

Get ready!

1 Before you read the passage, talk about these questions.

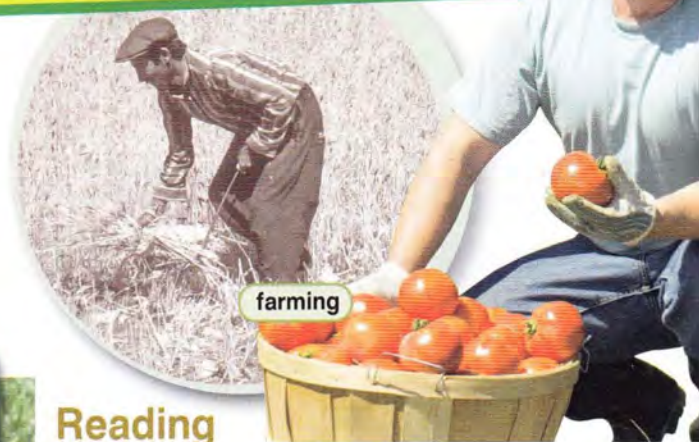
- 1 When did farming first begin in your country?
- 2 What did farmers first grow in your country?

Chapter 1 The Development of Agriculture

Agriculture began in the area known as the Fertile Crescent. The area is a hot, dry desert. But it has two of the requirements for **farming**: good soil and a **water supply**.

Many early farmers used the Nile River as a water supply. The Nile River floods at the same time every year. Farmers **planted crops** before the floods. This helped their plants to survive in the desert. Later, farmers created **irrigation ditches**. They moved water from the Nile River to their fields. They could **cultivate** crops any time of the year and **harvest** extra food.

Producing extra food was important. Later, farmers fed animals with it. These **domesticated** animals became another important part of agriculture.



Reading

2 Read the textbook passage. Then, mark the following statements as true (T) or false (F).

- 1 Crops cannot grow in deserts.
- 2 The Nile River floods every year.
- 3 Farmers raised animals before plants.

Vocabulary

3 Match the words (1-6) with the definitions (A-F).

- | | |
|--|--|
| 1 <input type="checkbox"/> agriculture | 4 <input type="checkbox"/> produce |
| 2 <input type="checkbox"/> crop | 5 <input type="checkbox"/> domesticate |
| 3 <input type="checkbox"/> cultivate | 6 <input type="checkbox"/> plant |

- A a large group of cultivated plants
 B to put seeds in soil
 C growing plants and raising animals
 D to make something
 E to raise a crop from seeding to harvest
 F to tame an animal

4 Read the sentence pair. Choose where the words best fit the blanks.

- 1 **water supply / irrigation**
 A The river is the farmer's _____.
 B _____ helps farmers grow crops in areas with little rainfall.
- 2 **harvesting / farming**
 A _____ includes raising animals and crops.
 B Farmers wait until crops are mature to start _____.

5 Listen and read the text book passage again. Then, say three things you have learnt from the text.



Listening

6 Listen to a conversation between a student and teacher in a history class. Choose the correct answers.

1 What is the conversation mainly about?

- A a way to predict floods
- B an early irrigation method
- C the number of early farmers
- D the most common early crops

2 How did farmers control water?

- A They put gates in ditches.
- B They filled ditches with dirt.
- C They carried water in buckets.
- D They planted far from the river.

7 Listen again and complete the conversation.

Student: 1 _____, Mrs. Anderson. I have a question about the first farmers.

Teacher: Great. What is it?

Student: Well, they were in a desert. How did they irrigate their 2 _____?

Teacher: Oh, with 3 _____. They connected their fields and the Nile River.

Student: Okay. So, 4 _____ moved through the ditches to the fields.

Teacher: Exactly.

Student: Then, I have another question. How did they 5 _____ the water?

Teacher: The ditches had 6 _____. They opened and water flowed through.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Excuse me.

How did early farmers ...

They connected ...

Student A: You are a student learning about early agriculture. Ask Student B about:

- water supply
- watering fields
- controlling water

Student B: You are a History teacher. Answer Student A's questions.

Writing

9 Use the conversation from Task 8 to fill out the student's notes.

Name: _____ Date: _____

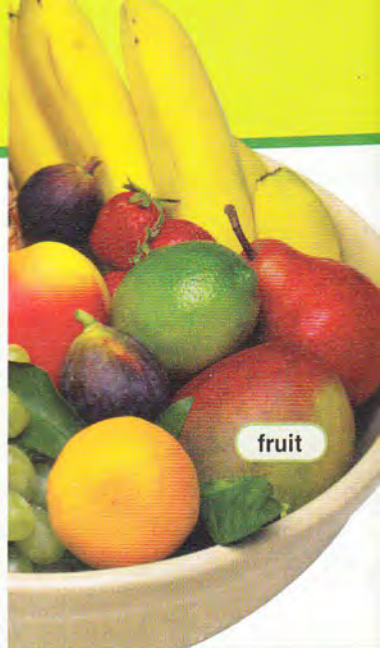
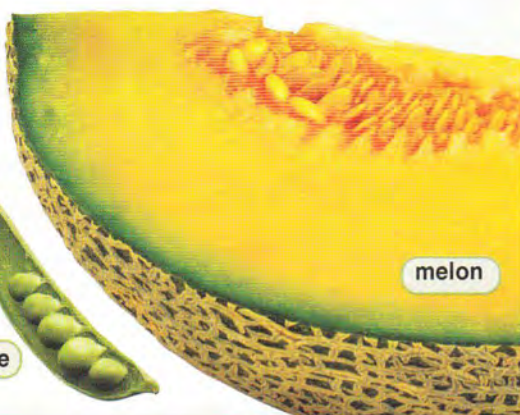
Class: _____

Subject: _____

Farmers got water from _____

Water came to the fields in _____

They controlled water by _____



Support your local farmers!

Come to the **farmer's market** this Saturday, 8AM-3PM on Main Street.

This year's harvest is the best yet!

JUNE 10

FRESH FOOD

Buy fresh **fruit** and **vegetables** for a good price!

Fruit: Delicious **melons**, strawberries, and blueberries.

Vegetables:

Fresh broccoli, peas, and lettuce.

We sell **tubers** and **legumes** too!

*This week we have Thompson's Granola. Thompson **cereal** crops are grown on a nearby farm.

CLOTHING

We offer some **industrial** crop products, such as **hemp** shoes, shirts, and hats.

WE HOPE TO SEE YOU ON SATURDAY!

Get ready!

- 1 Before you read the passage, talk about these questions.

- 1 What are your favorite fruits and vegetables?
- 2 What non-food products come from plants?

Reading

- 2 Read the advertisement. Then, fill in the blanks with the correct items.

- 1 Available fruits:

- 2 Available vegetables:

- 3 Cereal products:

- 4 Industrial crop products:

Vocabulary

- 3 Match the words (1-6) with the definitions (A-F).

- | | |
|---------------|-----------------------|
| 1 ___ harvest | 4 ___ tuber |
| 2 ___ legume | 5 ___ cereal |
| 3 ___ melon | 6 ___ farmer's market |

- A a crop that grows underground
 B a crop that produces grain
 C a crop that has pods
 D crops that have been gathered
 E a type of large, sweet fruit
 F a group of farmers selling crops

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What types of meat come from animals?
- 2 What other products come from animals?



More than a Meal

We rely on animals for a number of products. Some are more obvious than others. Animals' **milk** and **meat** provide us with **protein**. We make clothing and furniture with wool and leather. In addition, there is a long list of animal **by-products**. We use them every day. But we don't always know it.

We **render fat**, or **tallow**, into tires, soaps, and candles. Marshmallows, buttons, and tape include **bones** and **hooves**. Wool is often used in carpet. Even baseballs use animal products.

Animal by-products are found in unexpected places. Thanks to rendering, very little goes to waste. Meat is just one of many products that we take from animals.

Reading

2 Read the magazine article. Then, choose the correct answers.

- 1 What is the article mainly about?
 - A Animals that only produce meat
 - B The most popular types of meat
 - C Products made from animals
 - D Waste products of rendering
- 2 Which of the following is NOT a by-product?

A fat	C hooves
B bone	D protein
- 3 What is true of rendering?
 - A It limits waste.
 - B It is a by-product.
 - C It provides protein.
 - D It is in marshmallows.

Vocabulary

3 Read the sentence pair. Choose where the words best fit the blanks.

1 **wool / milk**

- A _____ is an important food source.
 B Many clothes are made of _____.

2 **protein / leather**

- A _____ is often used to cover furniture.
 B Plant products and meat contain _____.

3 **meat / by-products**

- A Humans have always used animals for _____.
 B _____ are used in many common products.

4 Write a word that is similar in meaning to the underlined part.

- Too much oily substance from plants and animals is unhealthy.
_ _ _ _
- Hard materials that give a body structure are a by-product.
_ o _ _ s
- The hard feet of animals are used to make tape.
h _ _ v _ _
- Soap is made by melting animal fat.
r _ _ _ _ _ i n g
- Fat that is used to make candles is also used in soap.
_ a _ _ o w

5 Listen and read the magazine article again. What happens to animal fat before it is used to produce soaps?

Listening

6 Listen to a conversation between a manager and a developer at a meeting. Mark the following statements as true (T) or false (F).

- The new product has no extra chemicals.
- The all-natural soap will be expensive.
- Tallow is rarely used in soap.

7 Listen again and complete the conversation.

Manager: 1 _____ . We have a new product to sell. Miss Smith will tell us about it.

Developer: Okay. Customers want natural products, right? So we made an all-natural soap.

Manager: What 2 _____ by "all-natural"?

Developer: There are no extra 3 _____ . It's just the basic ingredients.

Manager: Sounds interesting. Will it be 4 _____ ?

Developer: No. After all, the main ingredient is tallow.

Manager: 5 _____ . What's tallow?

Developer: Oh, tallow is basically animal fat. It's used in 6 _____ .

Manager: And it's cheap?

Developer: Very. It's a by-product that few people use.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

We have a new product.
What do you mean by ...
The main ingredient is ...

Student A: You are a salesman. Ask Student B about:

- a new product
- ingredients
- price

Student B: You created a new product that uses animal by-products. Answer Student A's questions.

Writing

9 Use the conversation from Task 8 and the magazine article to fill out the product description.

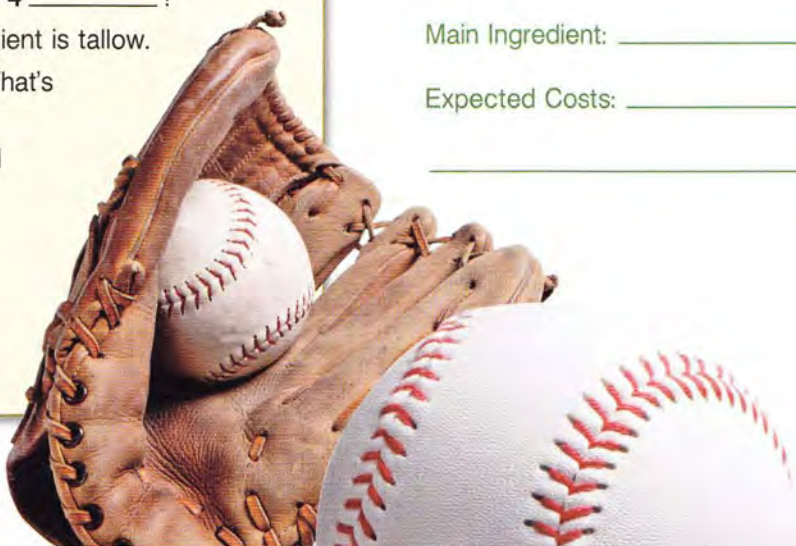
NEW PRODUCT NOTES

Product: _____

Description/Special Qualities: _____

Main Ingredient: _____

Expected Costs: _____



CultiAdvice

Dear Green Thumb:

My tomatoes are dying. They get plenty of sun and water. What am I doing wrong? – Tom G.

Dear Tom:

Check the **soil**. Tomato roots need the right amount of water and air. They don't do well in **sand** or **clay**. Both have the wrong **soil structure**. Sand particles are too loose to hold enough water. **Dense** clay prevents **aeration**. You need a **soil texture** in between those extremes. **Loam** with high **silt** is usually good.

The other issue is nutrients. A soil's **parent material** determines what nutrients are in it. You can improve the nutrients by adding **humus**.



Get ready!

1 Before you read the passage, talk about these questions.

- 1 What kind of soil is there in your country?
- 2 Why is good soil important?

Reading

2 Read the newspaper advice column. Then, mark the following statements as true (T) or false (F).

- 1 Tomatoes grow well in clay.
- 2 Aeration does not occur in clay.
- 3 Humus adds nutrients to soil.

Vocabulary

3 Fill in the blanks with the correct words and phrases from the word bank.

Word BANK

aeration clay loam humus soil structures

- 1 Some _____ hold more water than others.
- 2 Crops don't grow well in pure _____ soil.
- 3 Use _____ to add nutrients to soil.
- 4 _____ provides roots with air.
- 5 _____ is a mix of three soil types.

4 Match the words (1-6) with the definitions (A-F).

- 1 soil
- 2 sand
- 3 silt
- 4 soil texture
- 5 parent material
- 6 dense

- A a material made of small pieces of rock and mineral
- B a material that is deposited by water
- C rock and minerals that eventually form soil
- D a layer of material that plants grow in
- E the size of particles in a soil
- F having a lot of material in a small space

- 5 🎧 Listen and read the newspaper advice column again. What do you need to take into consideration when planting tomatoes?

Listening

- 6 🎧 Listen to a conversation between a customer and clerk in a plant supply store. Choose the correct answers.

- 1 What is the customer buying at the store?
 A soil C houseplants
 B pots D vegetables
- 2 Why does the clerk recommend Wonder Grow?
 A It contains no clay.
 B It has dense soil structure.
 C It supports vegetable growth.
 D It has good aeration and holds water.

- 7 🎧 Listen again and complete the conversation.

Clerk: Hi. Can I help you with anything?

Customer: Yes. I need some 1 _____.

Clerk: Is this for indoor or outdoor plants?

Customer: It's for indoor plants.

Clerk: What kinds of plants is it for? Houseplants? flowering plants? vegetables?

Customer: I have some spider plants. They need to be put in 2 _____.

Clerk: 3 _____, you should use Wonder Grow. It has 4 _____ and 5 _____ well, too.

Customer: Okay, 6 _____ . Thanks for your help.

Speaking

- 8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I need some ...

What kind of plants is it for?

You should use ...

Student A: You work in a plant supply store. Talk to Student B about:

- type of plants
- soil types
- soil description

Student B: You need soil for your plants. Answer Student A's questions.

Writing

- 9 Use the conversation from Task 8 and the newspaper advice column to fill out the product description.

Product name: _____

_____ can be used for _____
 or _____.

It supports _____ and _____
 growth.

Best of all, it has _____ and _____
 better than any product.



Get ready!

1 Before you read the passage, talk about these questions.

- 1 Where do farmers get water?
- 2 How do water shortages hurt farmers?

Reading

2 Read the article from the San Fernando Sun newspaper. Then, choose the correct answers.

- 1 What is the article mostly about?
 - A a crop shortage
 - B a lack of rainfall
 - C new irrigation methods
 - D new types of crops
- 2 According to the article, what will cause a water shortage in the future?
 - A raising rain-fed crops
 - B using extra groundwater
 - C farming in arid locations
 - D planting crops in the mountains
- 3 What is true of the peaches and nectarines?
 - A They will not be damaged by the drought.
 - B They will be more expensive this year.
 - C They will need more water than most fruits.
 - D They will be grown by out of town farmers.

Vocabulary

3 Read the sentence pair. Choose where the words best fit the blanks.

- 1 **ditch / groundwater**
 - A Irrigate the crops by digging a _____.
 - B Areas with a lot of _____ are ideal for farming.
- 2 **shortage / rainfall**
 - A With so much _____, Dawn didn't have to water her plants.
 - B Many crops died due to the water _____.
- 3 **rain-fed / drought-resistant**
 - A Linda prefers _____ crops since she lives in an arid region.
 - B Andrew doesn't irrigate; his crops are _____.

4 Match the words (1-4) with the definitions (A-D).

- 1 ___ water cycle 3 ___ arid
2 ___ drought 4 ___ irrigate

- A to guide water to plants
B the pattern of water moving and changing form
C receiving little rainfall
D a period of unusual dryness

5 Listen and read the article from the San Fernando Sun newspaper again. Why has the fact that there has been less rainfall in the mountains affected the region?

Listening

6 Listen to a conversation between two farmers. Mark the following statements as true (T) or false (F).

- 1 ___ The man's vegetable crop died.
2 ___ The woman might expand her irrigation system.
3 ___ The woman does not have drought-resistant crops.

7 Listen again and complete the conversation.

- Farmer 1: I'm worried. My vegetables won't
1 _____ if this drought continues.
- Farmer 2: I feel the same way. My lettuce and cucumbers aren't doing well.
- Farmer 1: What are you going to 2 _____
_____ it?
- Farmer 2: I might 3 _____ my irrigation system.
- Farmer 1: That 4 _____ very expensive.
- Farmer 2: I agree. But I don't know what else to do.
- Farmer 1: You could always plant 5 _____ -
_____ vegetables next year.
- Farmer 2: That's a good idea. It will cost less. But it
6 _____ this year.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

My ... aren't doing well.

You could always ...

That's a good idea.

Student A: You are a farmer during a drought. Talk to Student B about:

- your crops
- irrigation
- other solutions

Student B: You are a farmer during a drought. Discuss solutions with Student A.

Writing

9 Use the conversation from Task 8 to fill out the farm report.

FARM REPORT

Date: _____

Crops Planted: _____

Crop Condition: _____

Water Problems: _____

Possible Solutions: _____

Cold-weather **hybrid** broccoli. Bred for superior **seed vigor**. **Seedlings** survive in temperatures down to 37° F.

Germination: Soak seeds in water overnight to remove **hard coats** and end **dormancy**. Place in 70° F soil to **germinate**.

Location: **Sow** in a place that gets full sun.

Sowing method: Use a pen or similar shaped object to prepare holes 0.5 cm deep, 2 cm apart. Drop one **seed** per hole. Cover with soil. Water.

Days to sprout: 7-14

Days to maturity: 58

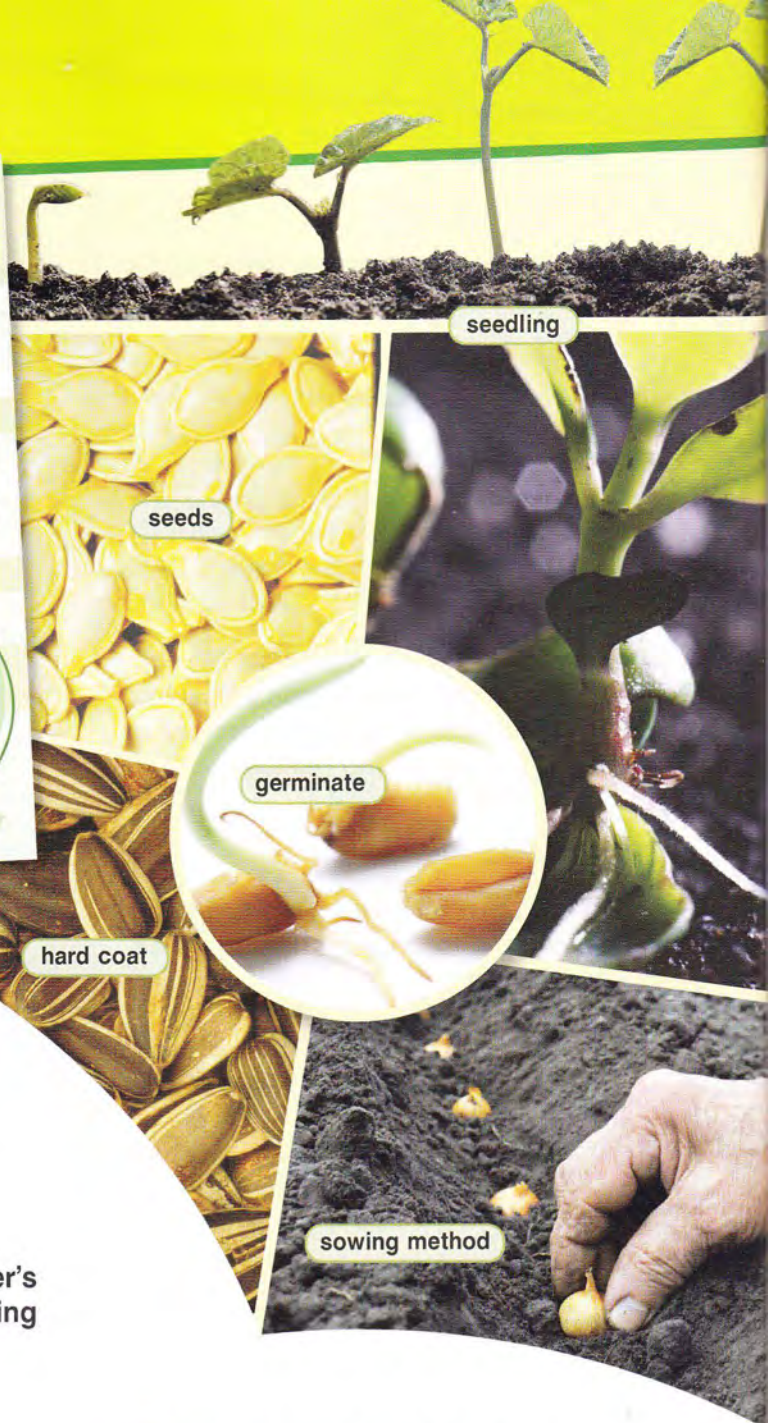
Harvest: Cut buds before they flower.

Price : \$ 0.5 / 100 g. packet*

*Bulk orders of 100 or more receive a discount of 10%

The New Gardener

pg. 17



seedling

seeds

germinate

hard coat

sowing method

Get ready!

1 Before you read the passage, talk about these questions.

- 1 How do farmers plant seeds?
- 2 What do seeds need to grow?

Reading

2 Read the page from The New Gardener's Seed catalog. Then, mark the following statements as true (T) or false (F).

- 1 The seedlings can survive below 37° F.
- 2 The broccoli seeds have hard coats.
- 3 The seeds will sprout within two weeks.

Vocabulary

3 Match the words (1-6) with the definitions (A-F).

- | | |
|--------------------------------------|---------------------------------------|
| 1 <input type="checkbox"/> hard coat | 4 <input type="checkbox"/> seed vigor |
| 2 <input type="checkbox"/> germinate | 5 <input type="checkbox"/> hybrid |
| 3 <input type="checkbox"/> seedling | 6 <input type="checkbox"/> sow |

- A the firm outer layer of a seed
 B to sprout from a seed
 C to plant seeds
 D made by parents of different breeds
 E a young plant
 F the strength and survivability of a seed

4 Write a word that is similar in meaning to the underlined part.

- 1 Farmers plant small objects from which plants grow in the spring.
s _ _ d _
- 2 Each plant has a different number of days until it can be harvested.
d _ _ _ t _ m a _ _ _ _ y
- 3 Some plants require special ways in which seeds are planted.
_ o w _ _ _ m e _ _ _ _ _
- 4 To plant a large crop, you need a large quantity order of seeds.
b _ _ k
- 5 Some plants produce seeds that pass the winter in an inactive state.
_ o r _ _ _ _ y

- 5 Listen and read the page from The New Gardener's Seed catalog again. How many weeks will it take for the broccoli to be edible?

Listening

- 6 Listen to a conversation between a customer and a farmer. Mark the following statements as true (T) or false (F).

- 1 The customer wants watermelon seeds.
- 2 The farmer does not have the seed varieties that the customer wants.
- 3 The customer will receive 10% off.

- 7 Listen again and complete the conversation.

Farmer: Hi there. Welcome to Braxton Farms. How can I help you?

Customer: Hi, I'd like to buy some seeds.

Farmer: Great. What varieties are you interested in?

Customer: I want some 1 _____, the Super King. And some cantaloupe, the Royal Gold.

Farmer: I'm sorry. I 2 _____ that.

Customer: Super King watermelon and Royal Gold cantaloupe.

Farmer: 3 _____. Also, we have a special today on 4 _____ orders. You get 10% off.

Customer: 5 _____. I only need two packets of each.

Farmer: Well, they 6 _____ packs of 3 for \$3.78.

Speaking

- 8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I'd like to buy some seeds.

What varieties are you interested in?

I only need ...

Student A: You are a farmer selling seeds. Talk to Student B about:

- seed varieties
- discounts
- total price

Student B: You are buying seeds. Answer Student A's questions.

Writing

- 9 Use the conversation from Task 8 to fill out the receipt.

BRAXTON FARMS Sales Receipt

Seed Variety: _____

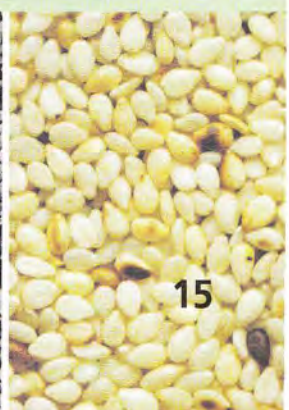
Number of packets: _____

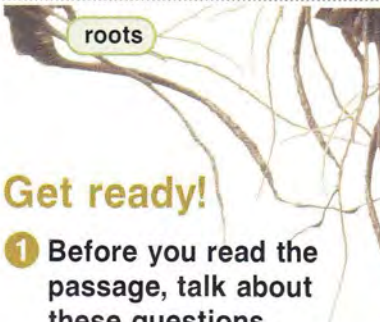
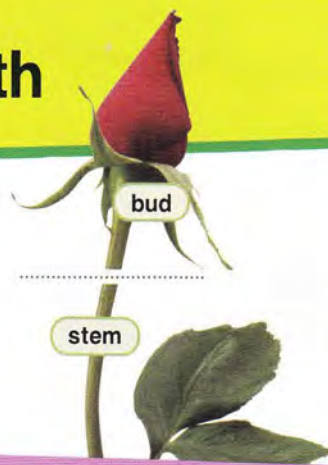
Seed Variety: _____

Number of packets: _____

Discount? Y / N

Total Price: _____





Get ready!

1 Before you read the passage, talk about these questions.

- 1 How do plants change as they grow?
- 2 What function does each part of a plant serve?



QUINOA on the Rise

Few plants have as much protein as quinoa, and it can grow in many environments. For that reason, it's become popular with gardeners and commercial farmers alike. Check out the following tips to grow quinoa at home.

Quinoa requires full sun to conduct **photosynthesis**. Sow seeds where the plant will get plenty of light. Provide at least 10 inches between rows to give the **roots** plenty of space.

If you maintain **growth charts**, you'll notice that quinoa grows slowly at first. But when the **stem** reaches about 12 inches, the **buds** will **flower**. The plant is ready for harvest when the **leaves** drop. Only the **seedheads** will remain. These can be stripped from the **branches** with little effort. Remove and dry the seeds for your first quinoa harvest.

Gardener's Monthly

19

Reading

2 Read the magazine article. Then, mark the following statements as true (T) or false (F).

- 1 No plant has more protein than quinoa.
- 2 Quinoa sprouts quickly and then slows.
- 3 Farmers who grow quinoa harvest its seeds.

Vocabulary

3 Match the words (1-4) with the definitions (A-D).

- | | |
|---|-----------------------------------|
| 1 <input type="checkbox"/> photosynthesis | 3 <input type="checkbox"/> stalk |
| 2 <input type="checkbox"/> branch | 4 <input type="checkbox"/> quinoa |

- A a narrow part that supports leaves
 B a chemical process that produces energy
 C a limb of a plant
 D a strong plant that is grown for its seeds

4 Fill in the blanks with the correct words and phrases from the word bank.

Word BANK

roots growth chart seedhead
 leaves buds flowering

- 1 Those _____ will grow into flowers.
- 2 Plants absorb nutrients from the soil with their _____.
- 3 Photosynthesis occurs in the _____ of a plant.
- 4 Tom keeps a detailed _____ of his crops to test how effective his fertilizers are.
- 5 _____ plants usually produce colorful blooms in the spring.
- 6 The _____ of a quinoa plant contains the protein-rich harvest.

- 5 🎧 Listen and read the magazine article again. Why do gardeners like quinoa?

Listening

- 6 🎧 Listen to a conversation between two farmers discussing plant growth. Mark the following statements as true (T) or false (F).

- 1 ___ The man planted quinoa for the first time.
- 2 ___ The woman's crops did not grow.
- 3 ___ The woman planted quinoa on thousands of acres.

- 7 🎧 Listen again and complete the conversation.

Farmer 1: Susan, you planted quinoa for the first time this year, 1 _____ ?

Farmer 2: I did. I was worried 2 _____ . But it seems okay now.

Farmer 1: Worried? Why?

Farmer 2: It was growing so slowly. But it just 3 _____ for the buds to flower.

Farmer 1: Oh, so they're 4 _____ ?

Farmer 2: Yeah, they are. We expect to harvest them next week.

Farmer 1: That's great. How much do you expect to harvest?

Farmer 2: Well, we only planted a 5 _____ . So probably two thousand pounds 6 _____ .

Speaking

- 8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

You planted quinoa?

Worried? Why?

How much do you expect to harvest?

Student A: You are a farmer. Ask Student B about planting quinoa for the first time. Talk about:

- growth rate
- concerns
- expected harvest

Student B: You are a farmer. Answer Student A's questions.

Writing

- 9 Use the conversation from Task 8 to fill out the farmers' notes on the first quinoa harvest.

Quinoa Harvest Summary

Acres Planted: _____

Summary of Crop Growth: _____

Expected Harvest: _____

Actual Harvest: _____