



Lesson 9 – Nutrition and Academic Success

Background Information

With the passage of the Healthy Hunger-Free Kids Act in 2010 and changes to the National School Lunch Program and School Breakfast Program, there is a growing importance of school meal programs in providing high quality, nutritious meals to children. While improving childhood nutrition is the focus, an often-unexplored benefit of access to school meal programs is the **academic success** of students. For example, research on the academic impact of school breakfast programs on participating students shows an improvement in school attendance, memory, and in some cases standardized test scores. There is even research that suggests school lunches contain more fruits and vegetables than packed lunches, further reinforcing the nutritional quality of school meals. Whether it is from breakfast or lunch, students who receive regular, healthy meals are focused and less tired during class.

Children also need essential nutrients for proper growth and development. Those at risk for nutrient deficiencies benefit greatly from healthy, nutritious school meals. Consider what happens to students who are at risk for iron deficiency and anemia. **Iron deficiency** is caused by low iron in the diet and is one of the most common nutritional disorders for children worldwide. Iron deficiency can result in anemia, developmental issues during early childhood, impaired growth and intellectual development, and changes in brain metabolism that may not be correctable with supplementation later in life. **Anemia** is one of the most prevalent red blood cell disorders with a wide range of symptoms including fatigue, lightheadedness, pale skin, muscle weakness, and fainting. As a result, students who have or are susceptible to iron deficiency and anemia may find it increasingly difficult to be successful in school. The recommendations are for children to consume foods with high iron availability and foods that enhance iron absorption, such as foods with vitamin C. Another concern for children is zinc deficiency, which can result in impaired immune function, which in turn may impact attendance. The National School Lunch Program and School Breakfast Program meal patterns require a variety of foods be served to students that are excellent sources these nutrients.



Communicating the contributions of school meals to student health, well-being, and academic success is one way to help promote school meal programs. To ensure that students are receiving healthy, nutritious meals the support and appreciation of school meals from the entire school community is required. Using **tailored messages** as a form of communication and outreach with school community members may increase their interest and result in higher participation in school meals. School nutrition professionals can tailor their messages to each of these groups to accomplish this. For example, you might explain to teachers that school meals improve concentration during class time. Being knowledgeable about the connection between nutrition and academic success enables school nutrition professionals to advocate for their school meal programs.

Concepts and Vocabulary

Anemia: One of the most prevalent red blood cell disorders with a wide range of symptoms that includes fatigue, lightheadedness, pale skin, muscle weakness and fainting.

Academic Success: A term typically used to describe the attainment of outcomes specific to educational experiences such as grades.

Iron Deficiency: One of the most common nutritional disorders for children worldwide caused by low iron in the diet or present in a form that is poorly absorbed. Iron deficiency can result in anemia, developmental issues during early childhood, impaired growth and intellectual development, and changes in brain metabolism that may not be correctable later in life.

Tailored Messages: A marketing term that addresses the attitudes and beliefs of different target groups to promote key ideas or themes.

Nutrient Deficiency: The result of inadequate consumption or absorption, or excessive loss of a nutrient. It can lead to symptoms of deficiency, which vary by nutrient.

School Community: The school community is an audience that may consist of students, parents, teachers, principals, administrators, nurses, board members, and nutrition personnel. Each group has a level of influence on students' eating habits and perceptions about food.

9.1: Learning Activity

Overview

In this activity, participants will learn about the connection between proper nutrition from school meals and academic success. Participants will then create a tailored message to promote participation in school meal programs for an assigned school community member. The tailored message will be based on what they have learned about nutrition and academic success and brainstorming some of the concerns that their assigned school community member may have.

Getting Ready

Time Required

50 minutes

Materials Needed

(Materials provided in the curriculum)

For Each Group of 2-4 Participants <ul style="list-style-type: none"><input type="checkbox"/> Flip chart paper<input type="checkbox"/> Markers, pens, or pencils	For the Facilitator <p>Optional:</p> <ul style="list-style-type: none"><input type="checkbox"/> Lesson 9 (PowerPoint)<input type="checkbox"/> Computer<input type="checkbox"/> PowerPoint Projector
For the Class <ul style="list-style-type: none"><input type="checkbox"/> Nutrition and Academic Success Cards (Lesson Material 9-A)<input type="checkbox"/> Promoting School Meal Programs Cards (Lesson Material 9-B)	For Each Participant <ul style="list-style-type: none"><input type="checkbox"/> None

Preparation

Other Materials

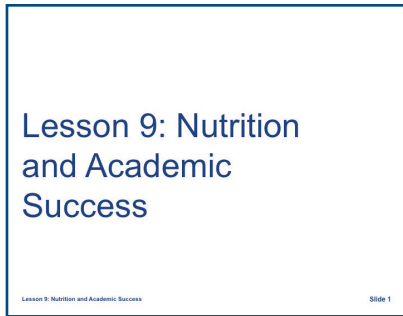
1. Print and cut out copies of the following:
 - ***Nutrition and Academic Success Cards (Lesson Material 9-A)*** so that each group has one of the four different topics.
Facilitator Tip: You may also print and pass out multiple copies of the same card so each group member has one to read.
 - ***Promoting School Meal Programs Cards (Lesson Material 9-B)*** so each group has one of the four different cards.

Classroom Set-Up

2. Organize the class into small groups of 2 to 4 participants.
3. Provide each group with a sheet of flip chart paper and markers, pens, or pencils to answer opening questions/prompts.

Optional

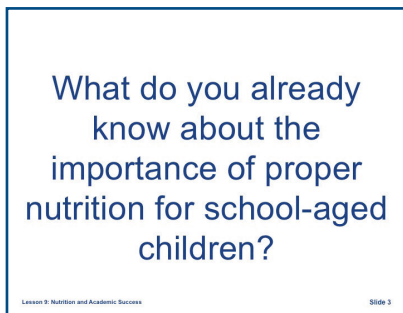
4. Before participants arrive, connect laptop to projector. Load ***Focus on Food Lesson 9 (PowerPoint)***.



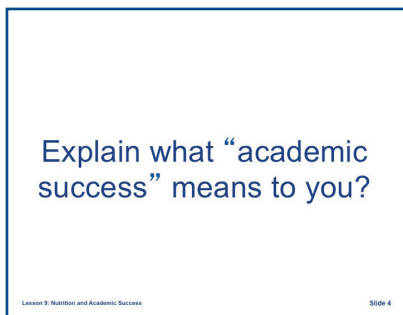
Slide 1



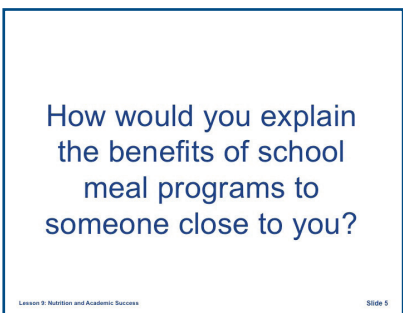
Slide 2



Slide 3



Slide 4



Slide 5

Opening Questions/Prompts

Small Group Discussion

1. **Say:** Let us get started with Lesson 9 – Nutrition and Academic Success! **(Slide 1)** To begin, I would like everyone to discuss some opening questions within your group. **(Slide 2)** Once you have discussed the prompts within your groups, we will come back together as a class and discuss your thoughts and responses as a whole.

The first prompt I would like you to discuss within your groups is:

- What do you already know about the importance of proper nutrition for school-aged children? **(Slide 3)**
Facilitator Tip: Explain to participants they may write their answers independently or assign one person in their group to write down everyone's thoughts. It may be helpful to explain to the class that they will learn more about these topics throughout the lesson.

2. **Do:** Allow 2 to 3 minutes for groups to discuss the prompt. Repeat with the remaining two prompts:
 - Explain what "academic success" means to you. **(Slide 4)**
 - How would you explain the benefits of school meal programs to someone close to you? **(Slide 5)**

Class Discussion

3. **Say:** As a class, let us discuss what you talked about in your groups. What were some of your thoughts on the first prompt, what do you already know about the importance of proper nutrition for school-aged children? **(Slide 3)**
4. **Do:** Allow about a minute for participants to share their thoughts on this topic with the class. Repeat with the remaining prompts:
 - Explain what "academic success" means to you. **(Slide 4)**
 - How would you explain the benefits of school meal programs to someone close to you? **(Slide 5)**

Facilitator Tip: This sharing phase is a great opportunity to begin to build rapport with participants. Some statements and questions to help engage participants at this phase are, “Tell me more about that”; “What do you mean by...”; “Did anyone else write this?”; “That’s a very popular opinion.” At this stage, it is important you do not correct misconceptions. Instead, make note of them, and if they are not corrected organically through the lesson, address them briefly at the end of the lesson.

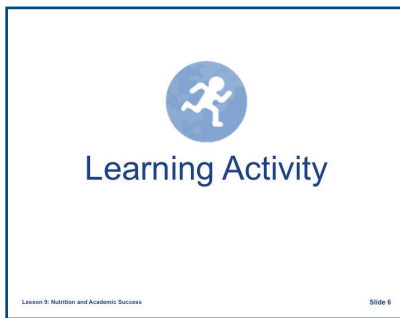
Procedure (Experiencing)

Small Group Discussion

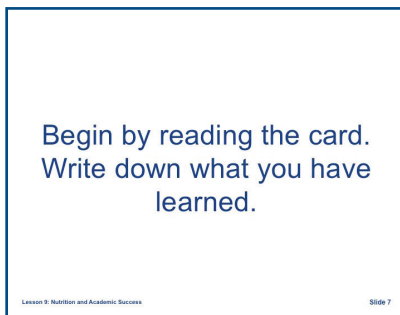
- Say:** Now that we’ve completed our opening discussion, we’ll start on the activity for this lesson. **(Slide 6)** I am going to pass out an info card to each group. These cards have information about the School Breakfast Program, the National School Lunch Program, essential nutrients, and messaging on them. Begin by reading the card and writing down what you learned. We will come back together as a class and discuss it as a whole. **(Slide 7)**
- Do:** Provide each group with one of four different **Nutrition and Academic Success Cards (Lesson Material 9-A)** and allow groups 3-5 minutes to read.
 - You may also print and pass out multiple copies of the same card to each group so that each member has one to read.
 - You can also encourage groups to write down what they have learned.

Class Discussion

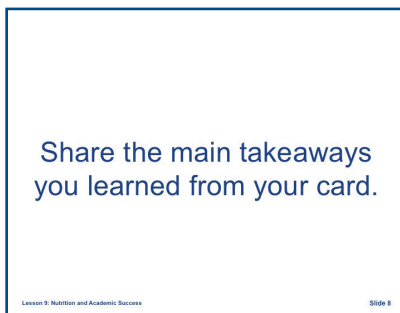
- Say:** Let us discuss what your main takeaways were. **(Slide 8)**
- Do:** As groups talk about their main takeaways write them down on a flip chart paper that is viewable to the class.



Slide 6



Slide 7



Slide 8

Creating and Presenting Skits

Brainstorm concerns that your school community member may have about school meals.

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Slide 9

9. **Say:** Now I am going to pass out a school community member to each group. First, your group will brainstorm concerns that your assigned school community member may have about school meals or school meal programs. **(Slide 9)** If you are having trouble brainstorming concerns, use the guided questions on your card.

Facilitator Tip: *When groups are brainstorming concerns, make sure their concerns are ones that can be addressed by what they have learned. If necessary, guide their discussions in that direction.*

Respond to one of those concerns by creating a brief skit that includes the information you have learned.

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10. **Do:** Provide each group with a copy of the **Promoting School Meal Programs Cards (Lesson Material 9-B)** and allow groups 3-5 minutes to brainstorm.
11. **Say:** Now as a group, respond to one of those concerns by creating a brief skit that includes the information you have learned in your response. Your skit should be able to demonstrate what concern you are responding to and also promote school meals. **(Slide 10)**

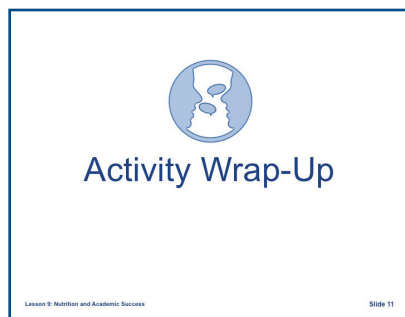
Facilitator Tip: *If you audience is uncomfortable with skits then try reframing it as a roleplaying situation. Emphasize that participants are simply pretending to be other people.*

Facilitator Tip: *Skits should include the main takeaways from the info cards that groups were given. If necessary, guide their discussions in that direction. For example, you may ask questions like, “how are you going to use what you have learned?” or “is there another way to express that?”*

12. **Do:** Allow groups 3-5 minutes or longer to create a skit.
13. **Say:** Lets have each group share their skit with the rest of the class. Before you start, please announce which school community member you have.
14. **Do:** After enough time has passed, have each group announce their school community member and share their skit with the rest of the class.

Activity Wrap-Up (Sharing, Processing, Generalizing)

15. **Say:** Those were great skits! Let us have each group explain what their skits were about and why you chose to perform them like that. **(Slide 11)**
16. **Do:** Allow groups to explain their skits and the reasoning behind them. Follow the group's line of thinking, and if necessary, ask more targeted questions.
 - How were other group's skits similar to yours? How were they different?
 - What did you learn about school meals or school meal programs from watching other group's skits? What did you learn about other school community members from watching other group's skits?
 - What other concerns did you come up with that your school community member may have about school meals?
 - What other responses could you have come up with and demonstrated?
 - Why was tailoring your response the way you did important when addressing that school community member?
 - Why is it important to consider the concerns from school community members?



Slide 11

Facilitator Tip: If there are any misconceptions remaining in this phase of the lesson, you should address these now.

Concept and Term Discovery/Introduction

Over the course of the lesson, participants should be able to identify the following concepts:

- School meal programs have a critical role to play in providing students with proper nutrition, which affects their learning experience.
- The nutrition status of students may affect their educational outcomes such as attendance and possibly grades.
- Appreciation of school nutrition programs can be fostered through positive and tailored messages to members of the school community by expressing how these programs contribute to learning.

The following key vocabulary term should be discovered by participants or introduced to them: School Breakfast Program, National School Lunch Program, academic success, school community members, tailoring.

9.2: Expanding Knowledge

Overview

In this mini-lecture, participants will go in-depth on how school nutrition programs benefit students.

Getting Ready

Time Required

5 minutes

Materials Needed

(Materials provided in the curriculum)

For the Facilitator <input type="checkbox"/> Lesson 9 (PowerPoint) <input type="checkbox"/> Computer <input type="checkbox"/> PowerPoint Projector	For Each Group of 2-4 Participants <input type="checkbox"/> None
For the Class <input type="checkbox"/> None	For Each Participant <input type="checkbox"/> None

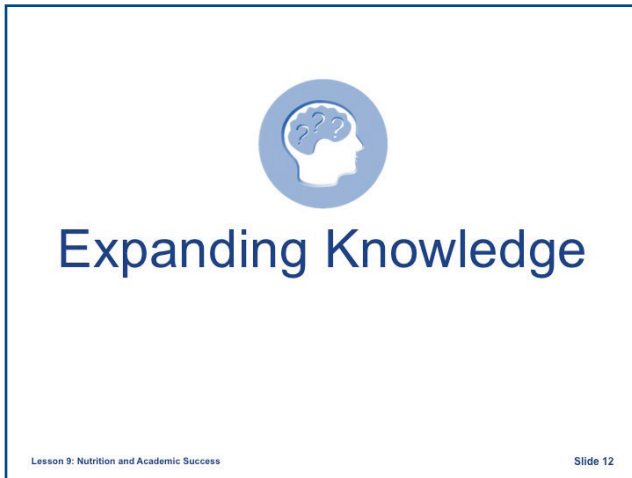
Preparation

Projector Set-Up

1. Connect laptop to projector. Load **Focus on Food Lesson 9** (PowerPoint).
2. Queue the PowerPoint presentation to Slide 12.

Procedure

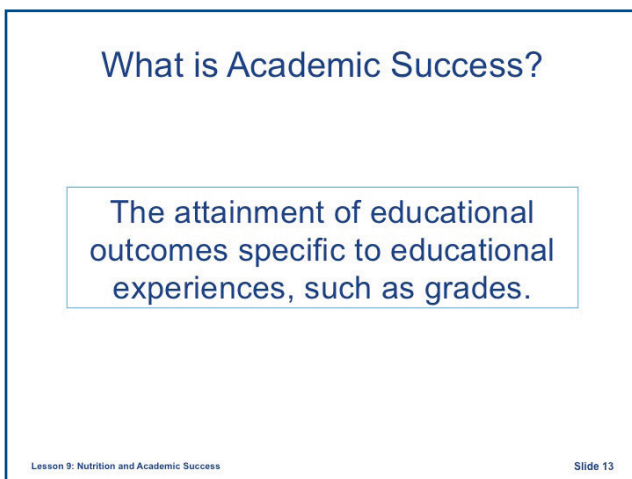
1. Do: Go through the Expanding Knowledge presentation slide by slide. The following script is available for use if you so choose.



Slide 12

Slide 12

That was a great discussion! Now it's time to recap some concepts we learned throughout Lesson 9, Nutrition and Academic Success.

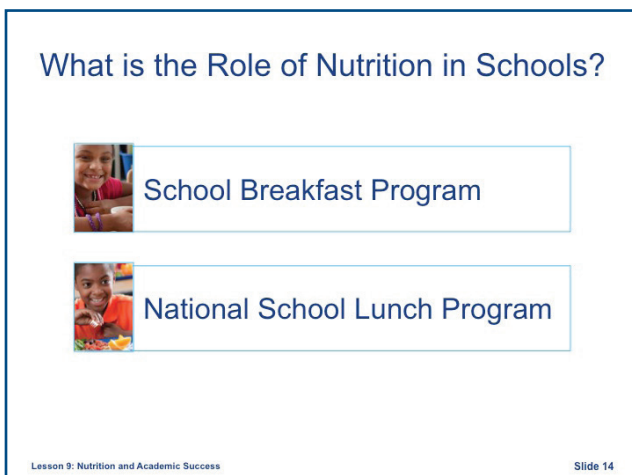


Slide 13

Slide 13

For the purposes of our discussion we define academic success as “the attainment of educational outcomes specific to educational experiences, such as grades.”

Keep in mind that grades are not the only measure of academic success. We will discuss how nutrition affects many components of academic success.



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To review, breakfasts, lunches, snacks, and suppers must meet state and federal nutrition requirements as part of the School Breakfast Program and National School Lunch Program. These requirements are designed to raise the nutritional quality of school meals.

These meals are required to have fruits, vegetables, protein, and low-fat dairy.

How might students benefit from these meals?

[Pause to allow responses from the class.]

What is the Role of Nutrition in Schools?



Classroom behavior



Academic standards



Growth and development

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Those are great ideas!

There are many reasons why students may benefit from having healthy meals. Nutrition from healthy meals affects classroom behavior, academic standards, and influences the growth and development of children. We will be discussing how healthy meals affect all three categories.

Classroom Behavior

Hungry students	Well-fed students
Distracted	Show up ready to learn
More absences results in less class time	Improved attendance results in more class time.

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The effects of healthy meals are very apparent in the classroom. For example, hungry students may come to class distracted while well-fed students show up ready to learn. School breakfast programs also reduce absenteeism, resulting in more time spent in class.

Academic Standards

- Improvement in:
 - Memory and cognition
 - Standardized test scores
- Opportunity to develop social skills

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There is evidence that healthy eating results in better grades. Research shows that healthy school meals improve memory and cognition among students. In some cases, school meals were shown to improve students' standardized test scores. School meals also provide an opportunity to develop social skills.

Growth and Development

What nutrients might affect a child's learning potential?

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School meals provide the essential nutrients that students need to protect against illness and fight against deficiency and undernutrition.

What nutrients might have an impact on a child's growth and development?

[Pause to allow responses from the class.]

Iron Deficiency

- Possible outcomes:
 - Anemia
 - Developmental issues
 - Impaired growth and development
 - Changes in brain chemistry

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Those are great examples!

A big concern for children is iron deficiency. Iron deficiency can result in anemia, developmental issues during early childhood, impaired growth and development, and changes in brain chemistry that may not be correctable later in life.

What are some sources of iron?

[Pause to allow responses from the class.]

Anemia

- A red blood cell disorder
- Symptoms include:
 - Fatigue
 - Lightheadedness
 - Pale skin
 - Muscle weakness
 - Fainting

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Anemia is one the most prevalent red blood cell disorders with a wide range of symptoms including fatigue, lightheadedness, pale skin, muscle weakness, and fainting.

Anemia has serious consequences for children in school. Since iron deficiency is the most common cause of anemia so knowing food sources of iron is important.

Zinc Deficiency

- Possible outcomes:
 - Impaired immune function
 - Stunted growth


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Another nutrient of concern is zinc. Zinc deficiency can result in stunted growth and impaired immune function which may impact attendance.

What else is important for learning?



Proper hydration improves focus



School meals are cost effective

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There are also many other reasons why school meals help students learn.

Hydration improves cognitive function in children which is important for learning and school meals are a cost effective way to combat food insecurity, hunger, and undernutrition.

The importance of school meals

- Practice healthy eating behaviors
- Provide nutrient-rich foods
- Offer academic benefits to students

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Schools are in a unique position to provide students with opportunities to learn about and practice healthy eating behaviors.

The School Breakfast Program and National School Lunch Program provide a variety of foods to students that are excellent sources of important nutrients.

School meals also provide many important academic benefits to students. Being knowledgeable about these contributions is one way to help promote school meal programs.

9.3: Goal Setting Activity

Overview

In this activity, participants will use what they have learned about school nutrition and academics to set goals for communicating with members of the school community.

Getting Ready

Time Required

5 minutes

Materials Needed

(Materials provided in the curriculum)

For the Facilitator Optional: <input type="checkbox"/> Lesson 9 (PowerPoint) <input type="checkbox"/> Computer <input type="checkbox"/> PowerPoint Projector	For Each Group of 2-4 Participants <input type="checkbox"/> None
For the Class <input type="checkbox"/> None	For Each Participant <input type="checkbox"/> Goal Setting – Nutrition and Academic Success (Activity Sheet 9-C) Optional: <input type="checkbox"/> Focus on Food Lesson 9 Newsletter (Handout 9-D)

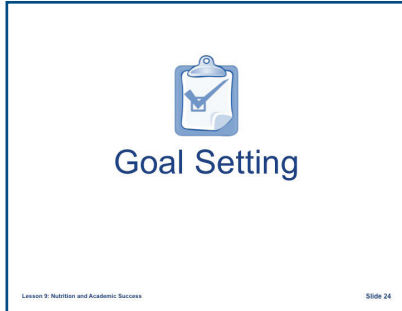
Preparation

Handouts

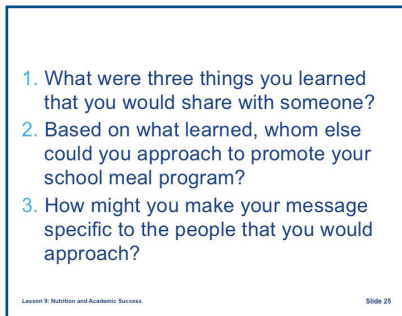
1. Make copies of the following handouts:
 - **Goal Setting – Nutrition and Academic Success (Activity Sheet 9-C)**, one for each participant.
 - Optional: **Focus on Food Lesson 9 Newsletter (Handout 9-D)**, one for each participant.

Projector Set-Up

2. Connect laptop to projector. Load Focus on Food Lesson 9 (PowerPoint).
3. Queue the PowerPoint presentation to Slide 24.



Slide 24



Slide 25



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Procedure

1. **Say:** Now let us move onto Goal Setting! (**Slide 24**) We have learned about the role school nutrition programs can play in helping children reach their academic potential. The next step is to set some goals and make a plan. I am going to distribute a Goal Setting Handout which has the following questions: (**Slide 25**)
 - What were three things you learned that you would share with someone?
 - Based on what you learned, whom else could you approach to promote your school meal program?
 - How might you make your message specific to the people that you would approach?
2. **Do:** Provide a copy of the **Goal Setting – Nutrition and Academic Success Handout (Activity Sheet 9-C)** to each participant. Allow participants a few minutes to complete the handout.
3. **Say:** Would anyone like to share the goals they set for themselves?
4. **Do:** Allow participants to share their goals.

Optional:

5. **Say:** I'm going to distribute one last handout, which is a newsletter with some extra information you might be interested in. Thank you all for participating in Lesson 8! (**Slide 26**)
6. **Do:** Provide a copy of the **Focus on Food Lesson 9 Newsletter (Handout 9-D)** to each participant.

Nutrition and Academic Success Cards

Research suggests that there is connection between school breakfast programs and academic success.

One study compared students' standardized test scores before and after implementing a school breakfast program. Students who participated saw improvements in their test scores compared to students who did not participate.

More than one study has also shown that participating in school breakfast could help improve attendance.

School breakfast contains many of the nutrients students need to grow. Students who participate in school breakfast are also less likely to experience hunger during class.

Eating breakfast regularly, whether at home or school, is a great way for students to see health and academic benefits.

The National School Lunch Program is based on nutrition recommendations from the Dietary Guidelines for Americans.

The Dietary Guidelines are designed to help Americans of all ages make food choices that add up to a healthy eating pattern.

A healthy eating pattern includes fruits, vegetables, protein, grains, and plant oils. These include vegetables from a variety of colored subgroups, whole grains, and whole fruit. A healthy eating pattern also limits added sugar, saturated fat, and sodium.

Following a healthy eating pattern can help a person maintain a healthy body weight, get all the nutrients they need, and reduce the risk of chronic disease.

The current meal pattern helps promote healthy eating patterns in schools by including a variety of fruits, vegetables, and whole grains.

School meals provide essential nutrients for proper growth and development.

When someone doesn't consume enough of a nutrient they need, that person could develop a nutrient deficiency.

Students who have a nutrient deficiency may find it more difficult to be successful in school. For example, iron deficiency is caused by low iron in the diet. This can result in anemia.

Anemia is a red blood cell disorder that can cause a wide range of symptoms. These symptoms include fatigue, lightheadedness, and fainting, which can make it hard for at student with anemia to learn.

Other deficiencies in zinc, B vitamins, and omega-3 fatty acids have been shown to affect the cognitive development of children. Over time, the effects of these nutrient deficiencies can might lead to student absences, or make it harder for them to learn.

School meal programs benefit from a variety of marketing goals and messaging strategies.

Marketing school meal programs is a way to influence the diet and health of youth.

Good marketing treats students like customers and delivers age-appropriate nutrition messages. As a result, these students may be more receptive to school meals and less so to outside competition.

Even if you do not have a marketing background, there are goals that non-marketers can aim for.

Start by creating a positive image of the school meal program. Promote good food and nutrition education. Use clear, compelling, and specific messages to attract different members of the school community.

For example, you might suggest to students that school meals are great to enjoy time with friends. Parents might be interested in the health benefits of school meals.

Combine marketing goals and messaging strategies to have a positive effect on students' eating behaviors!

Appendix 9B – Promoting School Meal Programs

Students

- What are some of their main concerns about school meals?
- What are their expectations about school meals?
- How might this audience benefit from knowing what you have learned?

Parents

- What are some of their main concerns about school meals?
- What are their expectations about school meals?
- How might this audience benefit from knowing what you have learned?

Teachers

- What are some of their main concerns about school meals?
- What are their expectations about school meals?
- How might this audience benefit from knowing what you have learned?

Principals

- What are some of their main concerns about school meals?
- What are their expectations about school meals?
- How might this audience benefit from knowing what you have learned?

Focus on Food Lesson 9 Newsletter

The optional newsletter on the following pages is designed to help reinforce the concepts learned. If offering this course in a single workshop, you may wish to distribute the lesson newsletters weekly in order to help refresh participants' memory and solidify the concepts.

Nutrition and Academic Success

In this issue...

Healthy Foods and Learning Page 2

Spotlight on Iron and Zinc Page 2

Getting Your Message Out Page 3

Test your knowledge!
Take the nutrition and academic success quiz! Page 3



The role of nutrition in academic success

Academic success means different things to different people. For one person it might mean good grades, but to another it might mean finishing school with the tools needed to be a productive member of society. However you choose to define it, good nutrition can be an important factor because it contributes to a student's ability to learn.

Turn the page to learn more about nutrition and academic success!



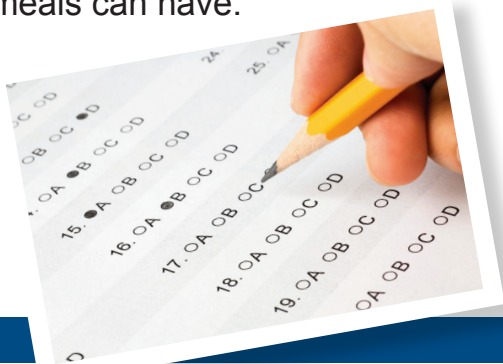
Did you know?

Iron deficiency can make it harder for children to learn.



Healthy Foods and Learning

We know that healthy meals help students learn, but how? First, they provide the nutrients students need to fuel their brains and bodies. Hungry students may be distracted while well-fed students are more likely to show up ready to learn. Healthy eating may even lead to better tests scores! Of course, school breakfast and lunch are a great way for students to get the healthy foods they need to learn. Last year, over five billion school lunches and over two billion school breakfasts were served nationwide. That's a lot of meals served to kids! It just goes to show how much of an impact school meals can have.



Spotlight on Iron and Zinc

Iron is one of many nutrients that are important for learning. Not enough iron in the diet can lead to anemia. Anemia means that red blood cells aren't able to move enough oxygen around in the blood. Some of the symptoms of anemia are lightheadedness, muscle weakness, and fainting, which can make it harder for students to learn.

Zinc is another nutrient than can have an impact on student success, but for a different reason. When a person's diet doesn't have enough zinc, this might result in their immune system not working as well as it could. When that happens to a student, it could lead to more illnesses and missed days of school.

Encourage students to choose foods that are good sources of these nutrients, including meat, beans, and dark green veggies for iron, and whole grains, nuts, and legumes for zinc.

Getting Your Message Out

Sharing how school meals can contribute to student health, well-being, and academic success is one way to help promote your program. Different members of the school community will have different priorities. That's why it's important to tailor your message when promoting school meals. For example, you might explain

to teachers that school meals improve concentration during class time. But for parents, you might want to tell them about how school meals contain nutrients that help students learn. Being able to share the connection between nutrition and academic success can help you advocate for your school meal program.

Test your knowledge with the nutrition and academic success quiz!

1. Which of these nutrients is important in preventing anemia?
 - a. Iron
 - b. Carbohydrates
 - c. Vitamin D
 - d. Thiamin
2. How many lunches were served in the National School Lunch Program last year?
 - a. 200,000
 - b. 8 million
 - c. 50 million
 - d. 5 billion
3. True or false: Nuts are a source of zinc.
 True
 False



The Results are In!

If you got all three right:

You really know the connection between nutrition and academic success!

If you got two right:

You're on the right track! Try finding the information you missed in the other pages of the newsletter to become a nutrition master.

If you got one or less right:

It just means you have more chances to learn! Try reading through this newsletter again to learn more about what you missed.

Check your answers at the bottom of the page!

1. a; 2. d; 3. True

