Objective

Identify the roots, stems, leaves, and flowers of plants.

The Canola Plant Web

Grade 1, Science – Plants

Foundational Objective

Compare various plants, plant parts, and plant products.

Learning Objective

Identify foods which plants come from.

Recognize some products other than foods which come from plants.

Canola Seed & Canola Oil

Grade 2, Science – Properties of Matter

Foundational Objective

Describe some characteristic properties of matter.

Learning Objectives

Recognize solids, liquids, and gases as states of matter.

Examine some of the properties of solids, liquids, and gases.

Parts of a Canola Plant

Grade 3, Science – Plant Structures & Adaptations

Foundational Objective

Explain how the structures of a plant help it survive.

Learning Objective

Identify the functions of roots, stems, leaves, and flowers.

Canola's Life Cycle

Grade 3, Science – Plant Structures & Adaptations

Foundational Objective

Demonstrate an understanding that plants grow and change and have distinct characteristics.

Learning Objective

Describe the changes that different plants undergo in their life cycles.



This Teacher’s Guide is designed to provide the teacher with a comprehensive resource that will assist students in learning about canola. The information provides a context for both teaching and learning. The student activities give the teacher direction for using the facts about this important crop in the Canadian economy. The Guided Inquiry tool should be used to guide your students towards asking these questions on their own.

Table of Contents

All About Canola Plants

Teacher Notes (1)	2
Teacher Notes (2)	3
Teacher Answer Key	4
Student Activity #1	5

The Canola Plant Web

Teacher Notes (1)	6
Teacher Notes (2)	7
Teacher Answer Key	8
Student Activity #1	9
Student Activity #2	10

Canola Seed & Canola Oil

Teacher Notes (1)	11
Teacher Notes (2)	12
Teacher Answer Key	13
Student Activity #1	14

Parts of a Canola Plant

Teacher Notes (1)	15
Teacher Notes (2)	16
Parts of a Canola Plant Booklet	17, 18
Student Activity #1	19

Canola’s Life Cycle

Teacher Notes (1)	20
Teacher Notes (2)	21
Teacher Answer Key	22
Student Activity #1	23
Student Activity #2	24

Teachers are granted permission to reproduce activities from this document for classroom use only. Reproduction for purposes other than classroom use, in any format, requires permission from SaskCanola.



All About Canola Plants - Teacher Notes (1)

Materials Needed:

1. Pencils
2. Crayons

Guided Inquiry:

1. What other products come from canola seed?
2. What makes canola different from other plants?

Teaching Strategies:

1. Discuss with the class the poem, "Chrissy the Canola Plant".
2. Discuss with the class the different parts of the canola plant that the poem talked about.
3. Discuss with the class the poem again and act out the corresponding actions. Repeat several times.
4. Students will label the parts of the canola plant in Student Activity #1.

Evaluation Strategies:

1. Evaluate Student Activity #1.

Extension Activities:

1. Create a theme day and wear yellow.



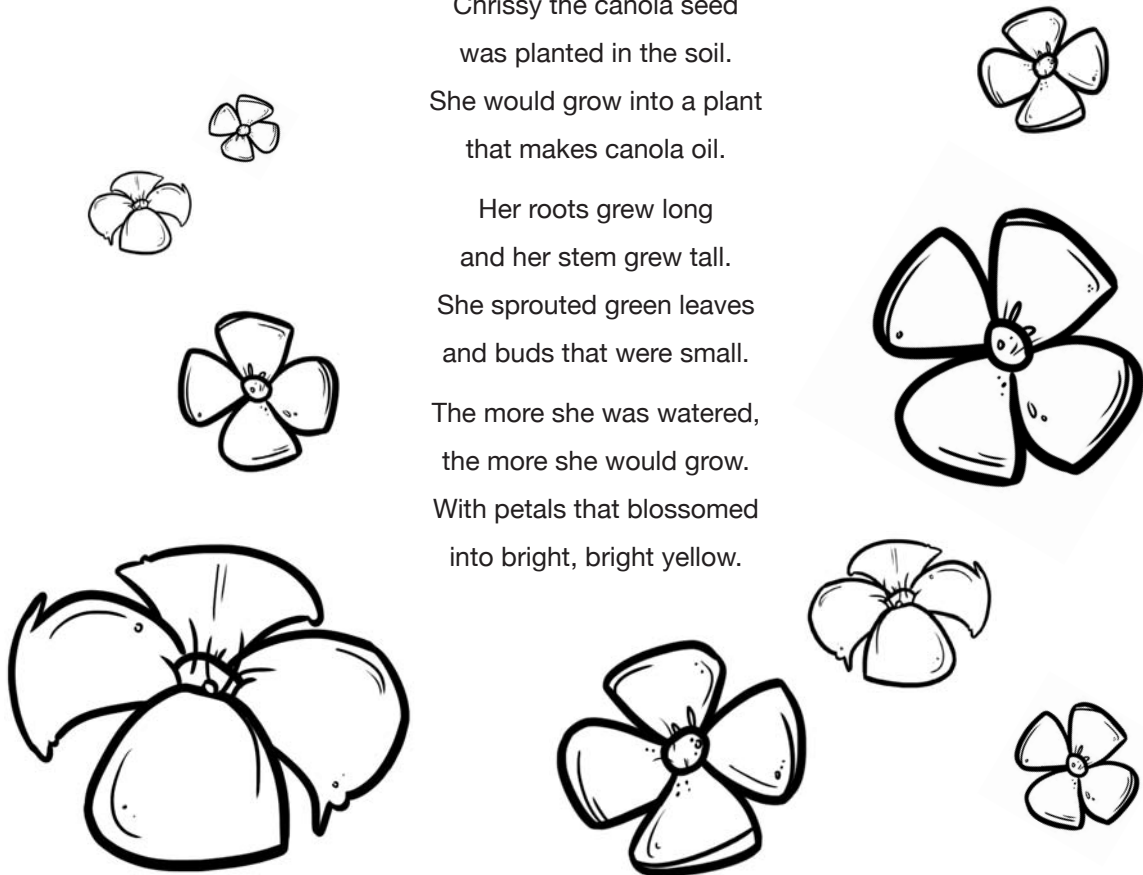
All About Canola Plants - Teacher Notes (2)

Chrissy the Canola Plant

Chrissy the canola seed
was planted in the soil.
She would grow into a plant
that makes canola oil.

Her roots grew long
and her stem grew tall.
She sprouted green leaves
and buds that were small.

The more she was watered,
the more she would grow.
With petals that blossomed
into bright, bright yellow.



“Chrissy the Canola Plant” Poem Movements (Fit in to the Correct Places in the Poem):

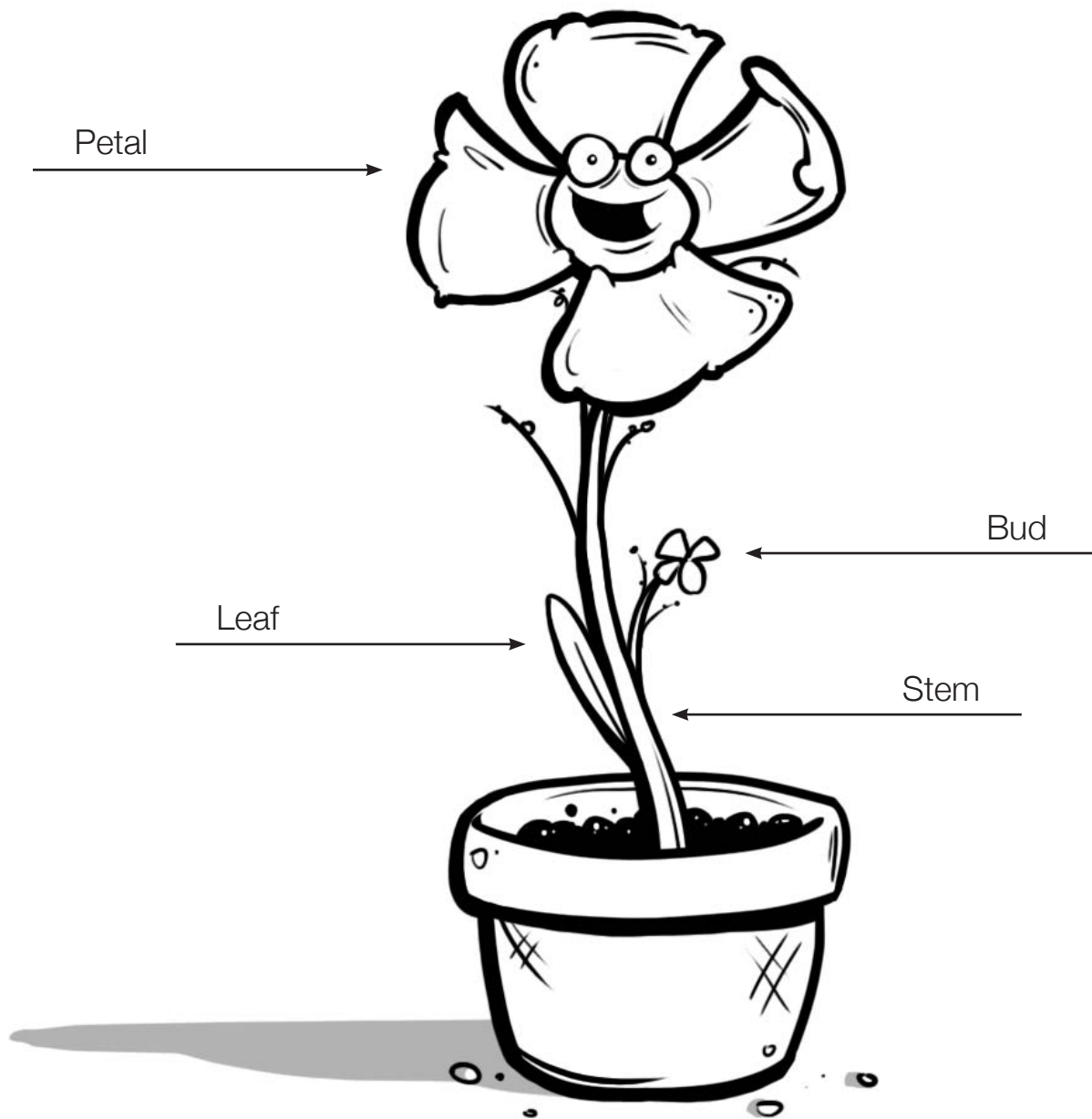
- > Students tuck in their limbs to resemble a seed.
- > Students stick out their legs to resemble roots.
- > Students stick out their hands to resemble small leaves and buds.
- > Students slowly stand up to resemble the plant growing and then spread out their arms to look like a full grown canola plant.



Chrissy the Canola Plant - Teacher Answer Key

Instructions:

Using the word box, label Chrissy the Canola Plant.



Canola Plant Parts Word Box

Petal

Stem

Bud

Leaf

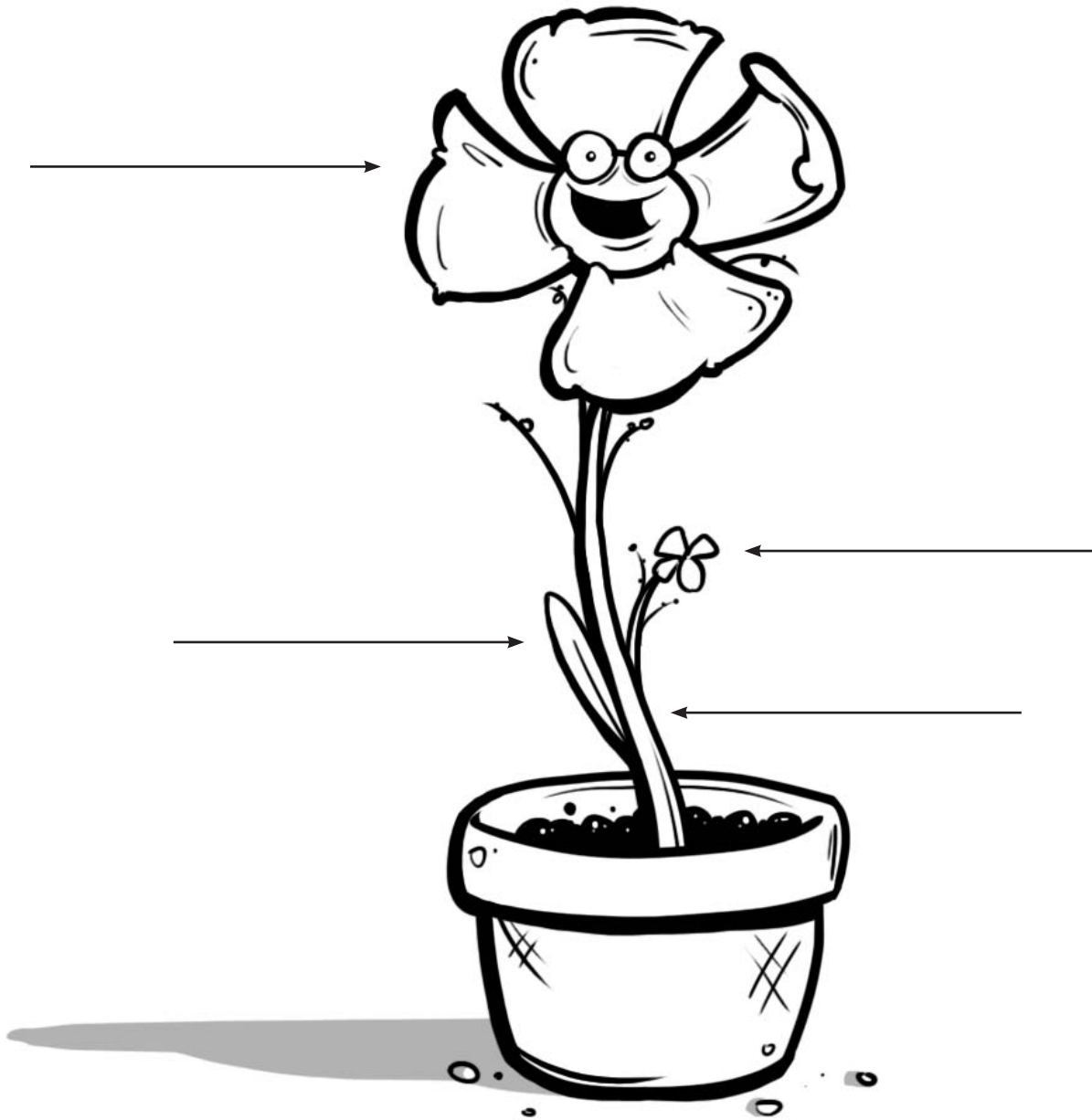


Chrissy the Canola Plant - Student Activity #1

Instructions:

Using the word box, label Chrissy the Canola Plant.

Name: _____



Canola Plant Parts Word Box

Petal

Stem

Bud

Leaf



The Canola Plant Web - Teacher Notes (1)

Materials Needed:

1. Pencils
2. Markers
3. Crayons

Guided Inquiry:

1. Is canola oil the healthiest commonly used cooking oil?
2. Why is canola oil healthy for me and my body?

Teaching Strategies:

1. Discuss with the class the variety of edible and non-edible products that canola plants make.
2. Discuss with the class the canola plant web.
3. Students will use Student Activity #1 to fill in the blanks in Student Activity #2.

Evaluation Strategies:

1. Evaluate Student Activity #2.

Extension Activities:

1. Create an awareness campaign for the school or community on the health benefits of canola oil.



The Canola Plant Web - Teacher Notes (2)

Information:

What is a food web?

A food web is community of organisms where there are several interrelated food chains.

What is canola oil?

Canola oil is the healthiest of all commonly used cooking oils. It is lowest in saturated fat, high in cholesterol-lowering mono-unsaturated fat and the best source of omega-3 fats of all popular oils.

What is canola meal?

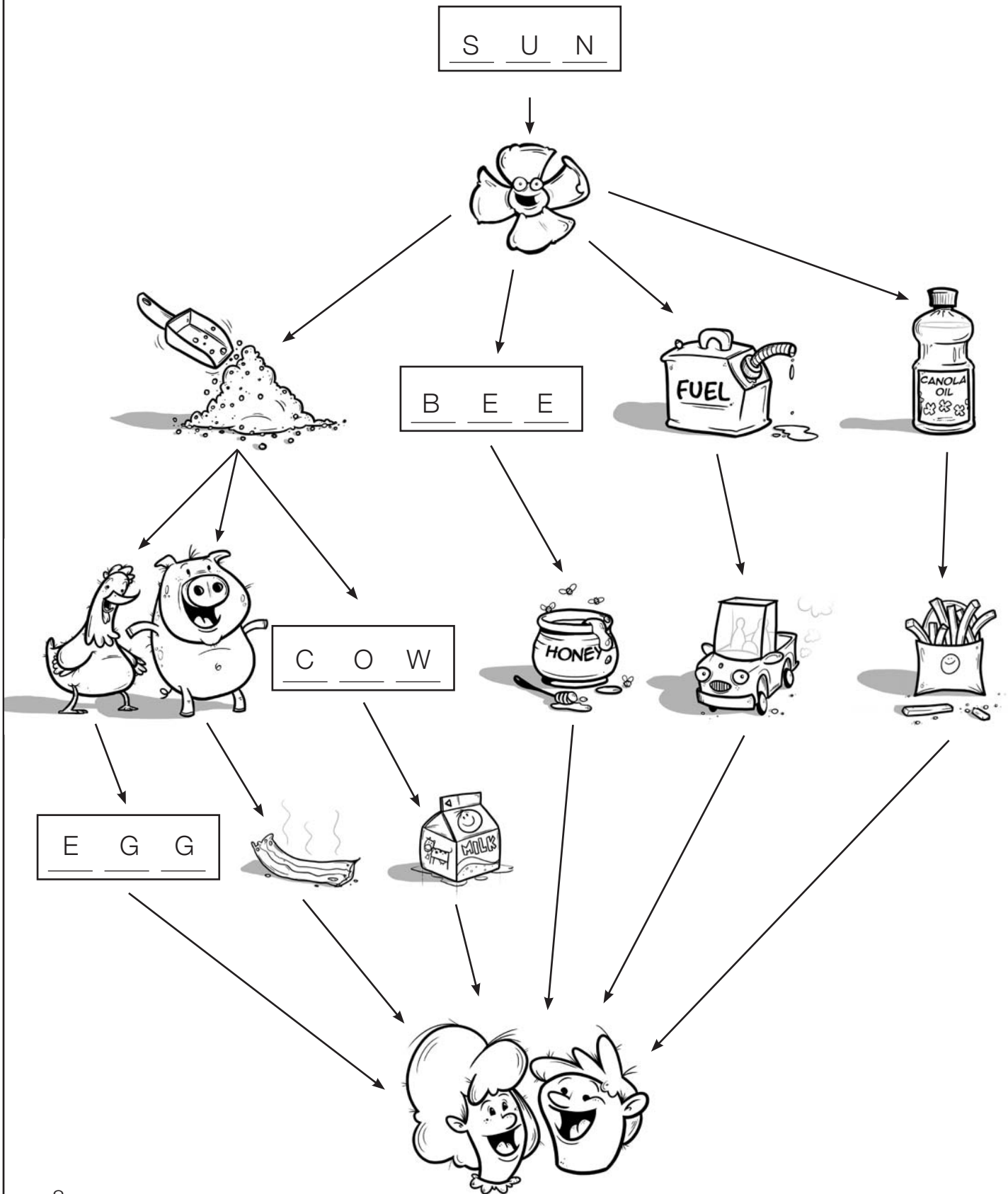
Consists of the meal obtained after the removal of the oil and is used to feed livestock.

What is bio-diesel fuel?

Bio-diesel is a diesel fuel or fuel additive derived from a renewable resource such as plants that can be grown domestically. The oil from the canola seed makes bio-diesel.

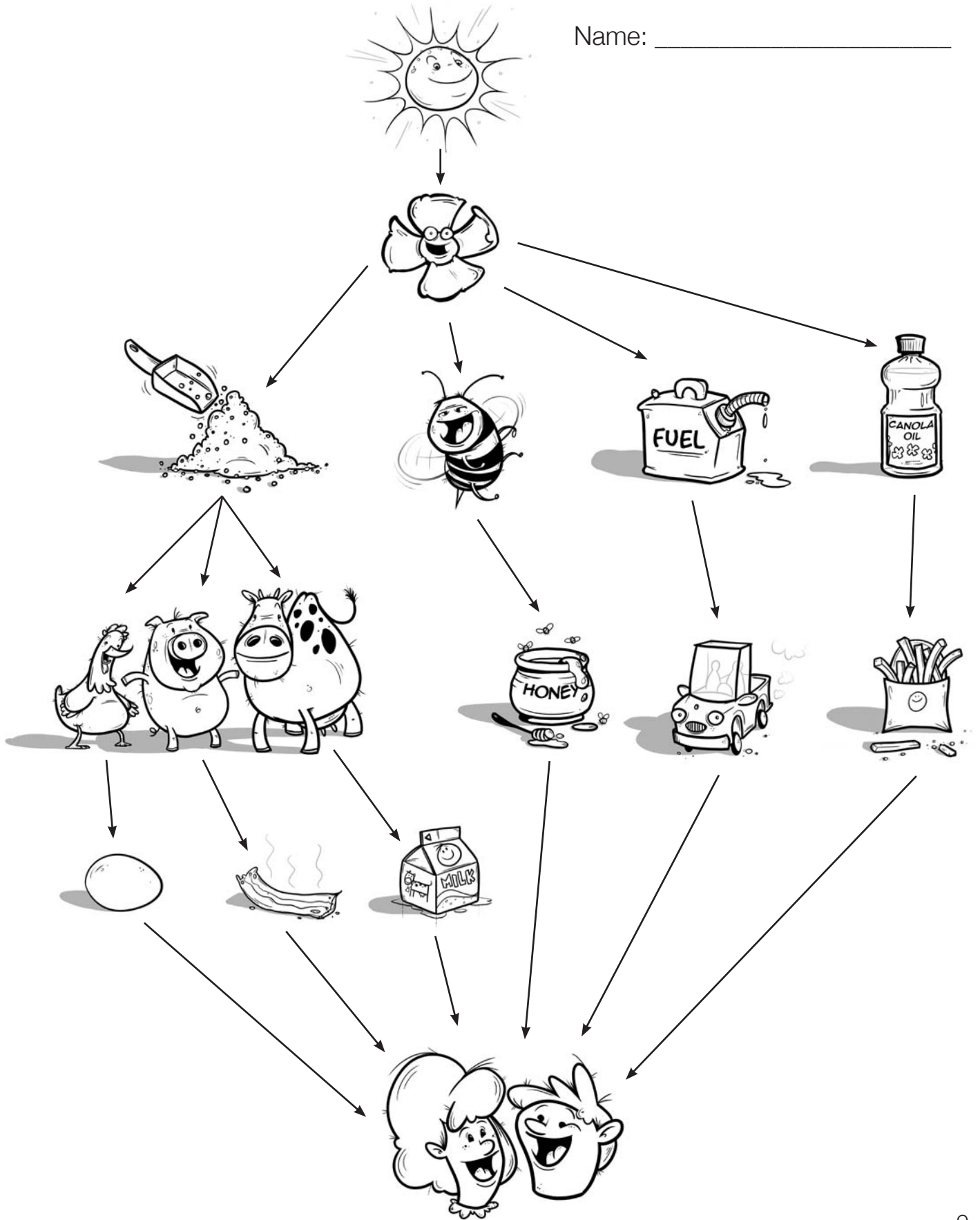


Canola Plant Web - Teacher Answer Key



Canola Plant Web - Student Activity #1

Name: _____



Canola Plant Web - Student Activity #2

Name: _____

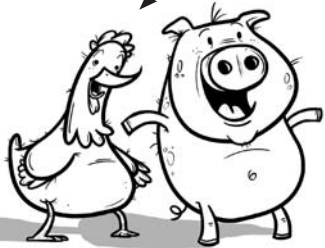
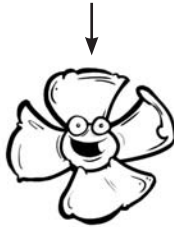
Instructions:

Fill in the blanks with words from the Canola Plant Web Word Box.

Canola Plant
Parts Word Box

Bee Egg

Cow Sun



Canola Seed & Canola Oil - Teacher Notes (1)

Materials Needed:

1. Canola crush kit
 - > To obtain additional canola crush kits, contact SaskCanola.

Guided Inquiry:

1. When I grow up, could I get a job crushing canola seed?
2. What will happen if I put canola oil in the fridge?

Teaching Strategies:

1. Discuss with the class the definitions of liquids and solids.
2. Students will give examples of liquids and solids.
3. Using Student Activity #1, students will practice their knowledge of liquids and solids.
4. As a class, use a canola crush kit to make canola oil.

Let's Make Oil!

Use the roller to crush the canola seeds. Once the seeds have been crushed, turn the paper over and examine the canola oil.

Evaluation Strategies:

1. Evaluate Student Activity #1.

Extension Activities:

1. If possible, plan a field trip to a farm that grows canola.
2. Using the computer lab, watch the "Diary of a Field" video on the SaskCanola website.



Canola Seed & Canola Oil - Teacher Notes (2)

Information:

What is a liquid?

A liquid is one of the three classical states of matter. Like a gas, a liquid is able to flow and take the shape of a container; but like a solid, it resists compression.

What is a solid?

A solid is one of the three classical states of matter. Solids resist changes in shape or volume. Unlike a liquid, a solid object does not flow to take on the shape of its container, nor does it expand to fill the entire volume available to it like a gas does.

Canola Facts

- > Nothing goes to waste when crushing canola seed. Canola meal remains after the oil has been removed from the seed. It is an excellent source of protein.
Canola meal is fed to livestock including horses, chickens, cows, sheep, pigs, and farmed fish. You can also find canola meal in dog and cat food.
- > Canola oil is found in many of the foods we eat including salad dressing, margarine, cookies, and granola bars.
- > Canola oil can be found in non-edible products such as lipstick, hand cream, soap, lip balm, bath oils, sunscreen, lotion, and print ink.



Canola Seed & Canola Oil - Teacher Answer Key

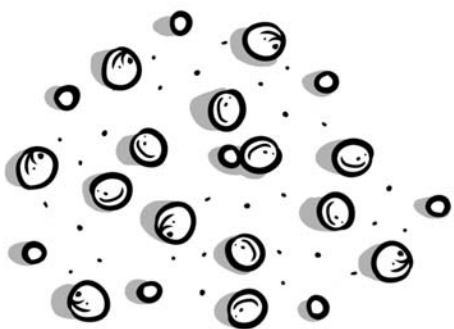
1. Solid or Liquid



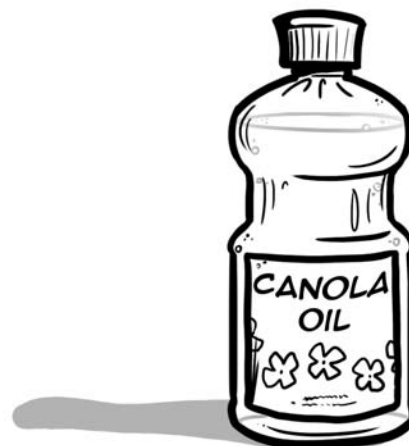
2. Solid or Liquid



3. Solid or Liquid



4. Solid or Liquid



Canola Seed & Canola Oil - Student Activity #1

Name: _____

1. Solid or Liquid



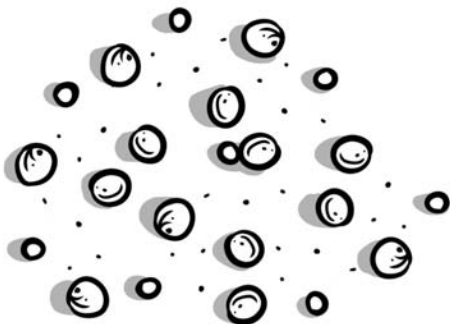
Instructions:

Look at each picture. Is it a solid or a liquid?
Circle your answers.

2. Solid or Liquid



3. Solid or Liquid



4. Solid or Liquid



Parts of a Canola Plant - Teacher Notes (1)

Materials Needed:

1. Scissors
2. Markers
3. Gluestick
4. Stapler

Guided Inquiry:

1. What are some distinct characteristics of a canola plant?

Teaching Strategies:

1. Discuss with the class the uses for canola seed.
2. Discuss with the class the definitions of the different parts of a canola plant.
3. Using Student Activity #1, students will practice their knowledge of the parts of a canola plant.

Evaluation Strategies:

1. Evaluate Student Activity #1.

Extension Activities:

1. If possible, plan a field trip to a farm that grows canola.



Parts of a Canola Plant - Teacher Notes (2)

Information:

What is canola?

Canola is a plant that farmers grow. Canola seeds are used to produce edible oil and canola meal is used to produce livestock feed.

What are roots?

The roots hold the canola plant in the ground. The roots also take in water and nutrients for the plant's growth.

What are flowers?

The flowers are the part of the canola plant that makes the seeds. The flowers are yellow in color.

What is a stem?

The stem supports and elevates the leaves and flowers. The stem also stores the plant's nutrients.

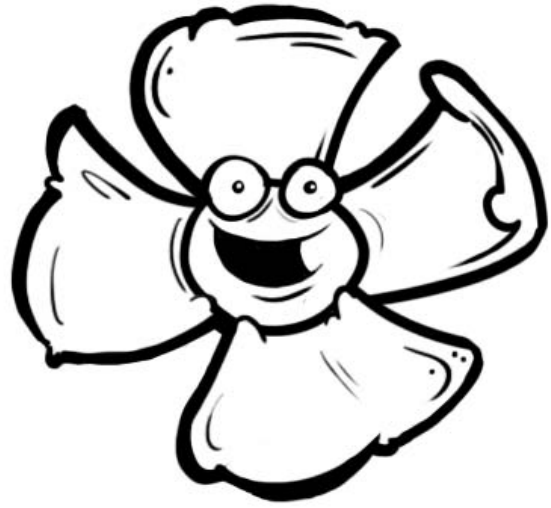
What are leaves?

The leaves make food for the canola plant. The leaves also take in carbon dioxide through tiny openings.



CUT ALONG DOTTED LINES

Parts of a Canola Plant



Name: _____

The Roots

- > hold the canola plant in the ground.
- > take in water and nutrients for the plant's growth.

The Flowers

- > are the part of the canola plant that makes the seeds.
- > are yellow on a canola plant.

#3

#4



The Stem

- > holds the canola plant parts above the ground.
- > has tiny tubes to transport water and nutrients to the canola plant's parts.

My Canola Plant

#1

#6

A Canola Plant

The Leaves

- > make food for the canola plant.
- > take in carbon dioxide through tiny openings.

#5

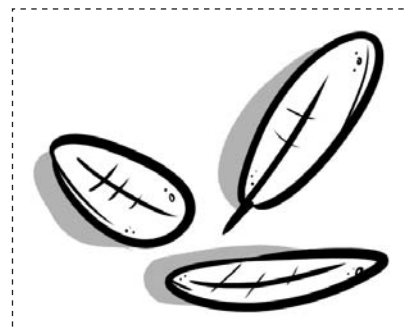
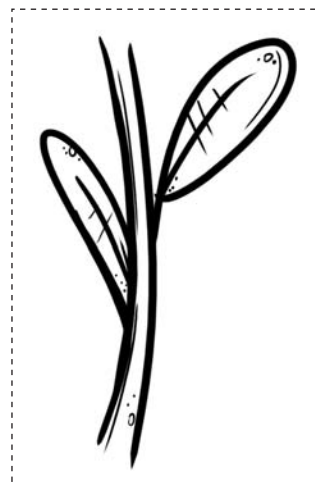
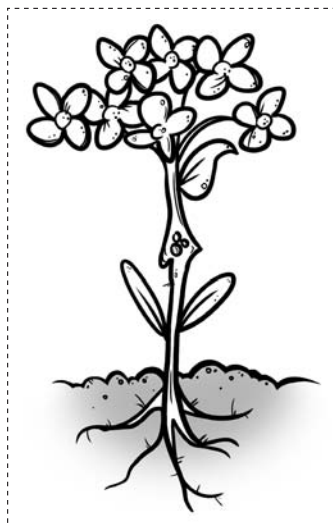
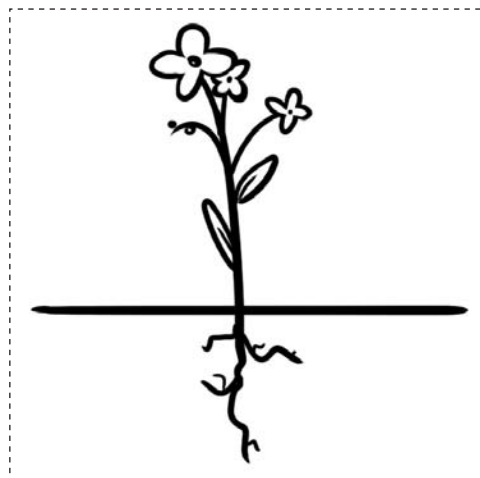
#2



Parts of a Canola Plant - Student Activity #1

Instructions:

Cut out the five pictures and glue them onto the correct page in your booklet, then draw and color your own picture of a canola plant. Then cut along the dotted lines, arrange the pages in order, fold the pages in half, and put two staples down the fold to hold your booklet together.



Canola's Life Cycle - Teacher Notes (1)

Materials Needed:

1. Markers
2. Pencils
3. Crayons

Guided Inquiry:

1. What kind of jobs are available to me in the canola industry?
2. Can farmers save canola seed from the previous crop year and plant canola again?

Teaching Strategies:

1. Using the information in Student Activity #1, students will fill in the blanks.
2. Discuss with the class the life cycle of the canola plant from beginning to end.

Evaluation/ Assessment Strategies:

1. Evaluate Student Activity #1.

Extension Activities:

1. Obtain a sample of canola seed. Discuss with the class where the seed fits into the canola plant life cycle.



Canola's Life Cycle - Teacher Notes (2)

Information:

What is a seed?

A seed is a small embryonic plant enclosed in a covering called the seed coat.

What is a seedling?

A seedling is a young plant developing out of a plant embryo from a seed.

What is a bud?

In botany, a bud is an undeveloped or embryonic shoot and normally occurs in the axil of a leaf or at the tip of the stem.

How does canola grow?

- > On the farm these plants grow to a height of one to two meters. The yellow flower produces seed pods that are about 5 centimeters in length. Each seed pod contains 20 to 30 round seeds. These tiny seeds are crushed to extrude canola oil.
- > From germination to seed production, the life cycle of a canola plant takes about 3 1/2 months, depending on temperature, moisture, sunlight, and soil fertility.
- > Canola is a cool season crop. It grows particularly well on the prairies, where cool night temperatures allow it to recover from hot days.



Canola's Life Cycle - Teacher Answer Key

Instructions:

Read the facts about canola. Find the missing words and fill in the blanks.

The word canola is a blend of the words Canadian and oil. Canola flowers are yellow in color. Canola is a plant that farmers grow. Farmers sell canola seed to grain elevators or to canola crushing plants. The canola seeds make canola oil, animal meal, and bio-diesel fuel. Canola oil is healthy for you.

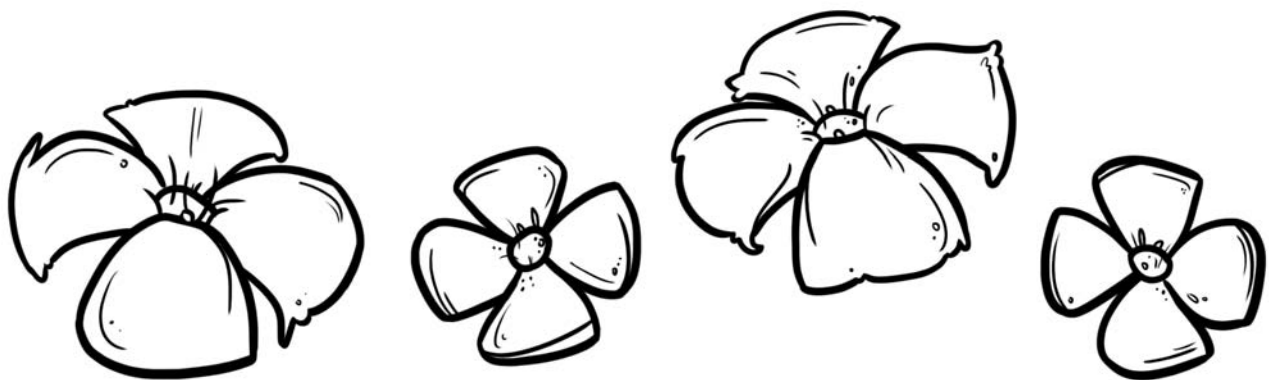
Canola:

is a P L A N T that farmer's grow.

flowers are Y E L L O W .

seeds make canola O I L .

oil is H E A L T H Y for you.



Canola's Life Cycle - Student Activity #1

Name: _____

Instructions:

Read the facts about canola. Find the missing words and fill in the blanks.

The word canola is a blend of the words Canadian and oil. Canola flowers are yellow in color. Canola is a plant that farmers grow. Farmers sell canola seed to grain elevators or to canola crushing plants. The canola seeds make canola oil, animal meal, and bio-diesel fuel. Canola oil is healthy for you.

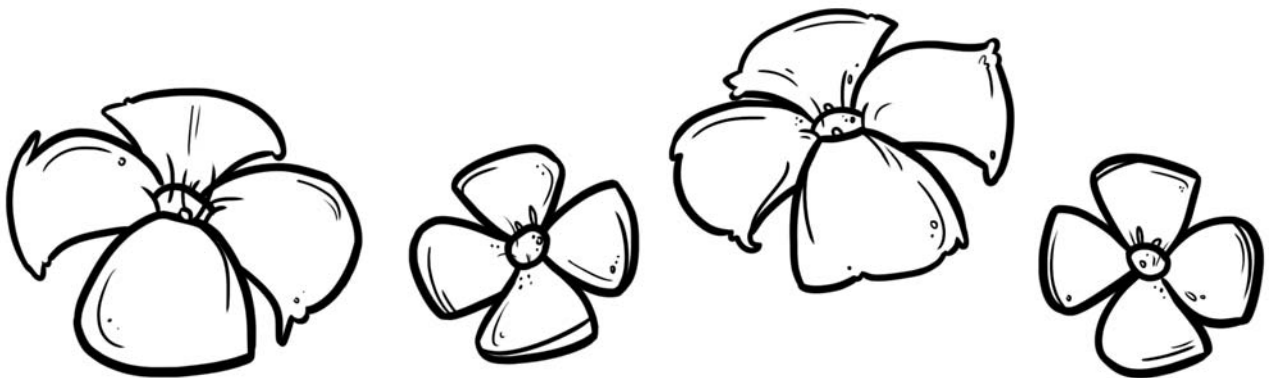
Canola:

is a _____ that farmer's grow.

flowers are _____ .

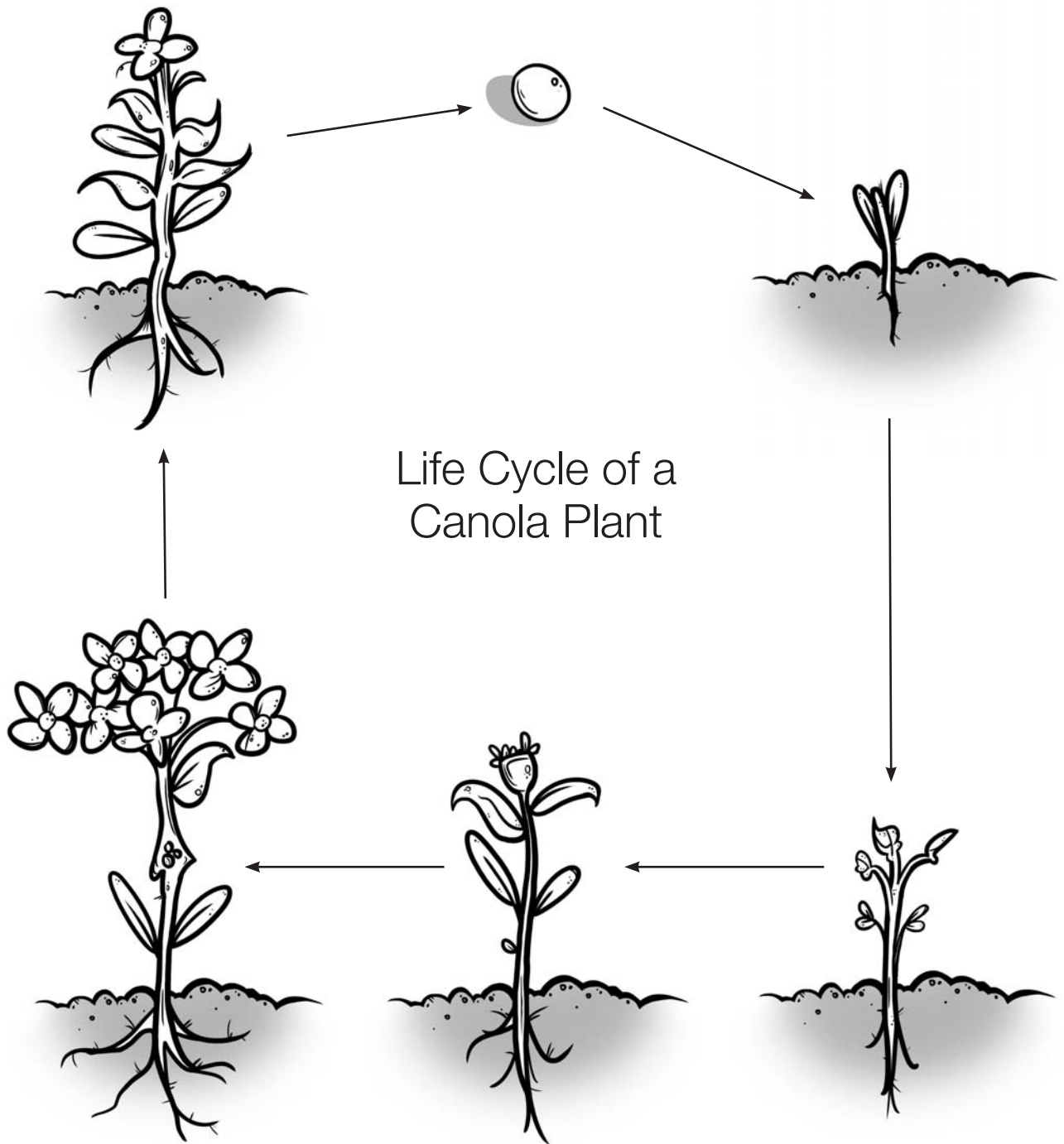
seeds make canola _____ .

oil is _____ for you.



Canola's Life Cycle - Student Activity #2

Name: _____



For More Information

There are many websites where you can find more information about canola in Canada:

SaskCanola
www.saskcanola.com

Agriculture in the Classroom
www.aitc.ca

Canola Council of Canada
www.canolacouncil.org

CanolaInfo
www.canolainfo.org

SaskCanola would like to thank Ellen Hinz for her work in developing the Canola in the Classroom Teacher's Guide.

Additional copies of Canola in the Classroom can be obtained from SaskCanola.

© 2010 SaskCanola. All rights reserved.

Teachers are granted permission to reproduce activities from this document for classroom use only. Reproduction for purposes other than classroom use, in any format, requires written permission from SaskCanola.



212 – 111 Research Drive, Saskatoon, SK S7N 3R2

P: (306) 975-0262 W: www.saskcanola.com E: info@saskcanola.com





Thanks for taking the time to learn about canola.