The Minnesota Literacy Council created this curriculum with funding from the MN Department of Education. We invite you to adapt it for your own classrooms.

Advanced Level (CASAS reading scores of 221-235)

Food in the US: Week 2 of 2

Unit Overview
This is a 2-week unit in which learners discover statistics about meat consumption in the United States and the global impact of the beef industry. Learners also discover how biotechnology is used to create genetically modified food. They review the modal "should" and explore the subjunctive to retell or reflect on suggestions.

Focus of Week 1

- **Reading an article on the possible benefits and risks of using biotechnology to genetically modify food.**
- **Sorting statements into benefits vs. risks**.
- Reading, writing, and speaking **academic vocabulary in a variety of forms, or parts of speech.**
- **Debating the issue of biotechnology** with an assigned stance.
- **Writing a short essay** using evidence.
- **Using "should" or "had better".**

Food in the US Unit: Week 2, Monday

Objectives *Learners will be able to…*	**Materials**
Literacy: *read an article on the possible benefits and risks of biotechnology.* ***Listening/speaking:*** *pronounce academic vocabulary, understanding that with many, if different syllables are stressed, the words have different functions.* ***Transition & Critical Thinking:*** *use dictionaries to infer words of similar connotation but different parts of speech from those on their Focus Word list.* ***Grammar:*** *determine when to use each form of Focus Word (e.g. verb, noun, adj., etc.).*	**Make Student Copies** • Handout: **Strategic Education Research Partnership (SERP): *Word Generation, Unit 3.09, pp. 49, 50*** *(copy back to back to save paper)* **Make Single Copies or Reference** • **Props, Technology, or Other Resources** • A projector; a set of dictionaries

Lesson Plan

Warm up for today's Lesson
Description: Small Group Word Webs for the abbreviation GM
Materials/Prep: None

Activity 1: **Listening/Speaking**
Description: Read through the Focus Words as learners chorally repeat, stressing the stressed syllables of multisyllabic words.
Materials/Prep: Handout: **SERP: *Word Generation*, Unit 3.09*, p. 49***

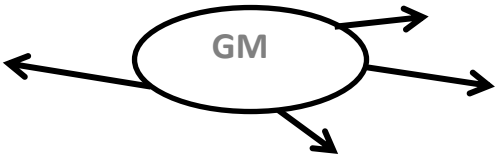
Activity 2: **Literacy**
Description: Read the passage, "Should the U.S. Support the Development of More Biotechnology to Genetically Modify Food?"
Materials/Prep: Handout: **SERP: *Word Generation*, Unit 3.09, *p. 49***

Activity 3: **Grammar, Literacy & Critical Thinking**
Description: Fill in the Forms/Examples Chart in pairs or small groups.
Materials/Prep: Handout: **SERP: *Word Generation*, Unit 3.09, *p. 50***; American English student dictionaries

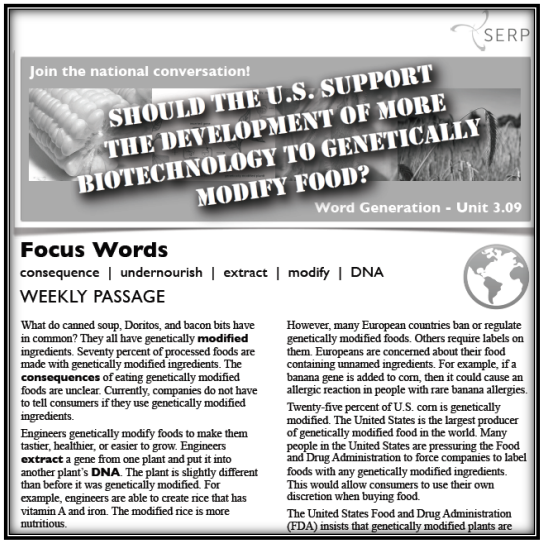
Activity 4: **Checking for Understanding**
Description: Volunteers share example sentences containing forms of the Focus Words with the whole class.
Materials/Prep: a projector

Teacher Directions: Warm up: Word Webs

Learners get into small groups and create word webs for the abbreviation GM, writing down the first words that they associate with the abbreviation. After about 5 min, a representative from each small group shares out with the whole class. Inform learners that GM does have many possible long forms, but the one they'll be learning more about this week is "genetic modification" (not General Motors). Learners will continue exploring the impact their food choices have on the economy, their health, and the environment.



Teacher Directions: Activity 1: Listening/speaking –Materials: Handout: SERP: *Word Generation, Unit 3.09, p. 49;* highlighters (optional)



SERP

Join the national conversation!

SHOULD THE U.S. SUPPORT THE DEVELOPMENT OF MORE BIOTECHNOLOGY TO GENETICALLY MODIFY FOOD?

Word Generation - Unit 3.09

Focus Words

consequence | undernourish | extract | modify | DNA

WEEKLY PASSAGE

What do canned soup, Doritos, and bacon bits have in common? They all have genetically **modified** ingredients. Seventy percent of processed foods are made with genetically modified ingredients. The **consequences** of eating genetically modified foods are unclear. Currently, companies do not have to tell consumers if they use genetically modified ingredients.

Engineers genetically modify foods to make them tastier, healthier, or easier to grow. Engineers **extract** a gene from one plant and put it into another plant's **DNA**. The plant is slightly different than before it was genetically modified. For example, engineers are able to create rice that has vitamin A and iron. The modified rice is more nutritious.

However, many European countries ban or regulate genetically modified foods. Others require labels on them. Europeans are concerned about their food containing unnamed ingredients. For example, if a banana gene is added to corn, then it could cause an allergic reaction in people with rare banana allergies.

Twenty-five percent of U.S. corn is genetically modified. The United States is the largest producer of genetically modified food in the world. Many people in the United States are pressuring the Food and Drug Administration to force companies to label foods with any genetically modified ingredients. This would allow consumers to use their own discretion when buying food.

The United States Food and Drug Administration (FDA) insists that genetically modified plants are

Note: The parts of speech for each Focus Word are as they appear within the text, with the exception of "modify," which appears as an adjective in the text. Inform learners that some of the vocabulary can have different parts of speech if stressed differently, such as "extract." ***Unfortunately, stressing the wrong syllable is often cause for misunderstandings.***

<u>Step 1: Context</u>

Read through the Focus Words one-by-one, pointing out the stressed syllable of each multisyllabic word. For example, the third word is "extract" (v.) It is pronounced with a stressed second syllable. If we stress the first syllable, it becomes the noun.

1. consequence (n.)
2. undernourished (adj.)
3. extract (v.)
4. modify (v.)
5. DNA (n.) [an acronym, in this case an initialism]

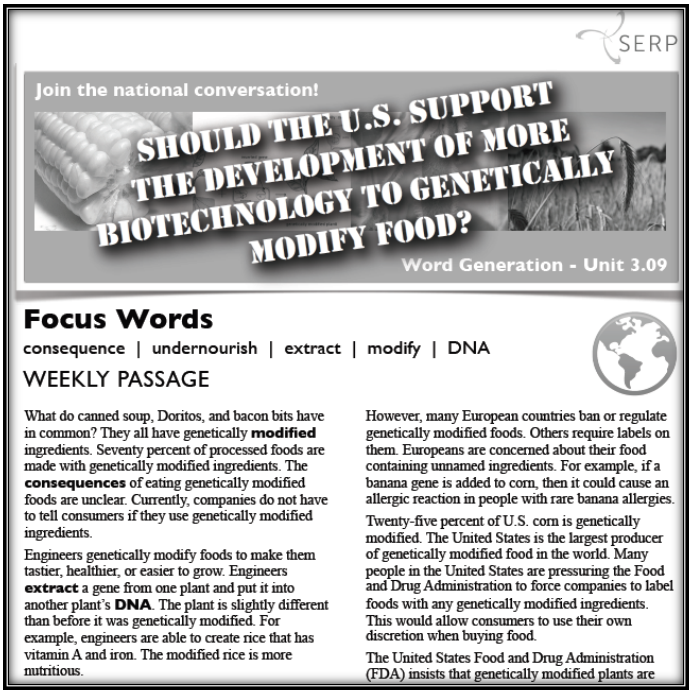
Step 2: Guided Practice

Learners chorally repeat after instructor, clapping on stressed syllable or tapping a table/thigh. Learners denote which syllable is stressed by placing a mark above the letters on their handout or by highlighting the stressed sounds/syllable with highlighters (as demonstrated within the plan).

Step 3: Partner Practice

Learners pair up and take turns reading the Focus Words to one another. Learners may give each other feedback on whether or not the correct syllable is being stressed. If pronunciation/stress is in question, call upon the instructor for guidance. This should take no more than a few minutes.

Teacher Directions: Activity 2: Literacy –Materials: Handout: "Should the US Support the Development of More Biotechnology to Genetically Modify Food?" SERP: *Word Generation, Unit 3.09, p. 49 (continuing with the same handout)*



SERP

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SHOULD THE U.S. SUPPORT THE DEVELOPMENT OF MORE BIOTECHNOLOGY TO GENETICALLY MODIFY FOOD?

Word Generation - Unit 3.09

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Engineers genetically modify foods to make them tastier, healthier, or easier to grow. Engineers **extract** a gene from one plant and put it into another plant's **DNA**. The plant is slightly different than before it was genetically modified. For example, engineers are able to create rice that has vitamin A and iron. The modified rice is more nutritious.

However, many European countries ban or regulate genetically modified foods. Others require labels on them. Europeans are concerned about their food containing unnamed ingredients. For example, if a banana gene is added to corn, then it could cause an allergic reaction in people with rare banana allergies.

Twenty-five percent of U.S. corn is genetically modified. The United States is the largest producer of genetically modified food in the world. Many people in the United States are pressuring the Food and Drug Administration to force companies to label foods with any genetically modified ingredients. This would allow consumers to use their own discretion when buying food.

The United States Food and Drug Administration (FDA) insists that genetically modified plants are

Step 1: Independent or Pair Reading

Learners independently or pair read through the passage "Should the US Support the Development of More Biotechnology to Genetically Modify Food?" and should be encouraged to question the text as they read. Since they are reading reproducible documents, they should take advantage of the opportunity to write in the margins and to highlight or underline confusing vocabulary. Learners should strive for fluency at this point and attempt to use context clues instead of their dictionaries as much as possible.

Step 2: Guided Reading

Listen to the instructor read the passage aloud while following along to the text.

Before reading, inform learners to:

1) Follow the text, not your face--no matter how animated, concerned, etc. you might be!

2) Listen closely for the pronunciation of words they highlighted or underlined.

3) If they questioned the text, did the second reading help to answer any or did some new questions arise?

Note: Step 2 is a literacy activity and not a pronunciation exercise. For this reason, learners need to follow the text and not the instructor. You can explain to learners that they may grow in their appreciation for literature by listening to a passage, but they will not improve their reading or spelling skills by simply listening.

Step 3: Class Discussion

Discuss the text. Draw the answers to the following questions out of the learners; DO NOT tell the answers to the learners!

- What was the main idea?
- What vocabulary was so confusing that it hindered, or blocked, comprehension of a large part of the text? Were there any context clues or parts of the words themselves that could have helped in understanding?
- What's the author's attitude toward biotechnology? How do you know?

Teacher Directions: Activity 3: Grammar, Literacy, & Critical Thinking –Materials:

SERP: *Word Generation*, Unit 3.09, *p. 50*; American English student dictionaries; a projector

Unit 3.09

Should the U.S. support the development of biotechnology to genetically modify food?

FOCUS WORDS OF THE WEEK

consequence : (noun) a result or an effect of something

FORMS:

EXAMPLES OF USE:

NOTES:

undernourished : (adjective) to not provide enough food for health or growth

FORMS:

EXAMPLES OF USE:

NOTES:

extract : (verb) to remove

FORMS:

EXAMPLES OF USE:

NOTES:

modify : (verb) to make changes, alter

FORMS:

EXAMPLES OF USE:

Step 1: Instructor Demonstration

Place a copy of the Definitions/Forms/Examples Chart on a projector and demonstrate "consequence" for learners. Be very explicit in your instructions and show learners what each line of the chart represents (i.e. possible parts of speech and examples of usage in sentences).

Step 2: Pair Work

Learners partner up and work together to find the Focus Words in classroom dictionaries. Learners may also use electronic dictionaries, but must be familiar with how the parts of speech are denoted on their personal devices.

If learners copy an example sentence from the dictionary, encourage them to add one of their own as well.

Remind learners as they work, if the term doesn't have the root word, it isn't a form of the word. If they are only finding a prefix or suffix, but not the root, it is a different word. The first step in identifying forms is to be aware of the roots, or base forms. For example, if "nourish" is the root, then every form of the word must contain "nourish," not only "under-" or "-ed."

Teacher Directions: Activity 4: Checking for Understanding

Volunteers approach the projector and share one or two of their example sentences with the class as the instructor facilitates corrections.

SERP

Join the national conversation!

SHOULD THE U.S. SUPPORT THE DEVELOPMENT OF MORE BIOTECHNOLOGY TO GENETICALLY MODIFY FOOD?

Word Generation - Unit 3.09

Focus Words

consequence | undernourish | extract | modify | DNA

WEEKLY PASSAGE

What do canned soup, Doritos, and bacon bits have in common? They all have genetically **modified** ingredients. Seventy percent of processed foods are made with genetically modified ingredients. The **consequences** of eating genetically modified foods are unclear. Currently, companies do not have to tell consumers if they use genetically modified ingredients.

Engineers genetically modify foods to make them tastier, healthier, or easier to grow. Engineers **extract** a gene from one plant and put it into another plant's **DNA**. The plant is slightly different than before it was genetically modified. For example, engineers are able to create rice that has vitamin A and iron. The modified rice is more nutritious.

Genetic engineering can also make plants that resist harmful insects and diseases. Insects can destroy millions of crops each year. Insect damage costs millions of dollars and can cause starvation in some countries. Genetically engineering food could help feed the 800 million **undernourished** people in the world. The United Nations estimates that the world population will grow from 6 billion to 9 billion by 2050. Some say we need to use new biotechnology to produce enough food for poor countries.

However, many European countries ban or regulate genetically modified foods. Others require labels on them. Europeans are concerned about their food containing unnamed ingredients. For example, if a banana gene is added to corn, then it could cause an allergic reaction in people with rare banana allergies.

Twenty-five percent of U.S. corn is genetically modified. The United States is the largest producer of genetically modified food in the world. Many people in the United States are pressuring the Food and Drug Administration to force companies to label foods with any genetically modified ingredients. This would allow consumers to use their own discretion when buying food.

The United States Food and Drug Administration (FDA) insists that genetically modified plants are not very different from the original plants. FDA officials believe genetically modified foods are safe. The FDA requires companies to label their products only when the genetically modified ingredients contain common food allergens.

Genetically modified foods could be helpful in feeding the hungry. They could help poor countries produce more food. But do we have enough research to ensure the modified food is safe? Should the United States support the production of genetically modified food?

Unit 3.09

Should the U.S. support the development of biotechnology to genetically modify food?

FOCUS WORDS OF THE WEEK

consequence : (noun) a result or an effect of something

FORMS: _____

EXAMPLES OF USE: _____

NOTES: _____

undernourished : (adjective) to not provide enough food for health or growth

FORMS: _____

EXAMPLES OF USE: _____

NOTES: _____

extract : (verb) to remove

FORMS: _____

EXAMPLES OF USE: _____

NOTES: _____

modify : (verb) to make changes, alter

FORMS: _____

EXAMPLES OF USE: _____

NOTES: _____

DNA : (noun) an abbreviated name for the part of plants and animals that carries genetic information inside each cell

FORMS: _____

EXAMPLES OF USE: _____

NOTES: _____

Food in the US Unit: Week 2, Tuesday

Objectives *Learners will be able to…*	**Materials**
Literacy: *read data about world population growth and the ability or inability to feed all.* ***Listening/speaking:*** *critically discuss…"Who should decide if GM is worth the risk?" and, "Why?"* ***Listening/speaking:*** *dictate sentences to a classmate and listen in order to write comprehensive sentences. Use memory and logic to orally express sentences on the topic of food modification.* ***Transitions & Critical Thinking:*** *provide evidence to support suggestion of who should decide if GM is worth the risk.* ***Grammar:*** *understand the difference between "should" and "had better" and their purposes/functions as modals.*	**Make Student Copies** • Handout: **SERP:** ***Word Generation, p. 51*** • Textbook: ***Grammar in Use Intermediate, p. 66*** • Handout: **Memory Cards (one set per 3-4 players)** **Make Single Copies or Reference** • Handout: **Food Modification Walking Dictation** (single sheet can be cut into strips and posted in hall) • Handout: **Option 2 Supplement** • Handout: **Find Your Match Cards (one set per class)** **Props, Technology, or Other Resources** • a projector

Lesson Plan

Warm up for today's Lesson **(Review of vocabulary)**
Description: Find Your Match or Memory (Dependent on class size—Find Your Match is suitable for 9-12 learners; whereas Memory is suitable for smaller classes of 4-8.)
Materials/Prep: Handout: **Find Your Match/Memory Cards**

Activity 1: **Grammar**
Description: Introduce "Should/Had better" to give advice in general or on a specific occasion.
Materials/Prep: Textbook: ***Grammar in Use Intermediate, p. 66***

Activity 2: **Literacy, Listening/speaking & Critical Thinking**
Description: Read "Problem of the Week" and address the Discussion Question.
Materials/Prep: Handout: **SERP: *Word Generation*, p. 51;** Handout: **Option 2 Supplement; a projector**

Activity 3: **Listening/speaking & Literacy**
Description: Complete a walking sentence dictation.
Materials/Prep: Handout: **Food Modification Walking Dictation**

Activity 4: **Grammar/Checking for Understanding**
Description: Correct sentence dictation at the board with learner volunteers completing sentences that were dictated to them.
Materials/Prep: **None**

Teacher Directions: Warm up: Find Your Match Cards/Memory

consequence (n)	A result or an effect of something
undernourished (adj)	Without enough food for health or growth
extract (v)	To remove
modify (v)	To make changes; alter

If the class consists of at least 10 learners, consider playing the **Find Your Match** version of the warm-up by giving the first 10 people to walk into the room a card with either a Focus Word or a definition on it. If there are an odd number of learners, the instructor will have to participate. Ask the learners to circulate the room and mingle until they find their matches and to stay together once they've found one another. As other learners enter the room, ask them to assist those who are having trouble finding their matches. Have pairs report out to the whole class, so everyone can determine whether the matches are accurate or not. ***What were the key words in the definition that told the two people they were a match?***

If the class consists of fewer than 10 learners, consider playing the **Memory** version of the warm-up by making one or two sets of the cards to be placed face down on a table in two rows of five. Learners take turns turning over two cards at a time, being careful to keep them in the exact same position and making sure all players have an opportunity to view the two cards before turning them back over. If a learner turns over a Focus Word and its definition, he/she can take the pair. The learner with the most pairs wins!

Note: You may also play this version with a larger class, but it will require more prep, because every 3-4 learners must have a set of cards.

Teacher Directions: **Activity 1: Grammar** –Materials: **Textbook**: ***Grammar in Use Intermediate, p. 66***

Step 1: Context

Explain to learners that they will be studying when to use "should" and "had better" to give advice or an opinion. The modal "should" is used alone before a base form verb, as is "had better," however there is a slight difference in usage. That is the purpose and scope of today's grammar lesson. Learners will develop mastery of production throughout the week.

Step 2: Read & Discuss

As a whole class, volunteers read aloud information and examples from Sections A and B of p. 66. Further discuss and provide additional examples as appropriate. For example, learners may have questions about contracting "had" with various pronouns and how they might identify the contraction as "had" vs. "would."

Suggested additional example:

- You should stop at stop signs. (In general, all drivers need to stop at stop signs.)
- You'd better stop at the next stop sign, because you ran the last one. (Specific advice directed at someone in a special situation, not in general.)

Notes on "had better":

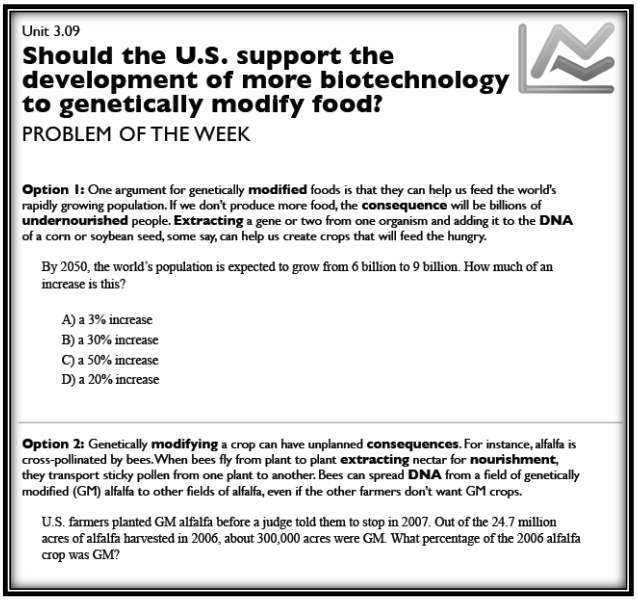
"Had" contracts with all personal pronouns in the subject position, with the exception of "it."

- *I'd*
- *You'd*
- *She'd/He'd*
- *They'd*
- *We'd*

The presence of "better" is a strong signal that the contraction is representing "had" and not "would."

Teacher Directions: Activity 2: Literacy, Listening/speaking & Critical Thinking-

Materials: **SERP:** ***Word Generation, Unit 3.09, p. 51;*** Handout: **Option 2 Supplement; a projector**



Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

PROBLEM OF THE WEEK

Option 1: One argument for genetically **modified** foods is that they can help us feed the world's rapidly growing population. If we don't produce more food, the **consequence** will be billions of **undernourished** people. **Extracting** a gene or two from one organism and adding it to the **DNA** of a corn or soybean seed, some say, can help us create crops that will feed the hungry.

By 2050, the world's population is expected to grow from 6 billion to 9 billion. How much of an increase is this?

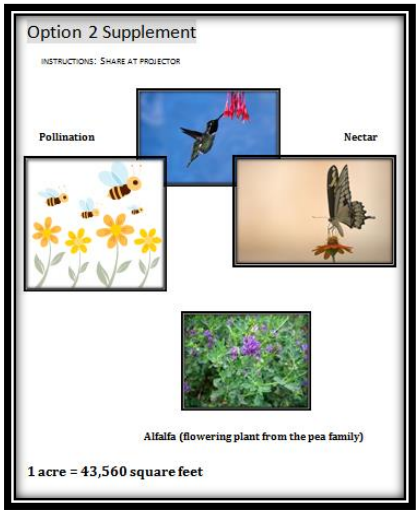
A) a 3% increase
B) a 30% increase
C) a 50% increase
D) a 20% increase

Option 2: Genetically **modifying** a crop can have unplanned **consequences**. For instance, alfalfa is cross-pollinated by bees. When bees fly from plant to plant **extracting** nectar for **nourishment**, they transport sticky pollen from one plant to another. Bees can spread **DNA** from a field of genetically modified (GM) alfalfa to other fields of alfalfa, even if the other farmers don't want GM crops.

U.S. farmers planted GM alfalfa before a judge told them to stop in 2007. Out of the 24.7 million acres of alfalfa harvested in 2006, about 300,000 acres were GM. What percentage of the 2006 alfalfa crop was GM?

Step 1: Context

Volunteer learners read the Option 1 paragraphs and statistics aloud as the whole class follows along. Check for comprehension by asking individual learners to re-explain, or rephrase, to the class. The main question for learners to answer is: "By 2050, the world's population is expected to grow form 6 billion to 9 billion. How much of an increase is this?" however, you may ask additional questions such as, "What will this mean for food production?" or "Do you think this increase will be proportionate across the globe?"



Option 2 Supplement

INSTRUCTIONS: SHARE AT PROJECTOR

Pollination

Nectar

Alfalfa (flowering plant from the pea family)

1 acre = 43,560 square feet

For option 2, share the supplemental handout via projector as a visual aid.

Step 2: Think-Pair-Share

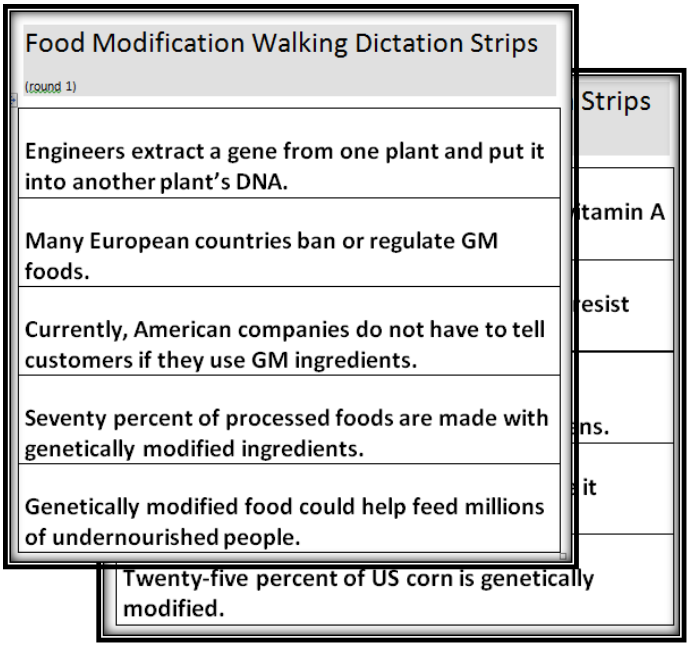
Learners think about their responses, then pair up and share their ideas about both options, then report out to the whole class.

Step 3: Whole Class Discussion

A volunteer reads the Discussion Question aloud. Hold a class discussion to address, "Who should decide whether GM is worth the risk? Scientists? Farmers? Politicians? Why?" Be sure that learners address the final question: "Why?"

Teacher Directions: Activity 3: Grammar, Literacy & Listening/speaking –

Materials: Handout: **Food Modification Walking Dictation**



Food Modification Walking Dictation Strips

(round 1)

Engineers extract a gene from one plant and put it into another plant's DNA.
Many European countries ban or regulate GM foods.
Currently, American companies do not have to tell customers if they use GM ingredients.
Seventy percent of processed foods are made with genetically modified ingredients.
Genetically modified food could help feed millions of undernourished people.

Strips

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Twenty-five percent of US corn is genetically modified.

Round 1

Round 2

Step 1: Walking Dictation

Review food modification content with a special walking dictation. If an odd number of learners, the teacher will need to pair up with someone. First, tape sentences in the hallway just outside of the classroom. Explain to the learners that one learner from each pair will need to leave the room, memorize (not write down!) individual sentences, return and dictate each to his/her partner. Learners may return to the posted sentences as frequently as necessary, but as few times as possible is the goal. When all 5 have been completed, change the sentences for 5 new ones. Writers become walking dictators and the former dictators take a seat to write the newly posted sentences.

Step 2: Facilitated Corrections

Ask one person from each pair to write one of the completed sentences on the board as the teacher facilitates corrections in a whole class discussion format.

Find Your Match/Memory Cards

consequence (n)	A result or an effect of something
undernourished (adj)	Without enough food for health or growth
extract (v)	To remove
modify (v)	To make changes; alter
DNA (n)	Part of plants & animals that carries genetic info

Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

PROBLEM OF THE WEEK

Option 1: One argument for genetically **modified** foods is that they can help us feed the world's rapidly growing population. If we don't produce more food, the **consequence** will be billions of **undernourished** people. **Extracting** a gene or two from one organism and adding it to the **DNA** of a corn or soybean seed, some say, can help us create crops that will feed the hungry.

By 2050, the world's population is expected to grow from 6 billion to 9 billion. How much of an increase is this?

A) a 3% increase
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Option 2: Genetically **modifying** a crop can have unplanned **consequences**. For instance, alfalfa is cross-pollinated by bees. When bees fly from plant to plant **extracting** nectar for **nourishment**, they transport sticky pollen from one plant to another. Bees can spread **DNA** from a field of genetically modified (GM) alfalfa to other fields of alfalfa, even if the other farmers don't want GM crops.

U.S. farmers planted GM alfalfa before a judge told them to stop in 2007. Out of the 24.7 million acres of alfalfa harvested in 2006, about 300,000 acres were GM. What percentage of the 2006 alfalfa crop was GM?

Discussion Question: There are many possible **consequences** of **modifying** the **DNA** of our food. Simply **extracting** a few genes here and inserting a few genes there could help feed millions of **undernourished** people. It could also result in the unintended spread of these genetic modifications. Who should decide whether GM is worth the risk? Scientists? Farmers? Politicians? Why?

Food Modification Walking Dictation Strips

(round 1)

Engineers extract a gene from one plant and put it into another plant's DNA.
Many European countries ban or regulate GM foods.
Currently, American companies do not have to tell customers if they use GM ingredients.
Seventy percent of processed foods are made with genetically modified ingredients.
Genetically modified food could help feed millions of undernourished people.

Food Modification Walking Dictation Strips

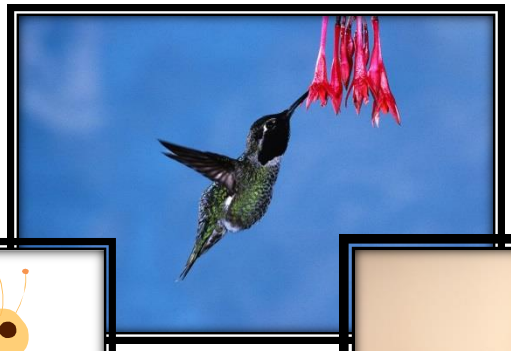
(round 2)

Engineers are able to create rice that has vitamin A and iron.
Genetic engineering can make plants that resist harmful insects and diseases.
The FDA requires companies to label GM ingredients if they contain common allergens.
Engineers genetically modify food to make it tastier, healthier, or easier to grow.
Twenty-five percent of US corn is genetically modified.

Option 2 Supplement

INSTRUCTIONS: SHARE AT PROJECTOR

Pollination



Nectar

Alfalfa (flowering plant from the pea family)

1 acre = 43,560 square feet

Food in the US Unit: Week 2, Wednesday

Objectives *Learners will be able to…*	**Materials**
Literacy: *read a stance on biotechnology and write 2-3 pieces of evidence in support of that stance.* ***Literacy:*** *read background on "Golden Rice."* ***Listening/speaking:*** *converse in a timed setting using and addressing Focus Words as appropriate.* ***Listening/speaking:*** *orally share a stance drawn and the evidence determined to support the stance with the entire class.* ***Transitions & Critical Thinking:*** *provide evidence for a stance even if it is not of their personal opinion.* ***Transitions & Critical Thinking:*** *Sort scientific information into classifications.* ***Grammar:*** *use "should" and "had better" to make general and specific recommendations.*	**Make Student Copies** • Handout: **SERP:** ***Word Generation, Unit 3.09, p. 52*** • Textbook: ***Grammar in Use Intermediate, p. 67*** **Make Single Copies or Reference** • Handout: **SERP: "Debating the Issue,"** ***Word Generation, p. 53*** • Handout: **Conversation Line Prompts** **Props, Technology, or Other Resources** •

Lesson Plan

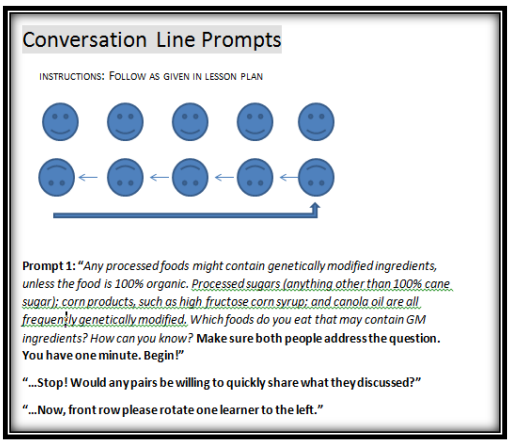
Warm up for today's Lesson
Description: Conversation Line
Materials/Prep: Handout: **Conversation Line Prompts**

Activity 1: **Literacy, Listening/speaking & Critical Thinking**
Description: "Debating the Issue"
Materials/Prep: Handout: **SERP:** ***Word Generation, Unit 3.09, p. 53***

Activity 2: **Literacy, Listening/speaking & Critical Thinking**
Description: Thinking Scientifically: Learners read about a scientific discovery involving a food modification, and then sort the data into a T-chart.
Materials/Prep: Handout: **SERP:** ***Word Generation, Unit 3.09, p. 52***

Activity 3: **Grammar & Checking for Understanding**
Description: Complete exercises 33.1 & 33.2 to practice "had better" vs. "should."
Materials/Prep: Textbook: ***Grammar in Use Intermediate, p. 67***

Teacher Directions: **Warm up: Conversation Line-Materials: Handout: Conversation Line Prompts (single copy for teacher to read aloud to learners)**


Conversation Line Prompts

INSTRUCTIONS: FOLLOW AS GIVEN IN LESSON PLAN

Prompt 1: *"Any processed foods might contain genetically modified ingredients, unless the food is 100% organic. Processed sugars (anything other than 100% cane sugar); corn products, such as high fructose corn syrup; and canola oil are all frequently genetically modified. Which foods do you eat that may contain GM ingredients? How can you know?* **Make sure both people address the question. You have one minute. Begin!"**

"...Stop! Would any pairs be willing to quickly share what they discussed?"

"...Now, front row please rotate one learner to the left."

Set up:

Divide the class in half (exactly half; if an odd number, teacher or coordinator will need to participate). Ask one half to come to the front of the room and make a straight line from left to right facing the class. Ask the other half of the class to come forward and stand one by one, face-to-face, in front of their classmates.

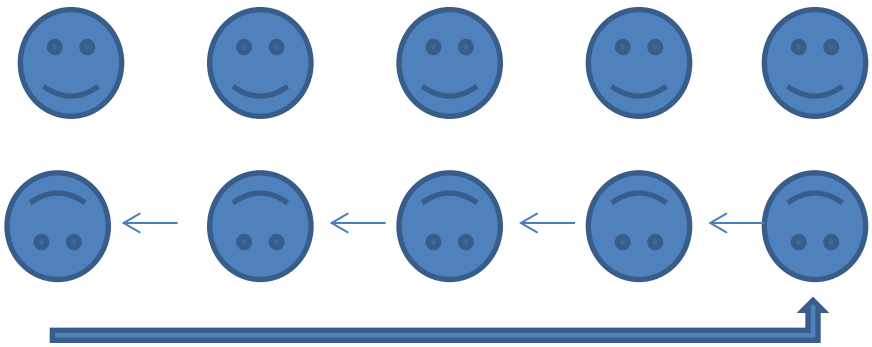
How to converse:

Read the first prompt to the class. Both learners in a face-to-face pair must address the question as thoroughly as possible using only English in one minute. Teacher must announce "stop" when one minute has expired. Ask a couple of pairs to report out.

> What did they discuss? Was one minute enough time? Did the time limit help them to stay on task or did it cause pressure and make it difficult to concentrate?

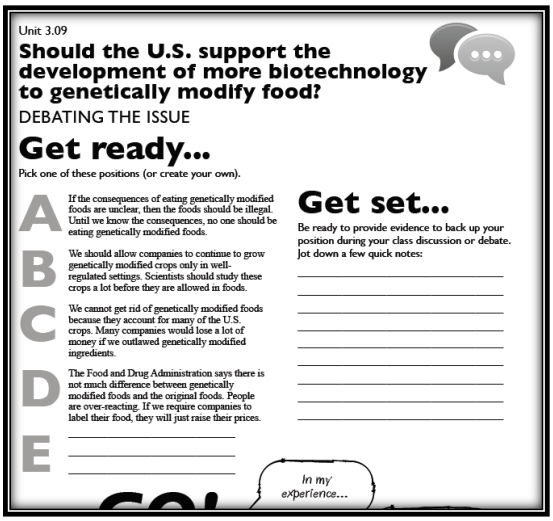
How to rotate:

The learner on one far end of the most convenient line (*not* both lines) must move all the way to the other end of the line while each learner moves one down. This guarantees that each pair has a new conversing duo. See diagram below. After rotating, ask the next question/prompt and give learners another minute to converse.



Teacher Directions: **Activity 1: Listening/speaking & Critical Thinking** **–Materials:**
Handout: **SERP: *Word Generation, p. 53* "Debating the Issue"**

Cut out stance A, B, C, and D. These will be drawn by small groups as assigned positions/stances.


Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

DEBATING THE ISSUE

Get ready...

Pick one of these positions (or create your own).

A If the consequences of eating genetically modified foods are unclear, then the foods should be illegal. Until we know the consequences, no one should be eating genetically modified foods.

B We should allow companies to continue to grow genetically modified crops only in well-regulated settings. Scientists should study these crops a lot before they are allowed in foods.

C We cannot get rid of genetically modified foods because they account for many of the U.S. crops. Many companies would lose a lot of money if we outlawed genetically modified ingredients.

D The Food and Drug Administration says there is not much difference between genetically modified foods and the original foods. People are over-reacting. If we require companies to label their food, they will just raise their prices.

E _____

Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

In my experience...

Step 1: Context

Explain to learners that using biotechnology to modify food is **a controversial issue** because many people feel that it is potentially dangerous while many others feel that it will help the undernourished and solve some planting difficulties. Something that is controversial is a public dispute or argument.

"Why would I want to defend a position that I don't personally support?" A couple of responses might be:

- *To learn **empathy** (to be understanding of how it would feel to be in the opposition's shoes)*
- *To **"play devil's advocate"** (to know what attacks might come at your personal stance in the future and to be prepared for them)*

Step 2: Assign Stances

Learners pair up or form small groups of no more than 4. One person from each group draws a stance from options A-D. Learners should be ***un***aware of the specific positions A-D at this point. Once all groups have drawn, ask one person per group to be the designated reader and to slowly, loudly and clearly read the stance aloud to his/her group. *Even if members of the group disagree with what is stated, that is the stance the group must support!*

Step 3: Group Discussion/Preparation

Pairs or small groups work together to choose at least two pieces of evidence to support their stance. Evidence does not have to be researched for today's in-class mini-debates. "Evidence" should be any fact from daily life or from in-class reading that supports the group's stance. Be sure learners understand that statements such as, "We believe this is true," or "We support this," are not considered evidence. Evidence *shows* that something is true or provides *an example* of support. If the statement, "We believe this is true," is followed by "because…" and the reason is strong and logical, the team making that statement will get credit. If not, no evidence was provided and no credit will be given to that group.

Step 4: Report Out

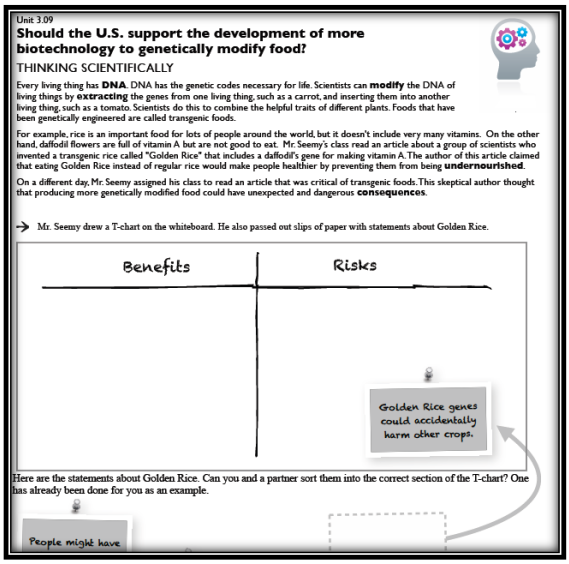
One person from each group stands and reports out its stance and evidence.

As a class, discuss:

- Which team had the strongest evidence?
- Did your personal opinion change in any way, or if you didn't have one, do you now?
- Do you have a new appreciation or any empathy for another view on biotechnology?

Teacher Directions: Activity 2: Literacy, Listening/speaking & Critical Thinking –

Materials: Handout: SERP: *Word Generation, Unit 3.10, p. 52* "Thinking Scientifically"



Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

THINKING SCIENTIFICALLY

Every living thing has **DNA**. DNA has the genetic codes necessary for life. Scientists can **modify** the DNA of living things by **extracting** the genes from one living thing, such as a carrot, and inserting them into another living thing, such as a tomato. Scientists do this to combine the helpful traits of different plants. Foods that have been genetically engineered are called transgenic foods.

For example, rice is an important food for lots of people around the world, but it doesn't include very many vitamins. On the other hand, daffodil flowers are full of vitamin A but are not good to eat. Mr. Seemy's class read an article about a group of scientists who invented a transgenic rice called "Golden Rice" that includes a daffodil's gene for making vitamin A. The author of this article claimed that eating Golden Rice instead of regular rice would make people healthier by preventing them from being **undernourished**.

On a different day, Mr. Seemy assigned his class to read an article that was critical of transgenic foods. This skeptical author thought that producing more genetically modified food could have unexpected and dangerous **consequences**.

→ Mr. Seemy drew a T-chart on the whiteboard. He also passed out slips of paper with statements about Golden Rice.

Here are the statements about Golden Rice. Can you and a partner sort them into the correct section of the T-chart? One has already been done for you as an example.

Step 1: Context

The next activity deals with scientific inquiry. Learners will be sorting information into a T-chart. A T-chart is a diagram of two columns. It is often used to decide whether there are more or less of one type of thing than another type. For example, a common T-chart is Pros vs. Cons.

Step 2: Read Together

Learner volunteers read aloud the three paragraphs of background explaining the article on "Golden Rice." Check for understanding before moving on to the sorting exercise. Learners may demonstrate understanding by retelling the background information in their own words.

Step 3: Pair Work

Pair up and sort the statements about Golden Rice into the T-chart. Each statement is either a risk or a benefit of genetically modifying rice. As pairs are working, place the following questions on the board:

1. Does one outweigh the other (risks or benefits)?
2. Do you feel any risk is very serious or extremely dangerous? Why or why not?
3. Do any benefits seem significant? Would Golden Rice help many people?

Step 4: Report Out

Volunteers share their responses to the questions as well as their sorting decisions with the whole class. Allow for some Q/A.

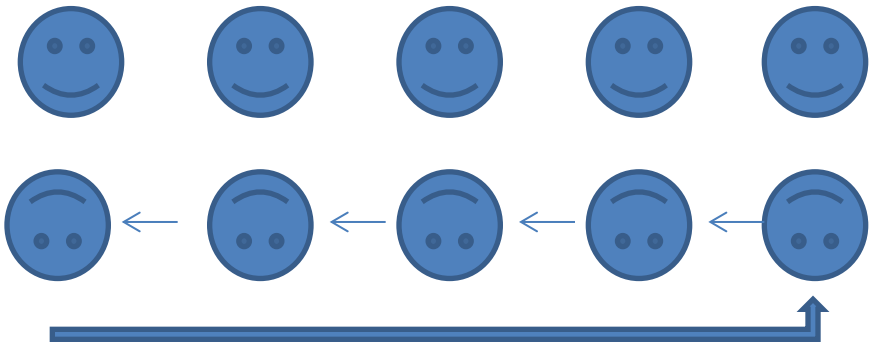
Teacher Directions: Activity 3: Grammar & Checking for Understanding–Materials:

Textbook: ***Grammar in Action Intermediate, p. 67***

Complete Exercises 33.1 and 33.2 in pairs. Correct together as a class.
Disregard Exercises 33.3 and 33.4, as they introduce new concepts.

Conversation Line Prompts

INSTRUCTIONS: FOLLOW AS GIVEN IN LESSON PLAN



Prompt 1: "*Any processed foods might contain genetically modified ingredients, unless the food is 100% organic. Processed sugars (anything other than 100% cane sugar); corn products, such as high fructose corn syrup; and canola oil are all frequently genetically modified. Which foods do you eat that may contain GM ingredients? How can you know?* **Make sure both people address the question. You have one minute. Begin!"**

"…Stop! Would any pairs be willing to quickly share what they discussed?"

"…Now, front row please rotate one learner to the left."

Prompt 2: *"Why do you think the FDA in the US believes GM foods are safe while many European countries ban or regulate them?"* **Make sure both people address the question. You have one minute. Begin!"**

"…Stop! Would any pairs be willing to quickly share what they discussed?"

"…Now, front row please rotate one learner to the left."

Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

DEBATING THE ISSUE

Get ready...

Pick one of these positions (or create your own).

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D The Food and Drug Administration says there is not much difference between genetically modified foods and the original foods. People are over-reacting. If we require companies to label their food, they will just raise their prices.

E _____

_____

_____

Get set...

Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

_____

_____

_____

_____

_____

_____

_____

_____

_____

GO!

Be a strong participant by using phrases like these.

In my experience...

That's similar to what I think.

What makes you think that?

When I re-read the text, it reminded me...

Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

THINKING SCIENTIFICALLY

Every living thing has **DNA**. DNA has the genetic codes necessary for life. Scientists can **modify** the DNA of living things by **extracting** the genes from one living thing, such as a carrot, and inserting them into another living thing, such as a tomato. Scientists do this to combine the helpful traits of different plants. Foods that have been genetically engineered are called transgenic foods.

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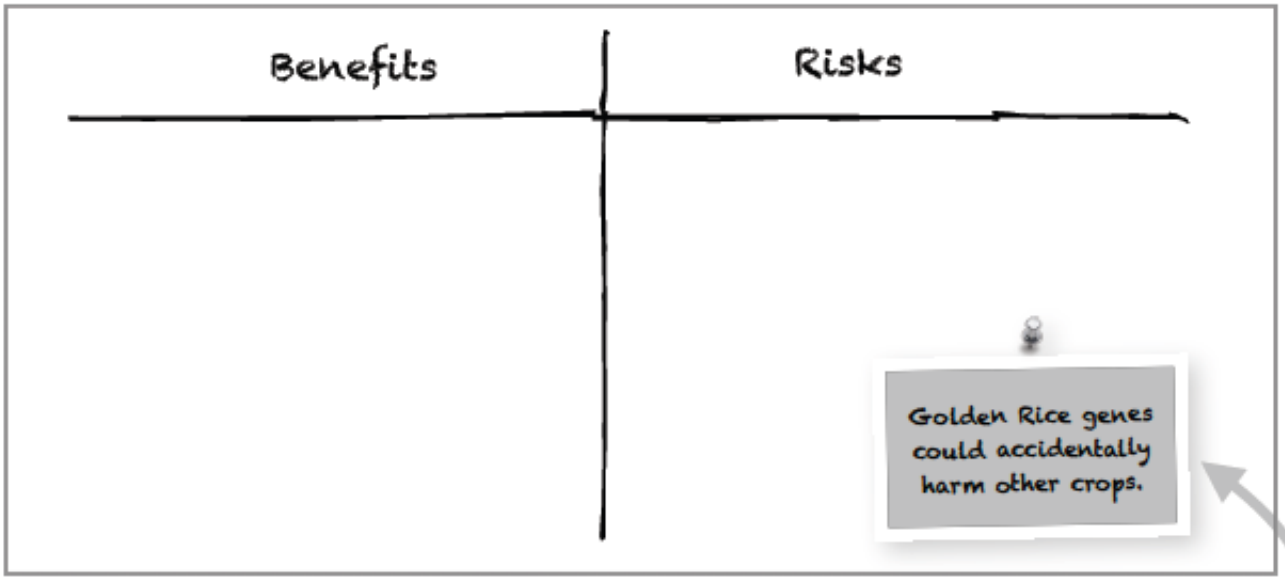

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Food in the US Unit: Week 2, Thursday

Objectives *Learners will be able to…*	**Materials**
Literacy: *write Focus Words in appropriate sentences* ***Literacy:*** *write an essay on the topic of biotechnology using evidence and Focus Words.* ***Listening/speaking:*** *listen and take notes on criteria for exemplary writing. Ask clarification questions as they arise.* ***Transitions & Critical Thinking:*** *consider counterarguments as they write their essays while incorporating Focus Words and "should" or "had better" to make recommendations. Categorize foods into GMO or Non-GMO by considering listed ingredients.* ***Grammar:*** *use "should" or "had better" to make recommendations in general or a specific situation if the opportunity arises in their essays.*	**Make Student Copies** • Handout: **SERP:** ***Word Generation, Unit 3.09, p. 54*** • Handout: **Focus Words Practice** • Handout: **Suggestions for Exemplary Criteria Improvements (can be copied back of SERP, p. 54)** • Handout: **GMO or Non-GMO?** **Make Single Copies or Reference** **Props, Technology, or Other Resources** • Computers with word processing (optional) • Computers with Internet access (optional) • Several packaged food items or food labels

Lesson Plan

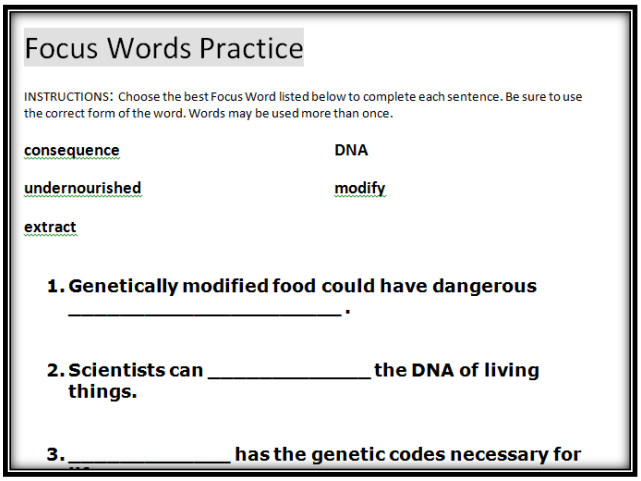
Warm up for today's Lesson (Review of vocabulary)
Description: Use Focus Words in correct sentences
Materials/Prep: Handout: **Focus Words Practice**

Activity 1: Listening/speaking & Critical Thinking
Description: Discuss criteria for exemplary writing.
Materials/Prep: Handout: **Suggestions for Exemplary Criteria Improvements**

Activity 2: Literacy
Description: Write an essay on vegetarianism following criteria for exemplary writing.
Materials/Prep: Handout: **SERP:** ***Word Generation, Unit 3.09, p. 54***

Activity 3: Checking for Understanding
Materials/Prep: Handout: **GMO or Non-GMO?; Several packaged food items or food labels; computers with Internet access (optional)**

Teacher Directions: Warm up: Focus Word Practice-Materials: Handout: **Focus Words Practice**



Focus Words Practice

INSTRUCTIONS: Choose the best Focus Word listed below to complete each sentence. Be sure to use the correct form of the word. Words may be used more than once.

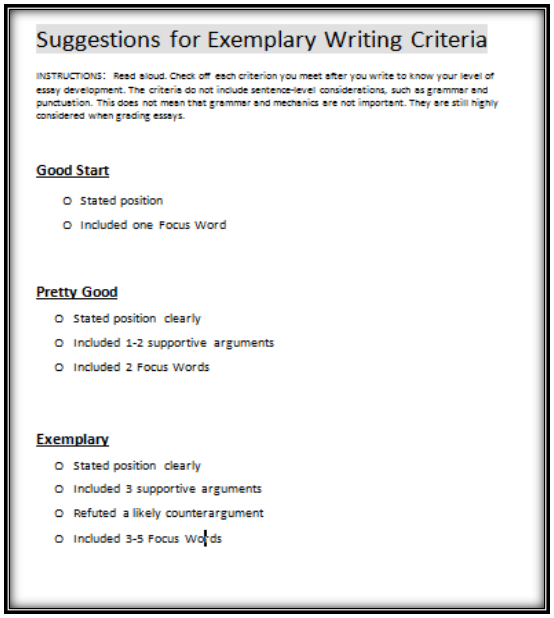
consequence	DNA
undernourished	modify
extract	

1. Genetically modified food could have dangerous _____.
2. Scientists can _____ the DNA of living things.
3. _____ has the genetic codes necessary for

Demonstrate the first response for the whole class at a projector, so all learners understand that they must use the appropriate form of one of the Focus Words in order to complete the exercise.

Correct together as a class by having volunteers come up to the projector and fill in the correct answers.

Teacher Directions: Activity 1: Listening/Speaking & Critical Thinking-Materials: Handout: **Suggestions for Exemplary Writing Criteria Improvements**



Suggestions for Exemplary Writing Criteria

INSTRUCTIONS: Read aloud. Check off each criterion you meet after you write to know your level of essay development. The criteria do not include sentence-level considerations, such as grammar and punctuation. This does not mean that grammar and mechanics are not important. They are still highly considered when grading essays.

Good Start
- Stated position
- Included one Focus Word

Pretty Good
- Stated position clearly
- Included 1-2 supportive arguments
- Included 2 Focus Words

Exemplary
- Stated position clearly
- Included 3 supportive arguments
- Refuted a likely counterargument
- Included 3-5 Focus Words

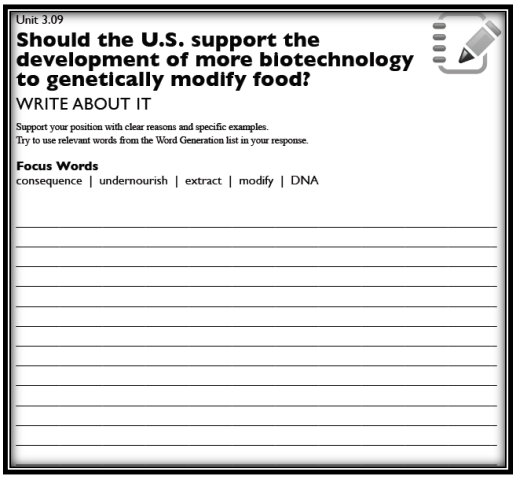
Step 1: Context

Explain to learners what a rubric is and how it is used to grade objectively. The GED, college entrance, and licensure writing tests usually use some form of rubric. The Word Generation curriculum uses a very interesting writing rubric and the suggestions made can help learners as they prepare for the GED, college entrance, or those tricky open-ended job application questions. Unfortunately, there is some overlap between the number of Focus Words required and the number of supportive arguments (examples, etc.) Therefore, a more straightforward rubric has been provided here with the handout **Suggestions for Exemplary Writing Criteria**.

Step 2: Read and Discuss

Learner volunteers read each grading criteria aloud. Discuss as a whole class.

Teacher Directions: **Activity 2: Literacy & Critical Thinking-Materials: Handout: SERP:** ***Word Generation, p. 54, "Writing Prompt"; computers with word processing (optional)***



Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

WRITE ABOUT IT

Support your position with clear reasons and specific examples.
Try to use relevant words from the Word Generation list in your response.

Focus Words
consequence | undernourish | extract | modify | DNA

Step 1: Prewrite

Learners brainstorm on scratch paper or in their notebooks before writing on the **Writing Prompt** handout. Learners should brainstorm a thesis statement and ideas to support it (e.g. something relevant to US support of biotechnology). They may choose to list or to draw a word web/diagram, but some pre-writing should be encouraged. If learners try to organize their ideas as they develop them, it will be more difficult to incorporate the Focus Words and concentrate on staying on topic (avoiding irrelevant comments).

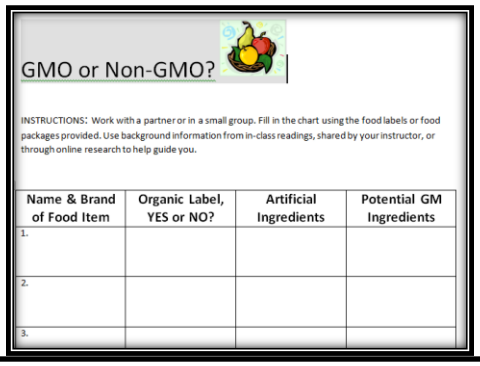
Step 2: Write

Learners write a short essay on the prompt **"Should the US support the development of more biotechnology to genetically modify food?"** striving for exemplary writing. Remind learners that the criteria on the **Writing Prompt** handout has some overlap between grading categories and that it is best to refer to the **Suggestions for Exemplary Writing Criteria** handout. A short essay may be 1-5 paragraphs depending on the learner's ability and the amount of class time remaining.

After hand-writing a rough draft, learners may word process and print their paragraphs/essays if computers are accessible.

Note: Ideally, a teacher or coordinator will read learner essays and check off criteria met, so learners get an idea of what they should work on concerning development of their writing.

Teacher Directions: **Activity 4: Checking for Understanding-Materials: Handout: GMO or Non-GMO?; several packaged food items or food labels; computers with Internet access (optional)**



GMO or Non-GMO?

INSTRUCTIONS: Work with a partner or in a small group. Fill in the chart using the food labels or food packages provided. Use background information from in-class readings, shared by your instructor, or through online research to help guide you.

Name & Brand of Food Item	Organic Label, YES or NO?	Artificial Ingredients	Potential GM Ingredients
1.			
2.			
3.			

If possible, provide a variety of packages/food labels, such as certified organic, natural, and non-organic.

If learners would like more background on organic foods in the US, the Mayo Clinic provides the following information:

If a food bears a USDA Organic label, it means it's produced and processed according to the USDA standards. Products that are completely organic — such as fruits, vegetables, eggs or other single-ingredient foods — are labeled 100 percent organic and can carry the USDA seal. Foods that have more than one ingredient, such as breakfast cereal, can use the USDA organic seal plus the following wording, depending on the number of organic ingredients:

- **100 percent organic.** To use this phrase, products must be either completely organic or made of all organic ingredients.
- **Organic.** Products must be at least 95 percent organic to use this term.

You may see "natural" and other terms such as "all natural," "free-range" or "hormone-free" on food labels. These descriptions must be truthful, but don't confuse them with the term "organic." Only foods that are grown and processed according to USDA organic standards can be labeled organic. Organic regulations ban or severely restrict the use of food additives, processing aids (substances used during processing, but not added directly to food) and fortifying agents commonly used in nonorganic foods, including preservatives, artificial sweeteners, colorings and flavorings, and monosodium glutamate.

Sept. 7, 2012

2-3 learners work together to complete the chart on the handout "GMO or Non-GMO?" by identifying any commonly genetically modified ingredients found on the ingredients list as well as any ingredients listed as artificial.

Focus Words Practice

INSTRUCTIONS: Choose the best Focus Word listed below to complete each sentence. Be sure to use the correct form of the word. Words may be used more than once.

consequence **DNA**

undernourished **modify**

extract

1. **Genetically modified food could have dangerous _____ .**

2. **Scientists can _____ the DNA of living things.**

3. **_____ has the genetic codes necessary for life.**

4. **Golden rice could prevent people from being _____.**

5. **The dentist will have to _____ the decayed tooth.**

6. **The _____ of using GM ingredients in food products are unknown.**

Suggestions for Exemplary Writing Criteria

INSTRUCTIONS: Read aloud. Check off each criterion you meet after you write to know your level of essay development. The criteria do not include sentence-level considerations, such as grammar and punctuation. This does not mean that grammar and mechanics are not important. They are still highly considered when grading essays.

Good Start

- ○ Stated position
- ○ Included one Focus Word

Pretty Good

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Unit 3.09

Should the U.S. support the development of more biotechnology to genetically modify food?

WRITE ABOUT IT

Support your position with clear reasons and specific examples.
Try to use relevant words from the Word Generation list in your response.

Focus Words

consequence | undernourish | extract | modify | DNA

GMO or Non-GMO?

INSTRUCTIONS: Work with a partner or in a small group. Fill in the chart using the food labels or food packages provided. Use background information from in-class readings, shared by your instructor, or through online research to help guide you.

Name & Brand of Food Item	Organic Label, YES or NO?	Artificial Ingredients	Potential GM Ingredients
1.			
2.			
3.			
4.			
5.			
6.			