



DON'T JUDGE A KIWIFRUIT BY ITS SKIN

Your kiwifruit, often shortened to kiwi, may look drab on the outside, but inside, it has brilliant green or yellow flesh packed full of nutrients: more vitamin C than an orange, and more potassium than a banana. You can even eat your kiwi whole, like a peach – fuzzy skin and all!

A FARMER WITH A FANCY NAME

BC's kiwifruit farmers are also called viticulturists, because kiwifruit grow on vines (*viti* comes from the Latin word for vine; *culturist* means "to grow").



A YEAR IN A KIWIFRUIT VINEYARD

In **SPRING**, kiwifruit vines start their growing season. Flexible vines snake up the sturdy wooden trellises built to support them. By mid-June, they're covered in blossoms, but only for 10 days. Kiwis need cross-pollination to produce fruit, so bees have a short time to do their job. Farmers bring in beehives filled with thousands of bees to help get the job done in time.

In **EARLY SUMMER** these vigorous vines grow a lot – as much as 3.5 metres! Top branches wind together to create a canopy. Farmers remove large leaves so sunlight can reach the fruit. Growing vines need a lot of water: 20 litres per day. Sometimes the farmer needs to irrigate.

LATE SUMMER, the vine is putting most of its energy into developing its fruit. Farmers keep a careful lookout for problems, like pests and critters that could harm the fruit or vines.

MID FALL – usually late October through early November – is harvest time. Kiwis need a long season to ripen and are left on the vine as long as possible. Farmers might wrap the young plants to protect them from an early frost. A mature vine can produce up to 1,000 kiwifruits, and each one is picked by hand. Like pears, kiwifruit are harvested before they are ripe and ripen in cold storage.

WINTER is a time for resting. Kiwifruit vines will die if the temperature goes below -18°C, so farmers may turn on overhead sprinklers to cover the vines in a protective layer of ice.



MALE AND FEMALE PLANTS

Most fruit plants are **monoecious**, which means that every plant has both male and female parts, and every plant can produce fruit. Some, like kiwifruit, are **dioecious**, meaning a single plant has only male or female parts. Only female kiwi plants produce fruit, but male plants are needed to pollinate the female plants. Farmers plant eight female kiwi plants for every one male plant in their vineyards.

How do they tell them apart? Male flowers have yellow, pollen-filled centres to attract pollinators. Female flowers are larger, but they don't have any pollen. In fall, female vines will produce fruit and the male vines will be empty!



SOCIAL STUDIES ACTIVITY: A SEASONAL STORY

Curriculum Connection: Social Studies - grades 4 to 7: Sequence objects, images, or events, and recognize the positive and negative aspects of continuities and changes in the past and present. Differentiate between intended and unintended consequences of events, decisions, or developments, and speculate about alternative outcomes. First Peoples Principles of Learning: Learning involves recognizing the consequences of one's actions.

Kiwifruit are a sun-loving but cold-sensitive crop, so farmers need to keep a close eye on when their vines grow, rest, and bear fruit year-round. Review "A Year in a Kiwifruit Vineyard" on the student side of the sheet with your class, then have students create a 12-month chart (see example below) that shows kiwifruit plant growth and care throughout the year.

Month	Season	Growth & Care
January	Winter	Vines rest. Workers watch for extreme weather.
February	Winter	...
March	Spring	Vines start to grow. Leaves and buds develop.
April	Spring	...
May	Spring	...
June	Summer	Vines are pruned and large canopy leaves are removed.
July	Summer	...
August	Summer	...
September	Fall	Harvest time! Young plants are wrapped, if there's an early frost.
October	Fall	...
November	Fall	...
December	Winter	If it's below zero, overhead sprinklers are turned on to form a protective layer of ice.

MATH ACTIVITY

Curriculum Connection: Mathematics - grades 4 to 7: Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving. Visualize to explore mathematical concepts. Develop and use multiple strategies to engage in problem solving.

Farmers plant 8 female kiwi plants for every 1 male plant in their vineyards. If there are 160 female plants in a vineyard, how many male plants does a farmer need?

Answer:

8:1

160: ___

$160 \div 8 = 20$ The farmer needs 20 male plants.

A farmer needs to create a map showing how to plant 180 kiwifruit plants. How many rows are there going to be? How many plants are in each row? How many female plants and how many male plants are in each row? Hint: use an array with a repeating pattern to map it out.

Sample Answer: X=females O=males

XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O (8 x 5 = 40 females) (1 x 5 = 5 males)

XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O

XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O

XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O XXXXXXXX O

SOCIAL STUDIES ACTIVITY: A SHARING LADDER

Curriculum Connection: Social Studies - grades 4 to 7: Exchange ideas and perspectives to build shared understanding. Apply a variety of thinking skills to gain meaning from texts. Develop and apply expanding word knowledge. First Peoples Principles of Learning: Learning involves patience and time.

Divide students into two lines and have them face each other. Ask students to think for 30 seconds about what they know, wonder, and learned about kiwifruit. Have the students in one line share their thoughts with the student standing directly opposite them. Then, have the other line do the same. Now it is time to "climb" up or down the ladder. Choose the student at the front of one line to run down the ladder and stand at the end. That student bumps all the other students up one "rung," and now everyone has a new partner. Have students repeat the thinking and communicating process with their new partners. Once students have had four to five different partners, have them draw a K-W-L chart to list the information they collected from their conversations.

Kiwifruit		
What I know	What I wonder	What I learned
A kiwifruit is brown on the outside and green or yellow on the inside.	How did the kiwifruit get its name?	There are male and female plants, and only the females grow fruit.