

**SOUTH CAROLINA  
DEPARTMENT OF EDUCATION  
OFFICE OF SCHOOL FOOD SERVICES  
AND NUTRITION**

**CURRICULUM FOR  
FOOD SERVICE ASSISTANTS**



**THE WORKPLACE RESOURCE CENTER  
400-A CHURCH STREET  
LAURENS, SC 29360  
(864) 984-1928  
FAX: (864) 984-0959  
E-MAIL: [www.scwrc.org](http://www.scwrc.org)**

**STAFF**

**JOAN MASON, DIRECTOR  
SHIRLEY SMITH, ADMIN. ASSISTANT  
CURRICULUM DEVELOPERS:  
KANDI FREDERE  
PEGGY PRESCOTT  
DAVID STEPHENSON**



**The Workplace Resource Center is funded by the South Carolina Department of Education, Office of Adult and Community Education**

January 2001

# CURRICULUM FOR FOOD SERVICE ASSISTANTS

## DEVELOPED FOR THE SOUTH CAROLINA STATE DEPARTMENT OF EDUCATION OFFICE OF SCHOOL FOOD SERVICES

### BACKGROUND:

The Curriculum for School Food Service Assistants is the culmination of an extensive effort by the State Department of Education to address the training needs of employees.

Beginning in January, 1999, food service employment positions were analyzed to determine job task requirements. The job profiling process was implemented in four categories: directors, managers, assistants and cashiers. The project was conducted by the South Carolina Workplace Resource Center, using the Work Profiling System developed by Saville Holsworth, Ltd. Food service employees from every region of the state were included in the analysis process.

### PROGRAM OUTLINE:

Results from the job tasking were used to determine training needs in the critical performance areas for each position. The content of the curriculum provided here is based on the identified needs for basic skill development for food service assistants. Skill competencies addressed are:

Skill Competency	Suggested Time to Complete
Skills Assessment	Varies
Customer Service	1 Hour
Communicating in a Cooperative Workplace	1 Hour
Math Skills	
Number Recognition	1/2 Hour
Rounding and Estimating	1/2 Hour
Operations with Whole Numbers	2 Hours
Fractions	2 Hours
Decimals	1 Hour
Measurement	1 1/2 Hours
Reading Skills (Technical Vocabulary, Reading for Information, Reading to Follow Directions)	3 Hours Total
Time Management	1 Hour
Problem Solving	1 Hour

## **CURRICULUM FORMAT:**

The Curriculum for Food Service Assistants is provided as an Instructor's Guide. The program script is formatted into two columns. The first column provides an outline of activity and offers graphics to provide visual clues regarding the suggested activity. The second column directs the instructor in all aspects of program delivery.

Master copies of all handouts noted in the curriculum are provided. These may be reproduced and distributed as needed within each lesson or compiled within an employee manual.

The training program is designed to be facilitated using an overhead projector and transparencies. Master copies to be reproduced on transparencies are provided and labeled within each unit.

## **VIDEO SUPPORT (OPTIONAL):**

Video support for the course content is not required, but is an option through the resources of the State Department of Education. Several video lessons that are part of "ONE" (Orientation for New Employees), a project of the State Department of Education of Georgia, can be used as enhancement to the material provided here. The video lessons and the units in which they would be appropriately used are as follows:

### **ONE**

Lesson 15	"Your Road Map to Success"	Time Management
Lesson 25	"It's the Way You Say It"	Communicating in a Cooperative Workplace
Lesson 26	"Listening"	
Lesson 27	"Teamwork"	
Lesson 29	"Practical Communication"	
Lesson 28	"Is Your Attitude Showing"	Customer Service
Lesson 35	"Pinches, Bits and Dabs"	Measurement
Lesson 36	"Weighing the Difference"	
Lesson 37	"Learning to Speak Kitchenese"	Reading Skills (Technical Vocabulary)

## PREPARATION:

Review the materials within the Instructor's Guide. Be certain that you understand the objectives of each lesson and that you cite these for participants as well. Be prepared with transparencies and student materials to easily facilitate the flow of activity.

You will most likely be working with small groups of employees. Introduce yourself and allow the opportunity for participants to get to know you and to feel comfortable with each other. The training modules require a slight variety of presentations, but all are designed to encourage the involvement of participants. Establishing rapport and an open environment are essential.

## SKILLS ASSESSMENT:

A Skills Assessment test is located at the beginning of this curriculum. This test should be administered to all students before any of the curriculum is taught. This assessment serves several purposes. First, it will be used to determine who will be exempt from certain mathematical sections. Second, it will be used to determine the students' FFL level in the NRS reporting system. The full assessment test should be given to all students.

A correlation chart is included in the Instructor's Manual (before the assessment) for determining the correct FFL level. After the assessment is "graded," the instructor should locate the first incorrect answer in the assessment. The instructor should then use the correlation chart to identify which FFL level the student should be placed in. For example, if a student answers questions one through ten correctly but misses number eleven, the student should be placed in FFL level Three. For reporting purposes, it is not necessary to be concerned with incorrect or correct answers after the first incorrect answer. The level is ALWAYS determined by the FIRST incorrect answer. The same method is used when determining the FFL level after the course has been completed.

The assessment is divided into sections which correspond with the modules in this curriculum. Students may exempt participation in any math section in which they are proficient. As a rule, if any student **misses more than one question** in a math section, they are required to participate in that section. If a student misses one or fewer questions in a given section, they are considered exempt and not required to go through that particular module. Exemptions apply only to the math sections starting with the "Number Recognition" section and ending with the "Measurement" section. If the instructor feels that additional remediation is necessary following the instruction, the local adult education program can offer help on an individual basis.

After students have completed all required modules, the Skills Assessment Test should be given again. This will serve as a comparison to determine what knowledge has been gained during the curriculum.

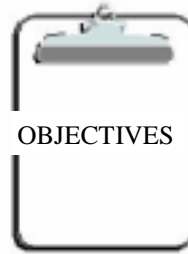
# INSTRUCTOR'S GUIDE ICONS



Lecture



Transparency



Objectives



Group Activity



Video



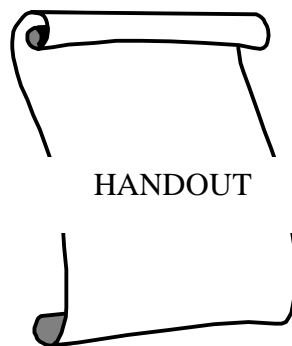
Flip Chart



Questions and Answers



Individual Activity



Handout



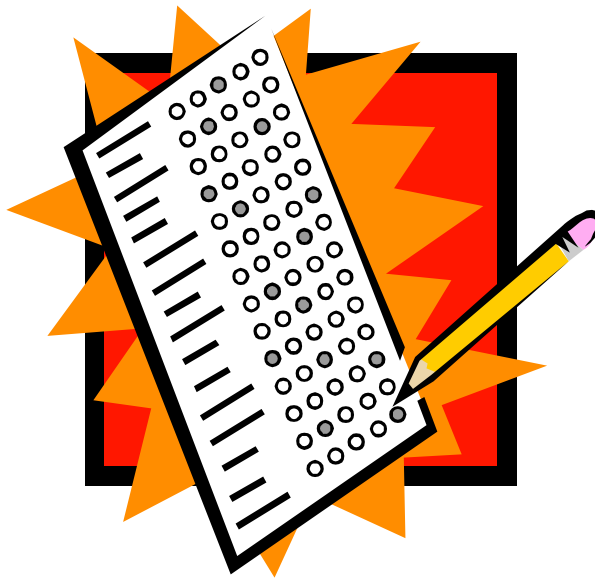
Time

## Table of Contents

1	Skills Assessment
2	Customer Service
3	Communicating in a Cooperative Workplace
4	Math Skills
5	Number Recognition
6	Rounding and Estimating
7	Operations With Whole Numbers
8	Fractions
9	Decimals
10	Measurement
11	Reading Skills Technical Vocabulary
12	Reading For Information
13	Reading to Follow Directions
14	Time Management
15	Problem Solving



# Skills Assessment



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)



## **Skills Assessment**

### **How to use this Assessment:**

The following assessment is intended as a diagnostic tool for material covered in this curriculum.

If a participant scores well in a particular math section, it may not be necessary for them to receive the training provided by that module. To skip a module, the student should miss no more than one question in each section. If the student misses more than one question in a given section then he or she will be required to participate in that module.

Reassure class participants that any sections they find difficult **WILL BE COVERED** in later modules. Remind them that this portion of the curriculum is necessary to determine which modules they can skip and which ones they will need to review further.

This assessment will be administered again after all modules have been completed.

The correlation chart used for determining the FFL Level is included on the next page.

An answer key is included at the end of the test.

## FOOD SERVICE ASSISTANTS CORRELATION CHART

<b>Federal Functioning Level (FFL)</b>	<b>Essential Skills for Completion of Level</b>
<p><b>Beginning Literacy (FFL #1)</b></p> <p>The first incorrect answer occurs in questions 1-3.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Identify components of a customer-oriented attitude.</li> <li>Identify when two-way communication has taken place.</li> <li>Identify words with different technical definitions.</li> </ul>
<p><b>Beginning Basic Education (FFL #2)</b></p> <p>The first incorrect answer occurs in questions 4-7.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Define communication.</li> <li>Identify strategies for improving reading skills.</li> <li>Identify the proper steps to use when reading instructions.</li> <li>Use time management strategies.</li> </ul>
<p><b>Low Intermediate Basic Education (FFL #3)</b></p> <p>The first incorrect answer occurs in questions 8-12.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Work through the problem solving process.</li> <li>Correctly identify place value positions.</li> <li>Correctly write numerical information.</li> </ul>
<p><b>High Intermediate Basic Education (FFL # 4)</b></p> <p>The first incorrect answer occurs in questions 13-18.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Correctly round numbers.</li> <li>Correctly estimate computations.</li> <li>Calculate basic addition and subtraction problems.</li> </ul>
<p><b>Low Adult Secondary Education (FFL # 5)</b></p> <p>The first incorrect answer occurs in questions 19-24.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Calculate basic division and multiplication problems.</li> <li>Understand equivalents in measurement.</li> <li>Know correct measurement techniques.</li> </ul>
<p><b>High Adult Secondary Education (FFL # 6)</b></p> <p>The first incorrect answer occurs in questions 25-31 or all questions are answered correctly.</p>	<p>The student can:</p> <ul style="list-style-type: none"> <li>Compute basic mathematics operations with fractions.</li> <li>Compute basic mathematics operations with decimals.</li> </ul>

## Sample Problems

**DIRECTIONS:** Work out each of the following problems and write your answer in the space provided. If a diagram is given, the problem will be stated immediately after the diagram. You may use the space to the right of the page for your scratch work. Use the back of the sheet if you need additional space.

**EXAMPLE A:** Total the number of loaves of bread:

59 loaves of white bread

113 loaves of wheat bread

**Answer: 172 loaves total**

**EXAMPLE B:**

What is the first step in solving a problem?

**Recognize and define the problem.**

**EXAMPLE C:**

Sylvia is able to prepare 4 lasagnas in 15 minutes.

How many lasagnas can Sylvia prepare in 2 hours?

**Answer: 16 lasagnas every hour  $\times$  2 hours = 32 lasagnas.**

**Work as rapidly as you can.**

**Do not turn the page until you are told to.**

## Skills Assessment

### Customer Service, Communicating in a Cooperative Workplace, Reading Skills,

1. **True or False:** Flexibility is determined in an individual by their attitude.
2. **True or False:** When students ask you to repeat how much they should pay for their lunch, two-way communication has taken place.
3. **True or False:** The term “scald” has different meanings in different situations. “To heat just below boiling” is an example of its common sense definition.
4. Define communication.
5. Circle the number before each strategy if it will help you remember what you read.
  1. Understanding the purpose of your reading.
  2. Read as quickly as possible without thinking about what you have read.
  3. Focus on the overall meaning of the text to determine the main point or points.
  4. Apply what you have read.
6. **True or False:** When following a recipe, it is important to read all the instructions before starting to cook.
7. **True or False:** When a particular task stumps you, you should concentrate on it until you complete the task no matter how long it takes you.
8. **True or False:** The best way to determine the root cause of a problem is to ask questions.

**(Skills Assessment Continued)**

**Number Recognition**

9. A pizza, when sliced correctly, has 12 slices in it. The one in the 12 is in what place value position?  
a. Ones                      b. Tens                      c. Hundreds

10. There are 3,725 students at your school. Identify the place value position of each number.

3 \_\_\_\_\_ 7 \_\_\_\_\_ 2 \_\_\_\_\_ 5 \_\_\_\_\_

11. Write the following words as numbers:

four hundred fifty six \_\_\_\_\_

two million three hundred forty thousand one hundred \_\_\_\_\_

12. Write the following numbers as words:

87.45 \_\_\_\_\_

16.032 \_\_\_\_\_

**Rounding and Estimating**

13. Round the following items to the nearest ten:

426 cans of apple juice \_\_\_\_\_

36 baking pans \_\_\_\_\_

14. Round the following items to the nearest thousandth:

698.0326 pounds of chicken \_\_\_\_\_

5.12397 pounds of bananas \_\_\_\_\_

**(Skills Assessment Continued)**

15. Estimate the total cost of Justin's breakfast if he purchased:  
One orange for \$.69  
Two slices of French toast for \$2.87  
One carton of milk for \$1.04  
Justin owes approximately \$ \_\_\_\_\_.
16. If Justin handed you \$20, approximately how much would you owe him in change?

**Whole Numbers**

17. In cold storage you have:  
22 pounds of beef  
47 pounds of fish  
1010 pound of chicken  
What is the total amount of beef, fish and chicken you have in storage?
18. Carolyn has 743 pounds of cabbage in storage. For lunch she used 231 pounds for coleslaw. How much cabbage does she have in storage now?
19. You receive a shipment of 144 loaves of bread. You use 12 loaves of bread each day. How many days worth of bread do you have?
20. You are planning on preparing blueberry mini-muffins for breakfast on Friday. Each student should get three mini-muffins. You are expecting 435 students for breakfast on Friday...how many muffins do you prepare?

## Measurement

21. How many cups are in 2 gallons of milk?

22. How many ounces are in  $\frac{1}{2}$  pound?

23. For the following indicate if the measurements are greater than ( $>$ ), less than ( $<$ ), or equal ( $=$ ) to each other.

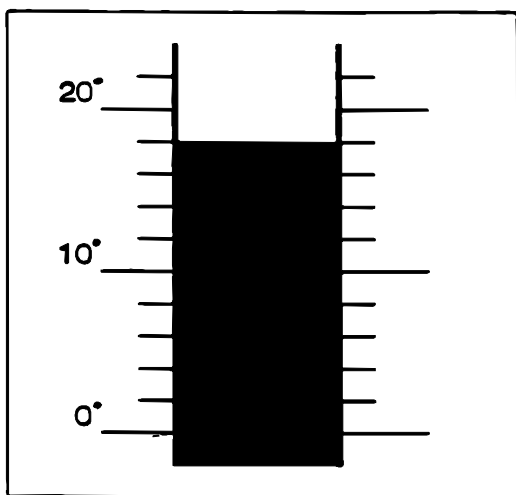
2 quarts 1 pint \_\_\_\_\_ 6 pints

3 cups \_\_\_\_\_ 2 pints

3 gallons 4 quarts \_\_\_\_\_ 4 gallons

24. Using the thermometer shown in the illustration, what temperature would be shown if the temperature rose 7 degrees?

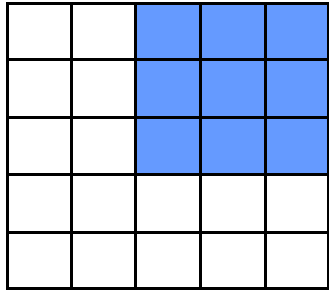
\_\_\_\_\_



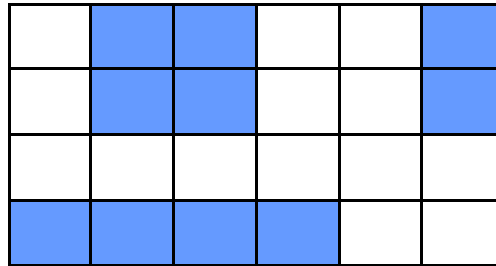
**(Skills Assessment Continued)**

**Fractions**

25. The following represent cakes of cornbread. The shaded blocks represent how many pieces of cornbread have been used. Write the fraction that represents this.



\_\_\_\_\_



\_\_\_\_\_

26. Reduce the following fractions to their lowest terms:

6/8 of an orange \_\_\_\_\_ 14/12 of a pizza \_\_\_\_\_

27. Which of the two numbers from above represents the smaller amount?

\_\_\_\_\_

**Decimals**

28. For lunch Amy buys an apple for \$.56, a chicken sandwich for \$2.15, a bag of pretzels for \$.88 and a drink for \$1.05. How much does Amy owe for her lunch?

29. Using the same numbers from above, if Amy hands you \$5.00, how much do you owe her in change?



**(Skills Assessment Continued)**

30. You have 7 cans of green beans. Each contains 14.75 ounces of vegetables.  
How many ounces of green beans do you have?
31. Using the numbers from above, if you use 29.5 ounces to make a green bean  
casserole, how many casseroles can you make?

# Answer Key

## Customer Service, Communicating in a Cooperative Workplace, Reading Skills

1. True (section 2, page 4)
2. True (section 3, page 6)
3. False. The definition is the technical definition (section 11, page 4)
4. Communication is the exchange of information. (section 3, page 3)
5. Numbers 1, 3, and 4 are all strategies to help you remember what you read.
6. True (section 13, page 3)
7. False: (section 14, page 11)
8. True (section 15, page 7).

## Number Recognition

9. b. Tens
10. 3 Thousands 7 Hundreds 2 Tens 5 Ones
11. four hundred fifty six 456  
two million three hundred forty thousand one hundred 2,340,100
12. 87.45 EIGHTY SEVEN AND FORTY FIVE HUNDREDTHS  
16.032 SIXTEEN AND THIRTY TWO THOUSANDTHS

## Rounding and Estimating

13. 426 cans of apple juice 430  
36 baking pans 40
14. 698.0326 pounds of chicken 698.033  
5.12397 pounds of bananas 5.124

**(Skills Assessment Answer Key Continued)**

15. Justin owes approximately \$4.60.

16. \$15.40

**Whole Numbers**

17. 1079 pounds of meat

18. 512 pounds of cabbage

19. 12 days

20. 1305 mini-muffins

**Measurement**

21. 32 cups

22. 8 ounces

23. 2 quarts 1 pint  $<$  6 pints

3 cups  $<$  2 pints

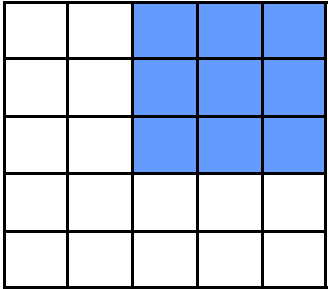
3 gallons 4 quarts  $=$  4 gallons

24. 25 degrees

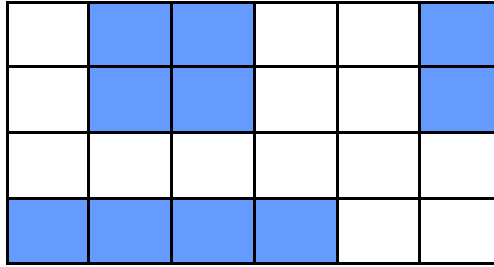
**(Skills Assessment Answer Key Continued)**

**Fractions**

25.



$9/25$



$10/24$  or  $5/12$

26.  $6/8$  of an orange  $3/4$   $14/12$  of a pizza  $1\ 1/6$

27. Which of these two numbers represents the smaller amount?  $3/4$

**Decimals**

28. \$4.64

29. \$.36

30. 103.25 ounces

31. 3.5 casseroles



# Customer Service



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# CUSTOMER SERVICE

## INTRODUCTION



“Eat, drink and be merry!” is the name of this module designed to address customer service in food service. Most people would guess that the most important part of food service is the food. Common sense, right? Hold on! The most delicious food can have no taste at all if a person feels so bad, is so embarrassed or is so intimidated he/she doesn't even know what he/she is eating.

Mealtime should be a pleasurable experience when nutritional needs are met and social exchanges are enjoyed.

Food service employees create the atmosphere in cafeterias, and the attitude of each and every food service employee contributes positively or negatively to that atmosphere, just by the look on his/her face.



One Hour

Upon completing this module, participants will:

1. Recognize the importance of attitude on the work environment.
2. Understand the steps to developing positive work attitudes.
3. Understand the relationship between good work attitudes and good customer service.
4. Demonstrate good customer service.



# **OBJECTIVES**

- 1. Recognize the importance of attitude on the work environment.**
- 2. Understand the steps to developing positive work attitudes.**
- 3. Understand the relationship between good work attitudes and good customer service.**
- 4. Demonstrate good customer service.**

## IMPORTANCE OF ATTITUDE



Think back to your days in elementary school. Do you remember lunchtime as one of your favorite times of the day — possibly second only to recess? Many children will tell you that recess and lunch are their favorite “subjects”!

Think about the lunchroom manager and the assistants. Were they pleasant, smiling ladies who gave you piping hot delicious food and enjoyed seeing you smack your lips in anticipation?

Did you actually have a favorite meal at school and looked forward to the day of the week it was served every week?

When the basic needs of children are met in an inviting atmosphere by adults who care about them, much more than just nutritional needs are met.

**RATIONALE:** Employees of food service must be flexible and creative! Food service in public schools has changed drastically and rapidly. There are new safety regulations, more vendor services, new program requirements, funding restrictions, new nutritional standards, and many sources of competition. Today’s students eat lots of different kinds of foods! Obviously, like many other service professions, the ability to be flexible is necessary for food service to survive.

You have probably heard the saying “you can’t do the same old thing and expect to get a different result”. YOU have to change !





Flexibility is determined in an individual by attitude. If food service employees bring an attitude of “I can do that” to work, the challenges of the work day will be opportunities instead of drudgery. The many changes that have occurred in food service have caused food service workers to have to be creative. Without the positive attitudes of flexibility and creativity, food service would cease to be a viable service in schools.

Negative attitudes on the part of food service employees would certainly have a negative impact.

(Note to instructor: Pause here to ask participants to name some negative effects of negative attitudes on food service. The ones named can be a product of their experiences or simply ones they think could possibly happen. These could be named orally only, listed on a flip chart, written on a blank overhead and/or discussed in depth. However, keep in mind this module is scheduled for one hour only.)



Some other possible negative impacts follow: the quality of meals would deteriorate, morale would suffer, service would be lacking, verbal communication would be difficult, cooperation would cease and the atmosphere of the cafeterias would not be a good place for children.



## **SHARING YOUR ATTITUDE**

On the other hand, positive attitudes can have positive impacts on the work environment.

(Note to instructor: Again, pause here and have participants think of positive effects of positive attitudes on their workplace. These can be based on experience or “the ideal situation”. Ask participants to share their ideas. Again, depending upon the amount of time available for this type of discussion, these ideas may be written or only mentioned orally.)

Positive attitudes can create peace and harmony, cooperation and friendliness, helpfulness and caring. There is much work to be done in a school nutrition program. With positive attitudes, working with and for the good of children can be a rewarding job. Positive attitudes create good emotional climates. Working in a place where people like, respect and help each other is not only a pleasant working environment, but is the right work model for students to observe.

Positive attitudes are contagious! It has been observed that the attitude of the school nutrition staff has a greater influence on the image of the program than any other factor.

Think back once again to your elementary days and memories of lunchtime and the lunchroom staff. Are your memories pleasant ones? If so, chances are that other parts of your days were also pleasant!

(Note to instructor: Ask participants to think about walking in the door at work this morning. Did the first person they saw smile and say “good morning” or frown? Perhaps the first person they saw said nothing or ignored them completely. Ask the participants to try to remember how that first greeting (or lack of) made them feel.)



Now ask two participants to stand up. Ask one of them to go outside the classroom door and wait until you call him/her in. Ask the other person to stand right inside the classroom door. After the first person leaves the room, instruct the second person to greet the person who will return to the classroom with a snarl and a grumpy disposition. A negative greeting may be something like, “What are you doing back in here? I thought the teacher told you to get out! We don’t want to see your face again!” Call the first person who left the classroom back inside. Ask the rest of the class participants to note the reaction of the person entering. **CAUTION!** Pick someone from the class that has a dominant personality to leave and re-enter the class. A shy person will be **VERY** uncomfortable!

Note to instructor: Now, reverse the situation. Have the same person leave again, but this time be greeted pleasantly when he/she returns. Ask the rest of the class to note the reaction. Ask both persons to describe how they felt greeting



about the two different greetings.

The point of the role play is that your attitude determines how others react to you. If you go to work with a smile on your face and a cheerful demeanor, others will “mirror” your mood.

Would you rather buy an item in a store from a happy, helpful clerk or a rude, grumpy one? Food service is the same way. Students would rather receive food from cheerful, smiling servers than those whose face might break if they smile!

Most children smile back at you when you smile at them. Children love to please, so they watch adults to see if the adults approve of them. If your attitude is negative, children may think they have done something wrong. They may think it is their fault that you are unhappy. Or they may be so shy they won't say anything, but don't be fooled! Even if they don't say anything, they are still judging your reaction to them. Children have grown up watching the adults around them and assessing the moods of those adults. They will respond to you the way you treat them.



Some children may be so uncomfortable around adults that are negative that they refuse to eat in the cafeteria. How long will you be needed as a cafeteria assistant if there are no children to serve?

The real issue here is that schools are for children and everything that happens in schools should be designed to meet the needs



## **STUDENTS: OUR EXTERNAL CUSTOMER**

of children. Food service is a support service to satisfy the basic need of food for students so they can concentrate on learning.

Students do not come to school to be perfect angels in the cafeteria. Remembering that the cafeteria employee is the adult and the student is a child will increase the patience of the adult and perhaps cause the adults to try hard to model positive attitudes and behaviors.

Students are the customers of school food service programs. We can treat customers as if we are glad they chose us to supply their meals, or we can treat them as if they are interruptions in our day.

Communicate positively with students. You can say the same thing different ways and get totally different responses from students.

(Note to instructor: Ask two different participants to play the part of a cafeteria employee and an elementary school student. Send the “student” outside the door of the classroom and say you will call him/her when you want him/her to come back in as if he/she is coming through the school lunch line to get his lunch. After he/she has left the room, tell the second participant to act like a server with a spoon in hand and to ask the “student” if he/she wants brussel sprouts put on his plate,



**T 1- 4**

## **INTERNAL CUSTOMERS**

in a real mean voice. Ask the rest of the class to note the reaction of the “student”.)

Explain that the server could have just as easily said the same thing in a pleasant tone of voice and the student may have been willing to try brussel sprouts. Remind the participants that after all, school food service employees are trying to teach good eating habits along with providing nutritionally balanced meals to students.

If you like children and you enjoy your job, your attitude will show it!

(Note to instructor: Show **transparencies 1-4** and ask participants to react the way they think students would react to the four pictures.)

Internal customers in school food service are adults who eat in the cafeteria. They may include teachers, administrators, parents, guests or visitors to the school. The service and reception they receive in the cafeteria will help them form an overall positive or negative impression of the school. Everyone enjoys a good meal in a pleasant atmosphere. Use your positive attitude to help your school be the place folks in the community want to eat breakfast and lunch!

1



- T1



2



T 2



3



T 3

4

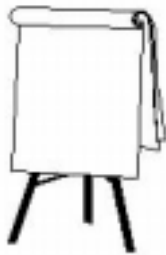


T 4



**T 5**

## **SUMMARY**



(Note to instructor: Show the last transparency and ask the participants to react to the cartoon. Is it true?)

As a closing activity, have students divide themselves into pairs and describe to each other the qualities of a positive school food service employee. After five to ten minutes, ask each pair to share one quality you can write on a flip chart. When all pairs have given their quality, ask all participants to reflect on their attitudes at work. Do they demonstrate the qualities listed? Are there some qualities they would like to develop? Have each participant make two columns on a piece of paper at their seats. In the first column, ask them to write down the qualities from the generated list that they already have. Then in the second column ask them to write down one quality from the generated list that they want to develop. Under the quality written in the second column, ask the participant to write down steps on how they plan to develop that quality or display that attitude. Ask them to write very specific actions they plan to take. For food service employees who work together, they can check with each other during the school year to see if they have made progress toward their goal. They can also support and encourage each other in the effort to provide good customer service.

5



T 5



# Communicating in a Cooperative Workplace



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# COMMUNICATING IN A COOPERATIVE WORKPLACE

## INTRODUCTION



Communication plays an important role in determining how well people work together in a work environment to accomplish goals. Poor communication often causes frustration, lost time and negativity in the workplace. Good communication can lead to increased productivity, improved employee and client satisfaction and the teamwork necessary to accomplish goals.

In the school nutrition program, good communication skills can help produce satisfied customers who use our services and encourage others to buy meals, too. Poor communication can lead to dissatisfied customers who choose not to eat in the school lunchroom and discourage others from participating in our program, as well.

Each of us has a responsibility to communicate effectively and positively with our team.

One Hour

Upon completion of this module, participants will:

1. Understand the communication cycle.
2. Realize the importance of listening well.
3. Use effective communication techniques.
4. Consider coworkers as team members.
5. Understand strategies for establishing a cooperative workplace.



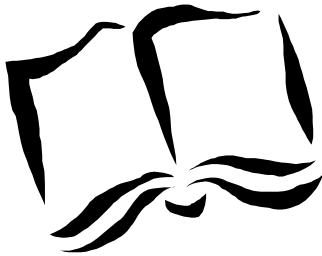
# **OBJECTIVES**

- 1. Understand the communication cycle.**
- 2. Realize the importance of listening well.**
- 3. Use effective communication techniques.**
- 4. Consider coworkers as team members.**
- 5. Understand strategies for establishing a cooperative workplace.**

## COMMUNICATION



## STUDENT MANUAL



3-1

## COMMUNICATION CYCLE



T 1

Communication is the exchange of information. It is a job skill that is necessary to cooperate with coworkers, give directions or assistance, receive instructions or correction, and serve customers. Exchanging information begins with the transmitting of a thought or idea from one person to another. This transmission may include verbal language (words), body language (gestures), vocal inflections (tone and volume of voice) and facial expressions.

Let's check our present level of skill.

(Note to instructor: Refer to the communication skills assessment sheet (page 3-1) in the Student Manual. Have them complete and hold it until later to check.)

Both the sender of the message and the receiver of the message determine the effectiveness of the exchange. Also affecting the transfer of information is the message itself as well as the channel used to exchange ideas.

The sender is the person talking. The receiver is the person listening. The sender must present accurate information through an appropriate channel, and the receiver must correctly interpret the meaning of the message and the intention of the sender. This process is called the communication cycle.

(Note to instructor: Show **Transparency 1**, the communication cycle, to the participants and explain it as explained hereafter.)

The sender initiates the communication because he/she has something he/she wants the receiver to know, understand, or do.



# COMMUNICATION SKILLS ASSESSMENT

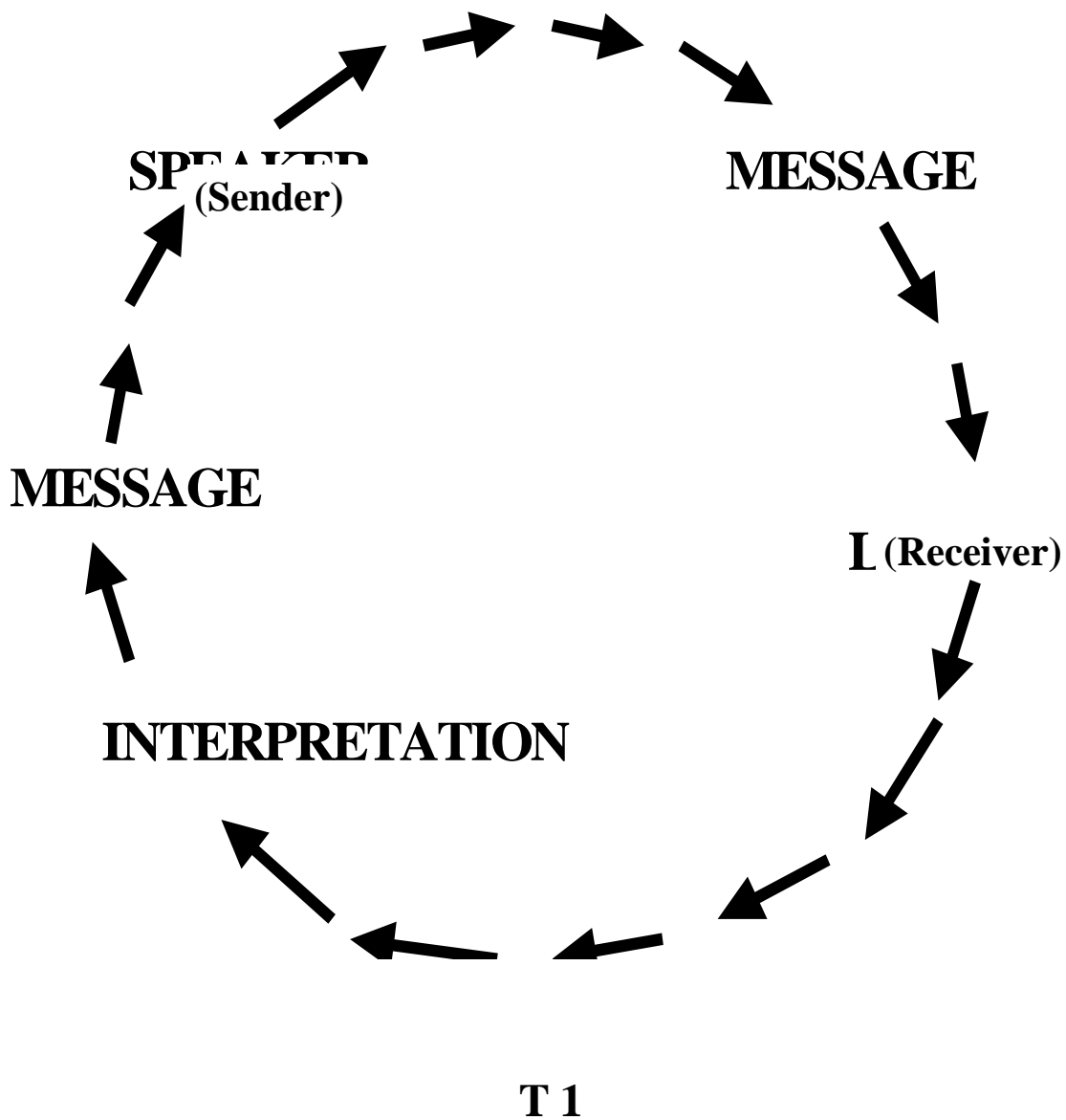


*Directions:* Circle the number that most closely relates to how often you demonstrate the described behavior.

- 1 = never
- 2 = sometimes
- 3 = often
- 4 = frequently
- 5 = always

- |    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| 1  | I listen, repeat, and clarify information.  | 1 | 2 | 3 | 4 | 5 |
| 2  | I encourage others to express their ideas, opinions, disagreements, and feelings. | 1 | 2 | 3 | 4 | 5 |
| 3  | I use communications as a way to develop a climate of trust.                      | 1 | 2 | 3 | 4 | 5 |
| 4  | I put myself in the speaker's place to understand the message better.             | 1 | 2 | 3 | 4 | 5 |
| 5  | I listen with an open mind to people whose ideas or opinions differ from my own.  | 1 | 2 | 3 | 4 | 5 |
| 6  | I am able to control my emotions when listening or speaking.                      | 1 | 2 | 3 | 4 | 5 |
| 7  | I do not interrupt while others are speaking.                                     | 1 | 2 | 3 | 4 | 5 |
| 8  | I can readily make the transition from speaker to listener.                       | 1 | 2 | 3 | 4 | 5 |
| 9  | I control my body language, vocal and facial expression.                          | 1 | 2 | 3 | 4 | 5 |
| 10 | I freely share information with other team members.                               | 1 | 2 | 3 | 4 | 5 |

# THE COMMUNICATION CYCLE



## THE ROLE OF THE SENDER



### T 2

The communication cycle process requires that the sender consider the following :(**Show Transparency T2**)

1. The sender determines the purpose of the communication. Why does the communication need to take place?
2. The sender considers the audience. Who is the listener? What does the listener already know about the topic?
3. The sender understands the message. What are the facts? Can the facts be organized to be understandable?
4. The sender chooses the volume of voice, rate of speech, tone of voice and non-verbal cues (body language and facial expressions) to use.

The sender sends the message and then checks for understanding on the part of the listener or receiver. The most effective communication takes place when the receiver interprets the message the way the sender intended. The sender can check for understanding by asking the receiver for feedback. When feedback from the receiver to the sender occurs, two-way communication has taken place. Both the sender and the receiver are more comfortable when two-way communication is allowed. The accuracy of the message becomes clear.

An example of the two-way communication process is a cafeteria manager giving instructions about the preparation of a new recipe to an assistant. The assistant asks questions. This two-way discussion may take more time than one-way communication, but is more accurate, and the level of confidence of both people is higher. Two-way communication is the best method.

## **THE ROLE OF THE SENDER**

1. Determine the purpose of the communication. Why does the communication need to take place?
2. Consider the audience. Who is the listener? What does the listener already know about the topic?
3. Understand the message. What are the facts? Can the facts be organized to be understandable?
4. Choose the non-verbal language.
5. Send the message.
6. Check for understanding by asking for feedback.

**T 2**



## ROLE OF THE RECEIVER



T 3

It is important at this point to realize that non-verbal messages communicate as well. One of the most important components of communicating is how well you are dressed. This may seem strange, but if you are dressed inappropriately or have poor hygiene, you will send a negative message to your customers and they will not want to eat your food. **Have students list non-verbal messages they feel are appropriate or inappropriate. Some suggestions may be slouching, messy hair, and dirty finger nails for inappropriate messages. Smiling, good posture and hair that is pulled back may be deemed appropriate.**

The role of the receiver in the communication process is just as critical to accuracy as the role of the sender. Listening is an important skill and involves more than simply hearing. Hearing is receiving sound. Listening is hearing sound, interpreting the sound, and understanding its meaning. As with sending a message accurately, effective listening requires specific strategies. **(Note to instructor: Use the transparency to illustrate the strategies of listening.)**

Role of the receiver:

1. Listen for a purpose. A decision must be made to give attention to what is being said. Some information may not be important, but discriminating between necessary and unnecessary information takes careful listening.
2. Concentrate on the message. Don't be distracted by outside noises or activities. Follow major points being made by the speaker and take in non-verbal cues as well.
3. Check for accuracy by paraphrasing what was heard. Give the speaker feedback on the interpretation.
4. Ask questions to clarify facts or clear up any misunderstandings or uncertainties.
5. Organize the information mentally or write brief notes, if necessary.

## **THE ROLE OF THE RECEIVER**

1. Listen for a purpose.
2. Concentrate on the message.
3. Check for accuracy by paraphrasing.
4. Ask questions.
5. Organize the information mentally.
6. Be aware of non-verbal responses such as facial expressions and body posture.



**T 4**

## **IMPORTANCE OF GOOD COMMUNICATION**

6. Be aware of non-verbal responses as a listener. Erect body posture, concerned (not puzzled) facial expression and constant eye contact show alertness and interest in listening. Nodding the head and smiling reflect the degree of understanding and the reaction of the listener to the message's meaning.

Applying the strategies of listening will improve basic communication skills. By listening better, we can help prevent misunderstandings and avoid breakdowns of the communication process. Listening better will increase our abilities to work more productively with coworkers and managers.

Listening effectively is harder to do than talking. Listening is harder to control and takes practice to perfect. Remember, we have only one mouth, but we have two ears. By sheer equipment, we should listen twice as much as we speak. The more we practice listening, the better we will become at it.

(Note to instructor: Use the "Total Listening Activity" to demonstrate effective listening skills. Transparencies with directions are included.)

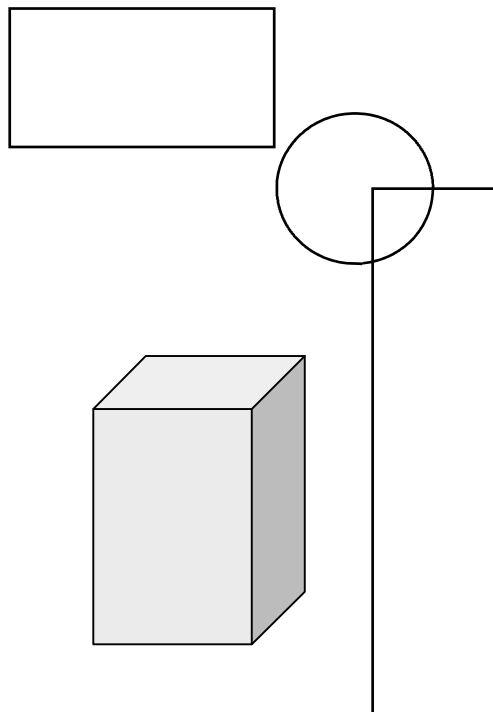
Good communication is vital to good teamwork. Good teamwork results in getting the job done right! Since the staff of every cafeteria must take in and use information, everything that is accomplished is based on the written or spoken word. Team members exchange information constantly during the planning, preparing, serving and cleaning up

# TOTAL LISTENING ACTIVITY

## PART ONE

### Instructions:

- Choose a partner and sit with your back to one another
- Choose one to receive the instructions and draw a series of objects
- The other partner will be giving the instructions
- The partner giving the instructions is the only one that can speak
- At no time can either one turn to ask questions or look at their paper
- Sit quietly when you feel you have completed the assignment

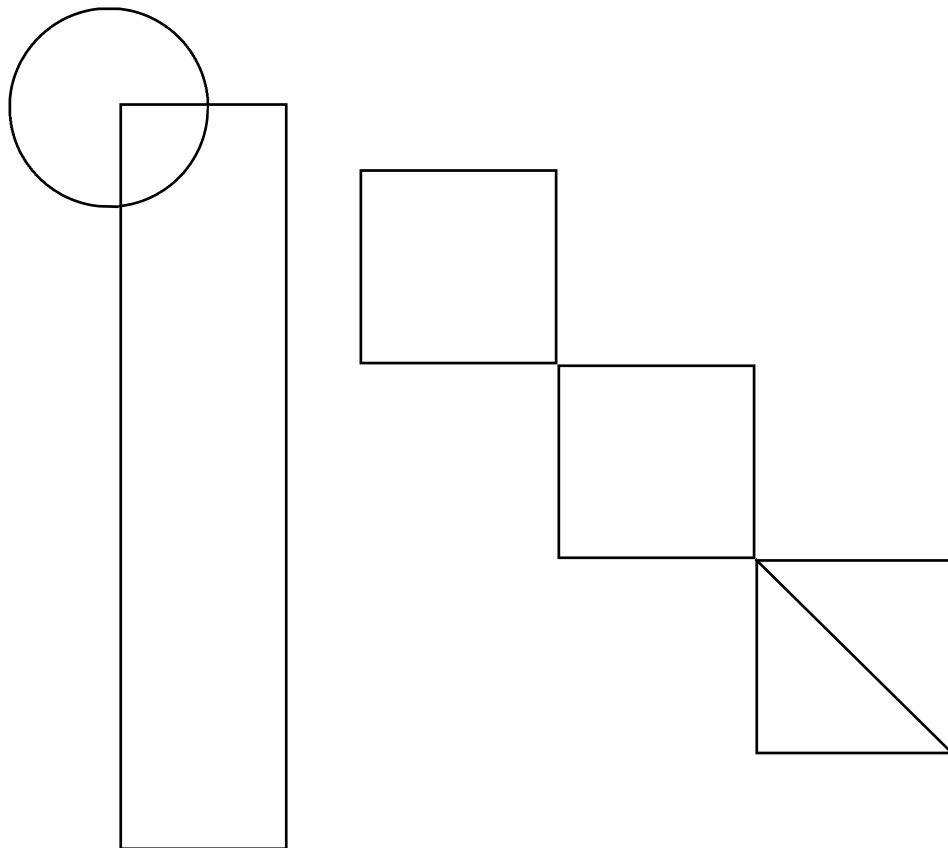




## PART TWO

### Instructions:

- Choose a partner and sit where you can verbally interact, but in a position that will not allow papers to be viewed
- Choose one to receive the instructions and draw a series of objects
- The other partner will be giving instructions
- Questions may be asked and clarification given as needed, however, do not view the drawings held by the other person
- Sit quietly when you feel you have completed the assignment





## SKILL APPLICATION



of meals. Teamwork means everyone communicates well in all ways.

We have already learned that verbal communication involves speaking and listening. We have learned that non-verbal communication involves body language. Non-verbal communication also involves the way we act, the way we say our words, the way we keep our work areas, the way we do our work and our attitudes. If we say we take pride in the meals we serve our students, but throw food together and serve messy trays, we communicate by our actions that we don't care. Have you heard the old adage, "actions speak louder than words"? It's true! Making sure actions and words communicate the same message lend credibility to our reputations as dedicated employees.

Teams work together to accomplish goals and all members of the team need to be able to depend on each other to communicate effectively. The cafeteria staff operates as a team. As school employees, the cafeteria staff is also part of the school team. Teamwork gets jobs done more efficiently, makes the day more pleasant, gives the best possible service to customers and helps the entire school function better.

(Note to instructor: Ask participants to name some jobs they perform during a typical school day that require teamwork. Ask them to describe the types of communication they use to accomplish the jobs as a team.)



## T 5

Now let's get out the Communication Skills Assessment sheets we completed earlier. They should be scored by totaling the number of points you gave yourself on each skill. Using the following scale, rate yourself on your skills:

SCORE	INTERPRETATION
43 or above	Excellent
35 - 43	Good
26 - 34	Fair
Below 25	Needs Improvement

(Note to instructor: Use the Score/ Interpretation transparency to show participants their level of communication skills.)

Use each skill (items one through ten) to ask yourselves:

What do I do well?

Where is there room for improvement?

What should be my target area(s) for improving my communications with my team members?

Now, as a team of nutrition employees, think of ways communication overall can be improved in your particular school. Write a plan with specific areas you plan to address as a team when you return to school.

(Note to instructor: Have participants read their plans aloud to the entire class as a summary of this module of instruction.)

# COMMUNICATION SKILLS ASSESSMENT

## SCORING GUIDE

<u>Score</u>	<u>Interpretation</u>
43 or above	Excellent
35— 43	Good
26— 34	Fair
Below 25	Needs Improvement

T 5



# Math Skills



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# MATH SKILLS

## INTRODUCTION



Math is central to the daily work of the Food Service Assistant. Consider the following common situations:

1. How many students do we estimate serving today?
2. How many cans of fruit do I need for the salad?
3. How many pieces of cornbread can be cut from this pan?
4. How many cups of flour are needed in recipe #342?
5. What size pan is used for the cake?
6. If we used 40 lbs. of the 95 lbs. of beef delivered on Monday, how much is left for Friday's menu?
7. What size scoop is used to serve the vegetable?
8. What portion of the gallon of milk is used in the recipe?
9. How much is charged for an extra apple?
10. If we need 600 pieces of cornbread and we can cut 20 from each pan, how many pans should I prepare?

Each of these situations requires number recognition and/or working with numbers. Many also require the application of a mathematical process or operation. Demonstrate the validity of this statement with several examples from the list given above:

- Number 1 illustrates number recognition and estimation
- Number 6 uses subtraction
- Number 8 relies on an understanding of fractions



- Number 9 uses decimals
- Number 10 requires division

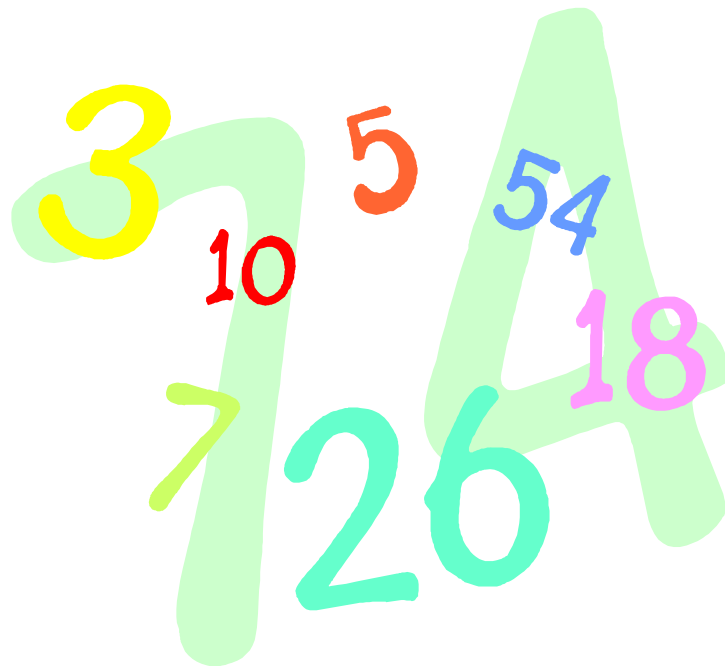
This section of the curriculum looks at the basic math skills which are utilized by school food service employees. Topics include:

- Number Recognition
- Rounding and Estimating
- Operations with Whole Numbers
- Fractions
- Decimals

A separate unit of instruction is provided for each skill area. The Skills Assessment given at the beginning of the course may be used to identify individuals who have sufficient skill proficiency in a given area and who may be allowed to omit that portion of the math coursework. The instructor may, however, choose to include all participants in the instruction, using each unit for skill review and practice.



# Number Recognition



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)



# NUMBER RECOGNITION

## INTRODUCTION



We use numbers everyday for many things. We may be keeping records of the number of hours we work, the amount of money left after fixed expenses, or the miles we travel to work. One of the most important uses we have for numbers is communicating information in the workplace. Mistakes made in this communications effort can be costly and even dangerous.

Numbers are the symbols we use to express amounts. The arrangement of the symbols gives the numbers their meaning. Each digit in a whole number has a place value expressed in a base-ten number system.

Upon completion of this module, the participant will:

1. Understand the place value system.
2. Demonstrate accurate recording of numerical information using place value charts.
3. Effectively communicate numerical information to classmates.

30 minutes



# **OBJECTIVES**

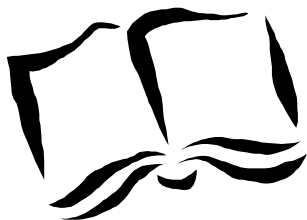
- 1. Understand the place value system.**
- 2. Demonstrate accurate recording of numerical information using place value charts.**
- 3. Effectively communicate numerical information to classmates.**

## PLACE VALUE



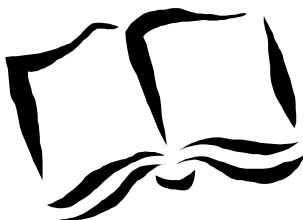
**T 1**

## STUDENT MANUAL



**5-1**

## SKILL APPLICATION



**5-2**

Show a transparency of the Place Value Chart (page 5-1 in the Student Manual). Start by using only the portion of the chart to the left of the decimal point (representing whole numbers). A discussion of decimals will follow later in the math section of the coursework.

Demonstrate the concept of place values by having students suggest numbers for you to show on the chart. Start with single digit numbers and progress to larger numbers that show each of the place values represented on the chart.

After demonstrating the concept, provide each student with a copy of the Place Value Chart. Provide a list of numbers, which can be written on a flip chart, for students to call out to each other for recording on the place value charts. The objective of this exercise is that the trainees are able to both record and communicate the numerical information. Check for understanding by reviewing the charts for accuracy and by having students volunteer to demonstrate (on your transparency) the recording of numbers that you call out.

Have students practice writing out different number as words. Check their work for understanding. Next, write out in words various numbers on an overhead or chalkboard and have students write them as numbers. Again, check for understanding.

Provide the students with practice by having them complete the exercises in their student manual on page 5-2.



# Number Recognition Worksheet

Answer the following questions using the recipe below.

## Tropical Apples

Ingredients	100 servings		Directions
	Weights	Measures	
Apples, Canned, Sliced		4 #10 cans	1. Pour one can of apples into each of 4 pans – 12x20x inches.
Sugar	5 lb.	$\frac{3}{4}$ gal.	2. Mix together sugar and flour. Stir into butter or margarine.
Flour	12 oz.	3 cups	3. Add juices and lemon rind. Cook until clear. Add food coloring.
Butter or Margarine, Melted	2 lb.	1 qt.	4. Pour about 1 qt sauce over apples in each pan.
Orange Juice		3 cups	5. Bake at 350°F for 30 minutes.
Lemon Juice		1 cup	
Pineapple Juice		3 cups	
Lemon Rind	1 oz.	$2\frac{1}{3}$ Tbsp.	

SERVING:  $\frac{1}{2}$  cup – provides  $\frac{1}{2}$  cup fruit.

### VARIATION:

TROPICAL PEARS – Use 6 #10 cans diced pears, drained. Follow basic recipe.

1. Write out, in words, how many ounces of flour it takes to make 100 servings of Tropical Apples.

\_\_\_\_\_

2. If you were to use this recipe with pears, how many cans of pears would you use?

\_\_\_\_\_

3. The ingredients are to be baked at 350 degrees. Identify the place value position of each number.

3 \_\_\_\_\_      5 \_\_\_\_\_      0 \_\_\_\_\_

4. Write the following words as numbers:

six hundred fifty nine students \_\_\_\_\_

twenty nine cans of apples \_\_\_\_\_

5. This recipe makes 100 servings. What place value position is the one in?

a. Ones                      b. Tens                      c. Hundreds                      d. Thousands

# Number Recognition Worksheet Answer Key

1. Twelve Ounces

2. 6 cans

3. 3 Hundreds

5 Tens

0 Ones

4. 659 students

29 cans

5. c. Hundreds



# Rounding and Estimating



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# ROUNDING AND ESTIMATING

## INTRODUCTION



Before starting this unit, it may be helpful to review the concept or definition of mathematical estimation with the class.

Estimation is the mental process of determining an amount that is close to the exact mathematical answer.

Ask the participants to discuss why estimating and rounding numbers are important skills. A few responses might be:

- it is quicker than figuring on paper with a pencil
- it can be done in your head
- if you need a general idea and not a specific amount.

Next, ask the group for examples of how they use rounding and estimating in their daily routines both on and off the job. They might respond:

- to get an idea of how much something costs
- to determine if the correct amount of change was received
- to figure out if there is enough time to do something or how long a process should take
- to make a guess if there is enough gas in the car to get to a given point.





## ROUNDING AND ESTIMATING



T 1

Upon completion of this module the group should be able to:

1. Explain the concept of rounding and estimating.
2. Give examples of how they use rounding and estimating both on and off the job.
3. Identify a number line as a way of expressing how to estimate and round numbers.

30 Minutes

Rounding and estimating is a skill that we all use often, even everyday, if we realize it or not. Here's how it works.

When you **round off** a number, you are simply finding a whole number that is close to that number and easy to work with. Numbers that end in zero are usually easy to work with.

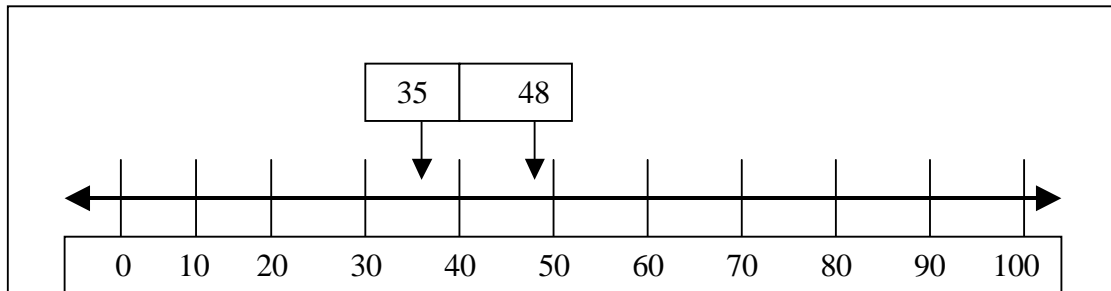
Using a number line is a good way to see how rounded numbers work. Using the number line on the transparency (T1) ask the class if they can see that 48 is between 40 and 50. Explain that they should also be able to see that 48 is closer to 50 than it is to 40. Therefore, you can say that 48 rounded to the nearest 10 is 50. Ask if there are any questions.

Be sure to explain that when a number is exactly between two numbers, round up to the higher number. For example, 35 should be rounded to 40, not 30.

# OBJECTIVES

- 1. Explain the concept of rounding and estimating.**
- 2. Give examples of how they use rounding and estimating both on and off the job.**
- 3. Identify a number line as a way of expressing how to estimate and round numbers.**

# Rounding



**T 1**

Explain that rounding to the nearest hundred or thousand works the same way; that it is just a matter of deciding what the closest hundred or thousand is to the number being worked with. Demonstrate with several larger numbers. For example,  
483 is rounded to 500  
1321 is rounded to 1300

## ROUNDING DECIMAL NUMBERS

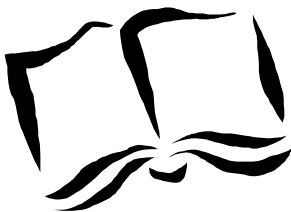


A great deal of estimating in food service is involved with food costs and payments. While many of these transactions in the school food service program are completed using a computerized accounting system, it is still important to understand the figures involved and to be able to recognize when a cost figure is inaccurate. For example, if a student purchased a meal costing \$1.87 and you recognize on the computer screen that he/she is to receive change of \$4.13 from the \$5.00 bill with which he/she paid, you could quickly estimate that this is inaccurate (explaining that \$1.87 rounds up to \$2.00, which would indicate change of roughly \$3.00).



**T 2**

## STUDENT MANUAL



**6-1**

The following rules apply when rounding decimal numbers.

- Decide to which place value you want to round the number. Call this the “round to” number.
- Look at the digit to the immediate right of the “round to” number. If it is 5 or higher, add one digit to the “round to” . If it is 4 or lower, leave the “round to” number unchanged.
- Drop all digits to the right of the “round to” number.

### **Example:**

Round 0.1465 to the nearest hundredth.

Step 1

round to the nearest hundredth

Step 2

the number to the immediate right of the “round to” number is 6 and we add 1 to the “round to” number  
0.1565

Step 3

drop all digits to the right of the “round to” number  
0.15

Refer to the Place Value Chart, page 6-1 in the student manual, to provide additional practice. While

## **Rules For Rounding Decimals**

- ◆ **Decide to which place value you want to round the number. Call this the "round to" number.**
- ◆ **Look at the digit to the immediate right of the "round to" number. If it is 5 or higher, add one digit to the "round to". If it is 4 or lower, leave the "round to" number unchanged.**
- ◆ **Drop all digits to the right of the "round to" number.**

# Place Value Chart

Ten millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	<b>And</b>	Tenths	Hundredths	Thousandths	Ten Thousandths
								•				
								•				
								•				
								•				
								•				
								•				
								•				
								•				
								•				
								•				
								•				

# Place Value Chart

Ten millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	<b>And</b>	Tenths	Hundredths	Thousandths	Ten Thousandths
				7	4	9	4	•				
				7	4	9	0	•	Round To Tens			
				7	5	0	0	•	Round To Hundreds			
				7	0	0	0	•	Round To Thousands			
							0	•	0	3	6	9
	Round To Tenths						0	•	0			
	Round To Hundredths						0	•	0	4		
	Round To Thousandths						0	•	0	3	7	
	Round To Ten Thousandths						0	•	0	3	6	9
								•				



the principle should be demonstrated using larger numbers, point out that the food service assistant will use rounding of decimals mainly in relation to dollar values. Emphasis should, therefore, be placed on working with numbers showing tenths and hundredths.

## **SKILL APPLICATION**



## **STUDENT MANUAL**



**6-2 & 6-3**

Have students complete the “Rounding and Estimating Practice Skill Application” (pages 6-2 through 6-3 in their Student Manual) as a summary review of the concept of rounding and estimating. The instructor should review each step in these examples in order to check for understanding.

## Rounding And Estimating Practice Skill Application

1. A recipe for yeast rolls yields 200 servings. Round the number of students shown below to the nearest hundred in order to determine if the recipe needs to be changed to yield more servings.

183	349
215	379
250	398
263	407
289	451

2. You are buying a CD from a department store. The total price of the CD is \$13.83. You give the clerk a twenty. Estimate the amount of change you should receive by using rounding and estimating skills.
  
3. You earn \$6.85 per hour. Your normal work week is 21 hours long. What is your estimated income with no deductions?

## **Rounding And Estimating Practice**

4. A student buys a small salad for \$1.00 and 1 breadstick for 75 cents, in addition to the \$1.30 meal combo for the day. Using estimation, would you determine the total to be \$2.00, \$3.00, or \$4.00?
  
5. Approximately 600 students will be served on a typical day. However, today 218 students will miss lunch due to a field trip. If the recipe for lasagna serves 200, how many recipes should be prepared to feed the number of students anticipated? Use estimation to determine your answer.

# Answer Sheet

1.            183 is rounded to 200            349 is rounded to 300  
              215 - 200                            379 - 400  
              250 - 300                            398 - 400  
              263 - 300                            407 - 400  
              289 - 300                            451 - 500

2. Round \$13.83 up to \$14.00  
    The estimated cost is \$14.00. The estimated change is \$6.00.

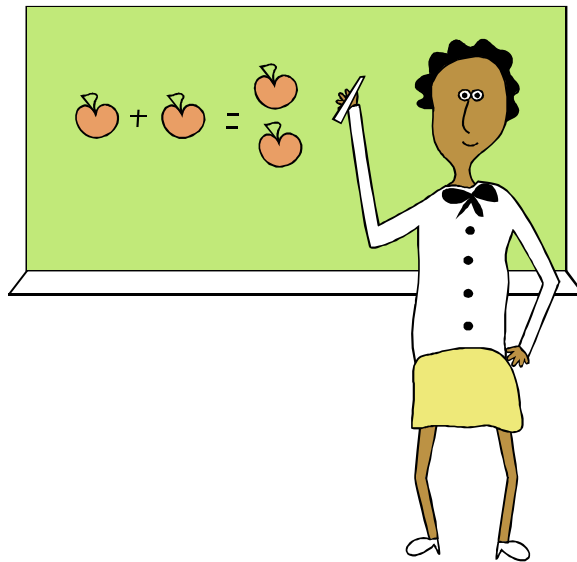
3. Round \$6.85 to the nearest dollar or \$7  
    Round the number of hours worked to 20.  
    Your estimated income would be \$7 X 20 hours or \$140.

4. \$3

5. 2



# Operations with Whole Numbers



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# OPERATIONS WITH WHOLE NUMBERS

## INTRODUCTION



It is difficult to imagine a day without using math in some form. A job may require that you determine the amount of a given raw material that is needed for production, you may need to compute the amount of gas your car consumes, or you may need to determine the amount of sugar for a partial recipe. All of these activities require the use of math on some level.

This module is intended to provide information that will assist you in basic mathematics operations and to serve as a refresher.

2 Hours

Upon completion of this module, the participants will:

1. Demonstrate the use of basic operations such as addition, subtraction, multiplication and division.
2. Apply these basic operations to practice exercises.



# OBJECTIVES

- 1. Demonstrate the use of basic operations such as addition, subtraction, multiplication, and division.**
- 2. Apply these basic operations to practice exercises.**

## ADDING WHOLE NUMBERS



T1/7-1



## CHECKING YOUR WORK

To add two or more numbers

- add from right to left beginning with the ones column
- regroup (carry) as needed.

Add

$$\begin{array}{r} 378 \\ + 295 \\ \hline \end{array}$$

Step 1.

$$\begin{array}{r} 1 \\ 378 \\ + 295 \\ \hline 3 \end{array}$$

Add the ones: 13  
write 3; regroup 10  
ones as 1 ten (carry 1).

Step 2.

$$\begin{array}{r} 11 \\ 378 \\ + 295 \\ \hline 73 \end{array}$$

Add the tens; 17.  
Write 7; regroup 10  
tens as 1 hundred  
(carry 1).

Step 3.

$$\begin{array}{r} 111 \\ 378 \\ + 295 \\ \hline 673 \end{array}$$

Add the hundreds.

The estimating skills that were learned in a previous module can be useful as a quick check of your answer.



## **Adding Whole Numbers**

To add two or more numbers

- add from right to left beginning with the ones column
- regroup (carry) as needed.

**T17-1**



## SUBTRACTING WHOLE NUMBERS



**T2/7-2**

Round 378 to 400 and 295 to 300. Then find the sum.

$$\begin{array}{r} 400 \\ + 300 \\ \hline 700 \end{array}$$

This method will point out obvious errors or regrouping (rounding) errors.

To subtract whole numbers, begin from the right and work left as in addition. To subtract two numbers:

1. subtract from right to left beginning with the ones column.
2. regroup as needed.

**NOTE:** regrouping is also called borrowing.

**Example:** subtract  $\begin{array}{r} 86 \\ - 37 \\ \hline \end{array}$

$$\begin{array}{r} 7 \\ \cancel{8} 6 \\ - 37 \\ \hline \end{array}$$

Regroup (borrow) 1 ten.

$$\begin{array}{r} 716 \\ \cancel{8} \cancel{6} \\ - 37 \\ \hline \end{array}$$

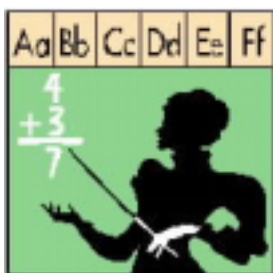
Add 10 to the 6 ones.  
 $10 + 6 = 16$

## **Subtracting Whole Numbers**

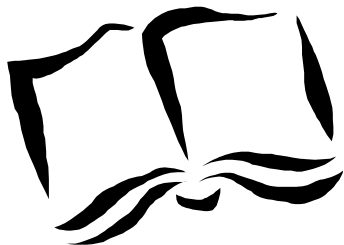
To subtract two numbers:

1. Subtract from right to left beginning with the ones column.
2. Regroup as needed. Regrouping is also called borrowing.

**T2/7-2**



## STUDENT MANUAL



7-3

$$\begin{array}{r} 7\ 16 \\ 8\ \cancel{6} \\ - 3\ 7 \\ \hline 4\ 9 \end{array}$$

Subtract.

Check your work by adding the *difference* (49) to the *subtractor* (37). The *result* should equal the *subtrahend* (86).

$$\begin{array}{r} 49 \\ + 37 \\ \hline 86 \end{array}$$

Have students complete the “Applied Practice” sheet found on page 7-3 in their Student Manual.

## APPLIED PRACTICE

The examples below apply the skills of addition and subtraction of whole numbers to workplace situations. Use the appropriate mathematical operation to find the correct answer.

1. A recipe calls for the following canned goods:

11 cans of green beans  
8 cans of corn  
10 cans of tomatoes

How many cans of product are used in the recipe?

2. You have been scheduled to prepare eighteen bag lunches for each day this week. On Thursday you learn that one group of 5 students will not need to be served. How many bag lunches should be prepared on Thursday?

3. A salad uses the following ingredients:

24 apples  
16 bananas  
12 oranges

How many pieces of fruit are needed?

4. Thirty boxes of chicken nuggets were delivered at the first of the month. The usage so far this month is as follows: 9 boxes used during week 1; 7 boxes used during week 2; 8 boxes used during week 3. How many boxes are left for the remainder of the month?

**7-3**

APPLIED PRACTICE  
ANSWERS

1. 29 CANS
2. 13 BAG LUNCHES
3. 52 PIECES OF FRUIT
4. 24 BOXES ARE USED; 6 BOXES ARE LEFT FOR THE REMAINDER OF THE MONTH

## MULTIPLICATION

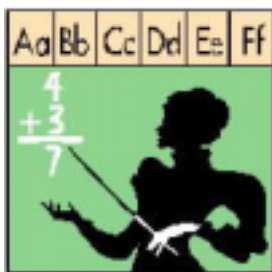


T4/7-4

## STUDENT MANUAL



7-5



To multiply two or more numbers:

- multiply from right to left, starting with the ones
- regroup (carry) as needed
- use zeros for place holders if it is helpful.

**NOTE:** use estimation to check your answer.

Refer participants to the Multiplication Table found on page 7-5 of their Student Manual. To demonstrate the use of the table, multiply 8 by 9. Locate 8 in the left column. Move across that row until you reach the column marked 9. The answer is 72.

**Example:** multiply 421 X 47.

$$\begin{array}{r} 1 \\ 421 \\ \times 47 \\ \hline 2947 \end{array}$$

Multiply 421 by 7. Begin in the ones column.  $1 \times 7 = 7$ ;  $2 \times 7 = 14$  write 4 and carry 1.  $4 \times 7 = 28 + 1$  carry = 29. Write 2947 as a **partial product**.

$$\begin{array}{r} 421 \\ \times 47 \\ \hline 2947 \\ 16840 \end{array}$$

Multiply 421 by 4.  $1 \times 4 = 4$ ;  $2 \times 4 = 8$ ;  $4 \times 4 = 16$ . Write 16840. The zero is used as **place holder**. This is the second **partial product**.

**Note:** 421 in this example is the *multiplicand* and 47 is the *multiplier*. The solution or result is the *product*.

## Multiplying Whole Numbers

To multiply two or more numbers:

- multiply from right to left, starting with the ones
- regroup (carry) as needed
- use zeros for place holders if it is helpful.

**T4/7-4**



# Multiplication Table

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144



## DIVISION



## T6/7-6



$$\begin{array}{r}
 421 \\
 \times 47 \\
 \hline
 2947 \leftarrow \text{partial product} \\
 16840 \leftarrow \text{partial product} \\
 \hline
 19787 \leftarrow \text{solution (product)}
 \end{array}$$

Add the two partial products.

**Remember:** one times any number is that number. Zero times any number is zero. You may also check your work by dividing the product by the multiplier. The solution must equal the multiplicand.

Division is a multi-step process that combines the skills that you have already developed or refreshed during the previous sections of this module. There are five steps used in sequence and repeated. These steps are:

- divide
- multiply
- subtract
- compare
- bring down the next digit

Divide 69 by 3.

$$\begin{array}{r}
 23 \\
 3 \overline{) 69} \\
 - \underline{6} \phantom{0} \\
 09 \\
 - \underline{9} \\
 00 \\
 \downarrow
 \end{array}$$

Divide:  $6 \div 3 = 2$

Write 2 above the 6

Multiply:  $2 \times 3 = 6$

Subtract:  $6 - 6 = 0$

Compare  $0 < 3$

Bring down the 9

## Dividing Whole Numbers

To divide, follow these steps:

- divide
- multiply
- subtract
- compare
- bring down the next digit

**T6/7-6**



Divide 79 by 17:

$$\begin{array}{r} 4 \\ 17 \overline{) 795} \\ - 68 \downarrow \\ \hline 115 \end{array}$$

Divide:  $79 \div 17 = ?$

Estimate  $80 \div 20 = 4$

Trial divide by 4

Multiply:  $17 \times 4 = 68$

Subtract:  $79 - 68 = 11$

Compare:  $11 < 17$

Bring down 5

$$\begin{array}{r} \underline{46} \\ 17 \overline{) 795} \\ - 68 \downarrow \\ \hline 115 \\ - 102 \\ \hline \underline{\quad} 13r \end{array}$$

Divide:  $115 \div 17 = ?$

Estimate  $120 \div 20 = 6$

Trial divide by 6

Multiply:  $17 \times 6 = 102$

Subtract:  $115 - 102 = 13$

Compare:  $13 < 17$

Bring down: since there is no other digit to bring down, 13 is the *remainder*.

In the above problem, 17 is the **divisor**, 795 is the **dividend** and 46 is the **quotient** with a **remainder** of 13.

Check your work by multiplying the quotient by the divisor. If there is a remainder, add that to the results. The total must equal the dividend.

Have students complete the Applied Practice found on page 7-7 of their Student Manual. Check students individually for understanding and review all problems as a group.

## SKILL APPLICATION



## APPLIED PRACTICE

The examples below apply the skills of multiplication and division of whole numbers to workplace situations. Use the appropriate mathematical operation to find the correct answer.

1. You have been asked to prepare three batches of the recipe for rolls. Each batch calls for the use of 2 quarts of flour and 3 cups of sugar. What is the total amount of flour to be used? What is the total amount of sugar to be used?
2. A total of 580 students are to be served lunches today. There are 5 lunch shifts planned. If each shift had the same number of students, how many would be scheduled for each shift?
3. The recipe shown here serves 100. If 400 students are to be served, how many cans of apples will be needed? How many cups of Orange Juice? Lemon Juice? Pineapple Juice?

### TROPICAL APPLES INGREDIENTS

CANNED APPLES	4 #10 CANS
SUGAR	3/4 GAL
FLOUR	3 1 QT
ORANGE JUICE	3 CUPS
LEMON JUICE	1 CUP
PINEAPPLE JUICE	3 CUPS
LEMON RIND	2 1/3
FOOD COLORING	1/2 TSP

4. If a pan of brownies serves 48, how many pans need to be prepared in order to provide 432 servings?

APPLIED PRACTICE  
ANSWERS

1. 6 QUARTS OF FLOUR                      9 CUPS OF SUGAR
  
2. 116 STUDENTS
  
3.     16 CANS OF APPLES  
       12 CUPS OF ORANGE JUICE  
       4 CUPS OF LEMON JUICE  
       12 CUPS OF PINEAPPLE JUICE
  
4. 9 PANS



# Fractions

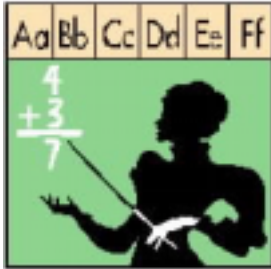


January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# FRACTIONS

## INTRODUCTION



An appropriate statement to introduce the section on fractions might be "what you don't use, you lose". Ask the class to apply that statement to mathematics operations with fractions. For instance, you might want to divide a mixed number by a mixed number and the answer has to be reduced to be correct. Example:  $4 \frac{2}{5}$  divided by  $2 \frac{2}{3}$ .

Explain to the group that on or off the job, if we are not confronted with the opportunities to use fractions, it is very easy to forget how to use them. Ask the group if they felt challenged when they were first introduced to fractions. Most people are, no matter what their age. Life skills show us the need to understand fractions. Following directions in recipes, hobbies, arts and crafts, and sewing, are all examples of how we use fractions. Hopefully, the class will recognize that fractions are an important part of our lives, at home and in the workplace.

Ask the class how many of them use fractions to perform their job tasks and to give examples. There should be many examples noted by food service assistants, especially as applied to their understanding of measurement. Refer to these examples as this module is taught so that they may see how calculating with fractions is directly related to them and their job tasks.



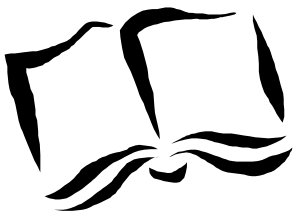




## WHAT IS A FRACTION?



**T1**



**STUDENT MANUAL  
8-1 and 8-2**

Upon completion of this module the group should be able to:

1. Compute basic mathematics operations with fractions
2. Realize the need to know fractions and how to apply them in their personal lives and in the workplace.

2 Hours

Simply put, a fraction is a part of something. A penny is part of a dollar, an inch is part of a foot; so is a toe, but that's a different lesson. The two numbers in a fraction are called:

**numerator** -- how many parts you have  
**denominator** -- how many parts in the whole

Demonstrate this idea with **Transparency T1 and Handout 8-1** in the Student Manual.

Have students complete the Application Exercises on **page 8-2** of their Student Handbooks for practice.

# OBJECTIVES

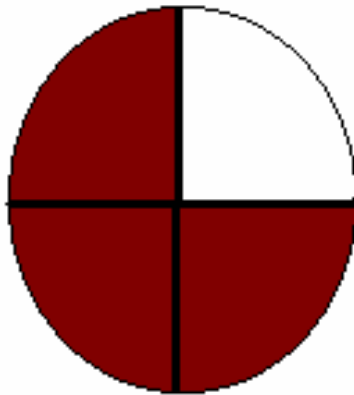
- 1. Compute basic mathematics operations with fractions.**
- 2. Realize the need to know fractions and how to apply them in their personal lives and in the workplace.**

# What Are Fractions?

**numerator** -- how many parts you have

**denominator** -- how many parts in the whole

$$\frac{3}{4} \quad \begin{array}{l} \text{Numerator} \\ \text{Denominator} \end{array}$$



The three tells what part of the figure is shaded. The four tells you that the whole figure is divided into 4 equal parts.

**Proper fraction** - The numerator is less than the denominator. **Example:**

$1/4, 3/12, 1/2$

**Improper fraction** - The numerator is equal to or larger than the denominator.

**Example:**

$8/7, 8/8, 9/4$

**Mixed number** - A whole number is written next to a proper fraction. **Example:**

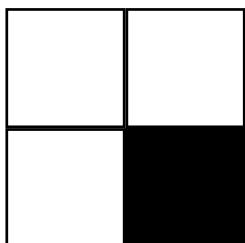
$1 \frac{4}{5}, 3 \frac{1}{2}, 10 \frac{1}{4}$

**T1/8-1**

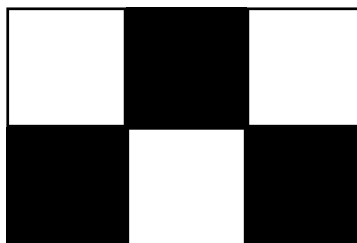
# APPLICATION EXERCISE

Write the fraction that represents the shaded part of each figure. Indicate which number is the numerator and which number is the denominator

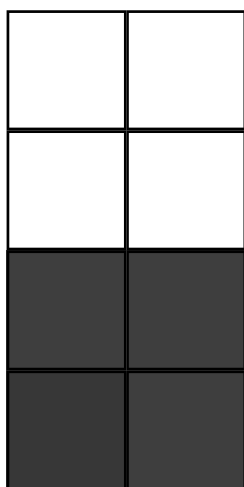
1. \_\_\_\_\_



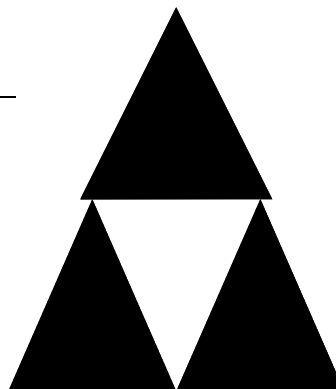
2. \_\_\_\_\_



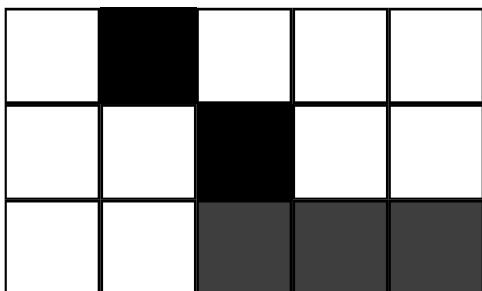
3. \_\_\_\_\_



4. \_\_\_\_\_



5. \_\_\_\_\_



# Answer Sheet

1.  $1/4$      $1 = \text{numerator}$   
           $4 = \text{denominator}$
2.  $3/6$  ( $1/2$ )     $3 \text{ or } 1 = \text{numerator}$   
                       $6 \text{ or } 2 = \text{denominator}$
3.  $4/8$  ( $1/2$ )     $4 \text{ or } 1 = \text{numerator}$   
                       $8 \text{ or } 2 = \text{denominator}$
4.  $3/4$      $3 = \text{numerator}$   
           $4 = \text{denominator}$
5.  $5/15$  ( $1/3$ )         $5 \text{ or } 1 = \text{numerator}$   
                               $15 \text{ or } 3 = \text{denominator}$

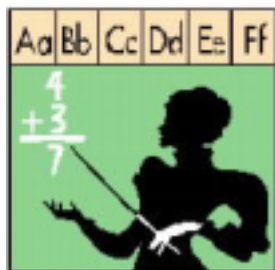
## FORMS OF FRACTIONS

### STUDENT MANUAL



8-3

## REDUCING FRACTIONS



**Proper fraction** - The numerator is less than the denominator. **Example:**

$1/4$ ,  $3/12$ ,  $1/2$

**Improper fraction** - The numerator is equal to or larger than the denominator. **Example:**

$8/7$ ,  $8/8$ ,  $9/4$

**Mixed number** - A whole number is written next to a proper fraction. **Example:**

$1 \frac{4}{5}$ ,  $3 \frac{1}{2}$ ,  $10 \frac{1}{4}$

Refer to the recipe for Pasta Salad handout (**page 8-3** in the student manual), asking students to identify the fractions and mixed numbers found on this recipe sheet.

We know that there are 100 pennies in a dollar. We also know that there are 25 pennies or 25¢ in a quarter. Since the quarter stands for 25 cents of the dollar's 100 cents, we can express it as  $25/100$ . We can also say that a quarter is  $1/4$  of a dollar since there are 4 quarters in a dollar.  $1/4$  is the reduced form of  $25/100$ . Reducing a fraction means writing it in the easiest way or *simplest form*.

Next we will go through the steps involved in reducing fractions.

## Pasta Salad

### Vegetable-Bread Alternate      Salads and Salad Dressings E-8

Ingredients	50 Servings Weight    Measure	100 Servings Weight    Measure	For Servings
Water .....	1 ¼ gal.....	2½ gal.....	.....
Salt .....	2 Tbsp.....	¼ cup.....	.....
Pasta spirals or shells ....	1 lb 8 oz. 2 qt.....	3 lb..... 1 gal.....	.....
Frozen mixed vegetables, thawed and drained . . .	2 lb..... 1¼ qt.....	4 lb..... 2½ qt.....	.....
<b>OR</b>	<b>OR</b>	<b>OR</b>	
Canned mixed vegetables, drained .....	1 lb 10 oz. 1 qt ½ cup...	3 lb 5 oz. ¾ No. 10 can	.....
Frozen chopped broccoli, thawed and drained.....	1 lb 6 oz..... ¾ cups.....	2 lb 12 oz... 1 qt ¾ cups	.....
Black or white pepper.....	..... 1 tsp.....	..... 2 tsp.....	.....
Italian Dressing (see E-15)	..... 2 cups.....	..... 1 qt.....	.....

### DIRECTIONS

1. Heat water to rolling boil. Add salt.
2. Slowly add pasta spirals or shells while stirring constantly until water boils again. Cook for 8-10 minutes. DO NOT OVERCOOK. Drain well.
3. Add mixed vegetables, broccoli, and pepper. Shake dressing. Pour over pasta and vegetables. Toss lightly to combine and coat evenly.
4. Cover. Refrigerate until ready to serve.
5. Mix lightly before serving.
6. Portion with No. 10 scoop (¾ cup).

**SERVING:** ¾ cup (No. 10 scoop) provides ¼ cup of vegetable and ½ serving of bread alternate.

**YIELD: 50 servings:** about 1 ¼ gallons

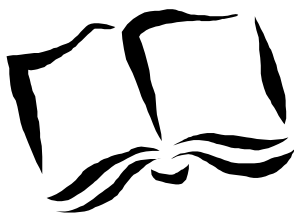
**100 servings:** about 2 ½ gallons

### Nutrients Per Serving

Calories.....113	Vitamin A.....118 RE/1181 IU	Iron.....0.6 mg
Protein.....2 g	Vitamin C.....9.4 mg	Calcium.....17 mg
Carbohydrate...11 g	Thiamin.....0.06 mg	Phosphorus.....35 mg
Fat.....7 g	Riboflavin.....0.04 mg	Potassium.....91 mg
Cholesterol.....0 mg	Niacin.....0.66 mg	Sodium.....330 mg

## STEPS TO REDUCE FRACTIONS

### STUDENT MANUAL



8-4

Refer students to page 8-4 in their student manual and demonstrate the following on the white board.

**Example:** reduce  $15/20$ .

**Step 1.** Begin with the numerator and determine if it will divide evenly into the denominator. If it does, this can bring you quickly to the simplest form. More about that later. Will 15 divide evenly into 20?

**Step 2.** Find a number that will divide evenly into the numerator and the denominator. 5 will go evenly into both numbers.

$$\begin{array}{r} 15 \div 5 = 3 \\ \hline 20 \div 5 = 4 \end{array}$$

**Step 3.** Check to see if another number will go evenly into the numerator and denominator, other than the number itself. Since no other number goes evenly into 3 and 4, the fraction is in its simplest form.

**Example:** reduce  $48/64$ .

Step 1. Will 48 divide evenly into 64?

Step 2. Find a number that does go evenly into the numerator and denominator.

$$\begin{array}{r} 48 \div 8 = 6 \\ \hline 64 \div 8 = 8 \end{array}$$



## Steps to Reduce Fractions

Reduce 15/20.

**Step 1.** Determine if the numerator will divide evenly into the denominator. If it does, this can bring you quickly to the simplest form. Will 15 divide evenly into 20?

$$15 \text{ divided by } 20 = ???$$

**Step 2.** Find a number that will divide evenly into the numerator and the denominator.

$$15 \text{ divided by } \underline{\quad} = \underline{\quad}$$

$$20 \text{ divided by } \underline{\quad} = \underline{\quad}$$

**Step 3.** Check to see if another number will go evenly into the numerator and denominator, other than the number itself.

$$3 \text{ divided by } \underline{\quad} = \underline{\quad}$$

$$4 \text{ divided by } \underline{\quad} = \underline{\quad}$$

**15/20 reduces to:**           

Reduce 48/64.

Reduce 20/30

Reduce 18/36.

Reduce 300/500

Reduce 20/30..



Step 3. Check to see if another number will go evenly into the numerator and denominator.

$$\begin{array}{r} 6 \div 2 = 3 \\ \hline 8 \div 2 = 4 \end{array}$$

**Example:** reduce 18/36.

Step 1. Will 18 divide evenly into 36? Yes.

$$\begin{array}{r} 18 \div 18 = 1 \\ \hline 36 \div 18 = 2 \end{array}$$

Since the numerator is "1", it is in its simplest form.

**Example:** reduce 20/30.

Step 1. Will 20 divide evenly into 30? No.

Step 2. Find a number that will go evenly into the numerator and denominator.

$$\begin{array}{r} 20 \div 10 = 2 \\ \hline 30 \div 10 = 3 \end{array}$$

Step 3. Check to determine if another number will go evenly into 2 and 3.



**SHORTCUT:** When both the numerator and denominator end with zeros, you can eliminate the final zero in both numbers. **Caution:** You must eliminate the same number of zeros above and below the "\_\_\_\_" for this to be correct. This is effectively dividing the fraction by 10 or even 100.

**Example:** reduce 20/30

$$\begin{array}{r} 20 = \quad 2\cancel{0} = \quad 2 \\ \hline 30 = \quad 3\cancel{0} = \quad 3 \\ \text{Same as dividing by 10} \end{array}$$

**Example:** reduce 300/500

$$\begin{array}{r} 300 = \quad 300 = \quad 3 \\ \hline 500 = \quad 500 = \quad 5 \\ \text{Same as dividing by 100} \end{array}$$

## RAISING FRACTIONS TO HIGHER TERMS

### STUDENT MANUAL



8-5

Reducing fractions is a very important skill. Another important skill is raising fractions to higher terms. This skill is needed when you are adding and subtracting ingredients in recipes. Have students follow your instructions on **page 8-5** of their student manual.

**Example:** Raise 2/5 to 20ths.

Step 1. Divide the old denominator (5) into the new one (20).

$$20/5 = 4$$

## RAISING FRACTIONS TO HIGHER TERMS

Raise  $\frac{2}{5}$  to 20ths.

Step 1. Divide the old denominator (5) into the new one (20).

$$20/5 = \underline{\hspace{2cm}}$$

Step 2. Multiply the answer by the current numerator and current denominator

$$\frac{2 \times \underline{\hspace{1cm}}}{\underline{\hspace{2cm}}}$$

$$5 \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

Step 3. Check your answer by reducing it to its lowest terms.



Step 2. Multiply the answer by the current numerator and current denominator.

$$\begin{array}{r} 2 \times 4 = 8 \\ \hline 5 \times 4 = 20 \end{array}$$

Step 3. Check your answer by reducing it to its lowest terms.

$$\begin{array}{r} 8 \div 4 = 2 \\ \hline 20 \div 4 = 5 \end{array}$$

## GROUP ACTIVITY



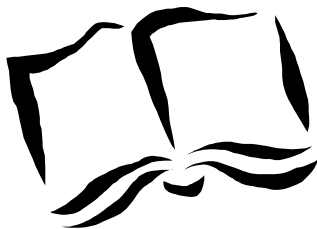
Now that we have learned some basic operations with fractions, let's review with a group activity.

### Learning Fractions With M&Ms

#### MATERIALS:

- M & M's
- Bowl
- Cups (one per student)

## STUDENT MANUAL



#### PROCEDURE:

1. Have a big bowl of M & Ms sitting on the front table.
2. Give each participant a cup full of M & M's (or Skittles work as well).
3. Have the participants count all of their M & M's and write that number on page 8-6 of their student manual.

8-6



4. Have them count the number of green M & M's that they have. They should then write out this number on their sheet.
5. Repeat this process for all of the colors of M & Ms.
6. Participants should indicate the fractions they have for each color of M & M. Prompt some discussion with the following questions:
  - Are the fractions proper, improper or mixed?
  - Can they be reduced? If so, to what?
  - Which part (s) is the numerator? (the groups of colors)
  - Which part is the denominator? (all of the M & M's)



## Learning Fractions with M&Ms

How many M&Ms do you have total? \_\_\_\_\_

How many green M&Ms do you have? \_\_\_\_\_

What fraction does this represent? \_\_\_\_\_

Red \_\_\_\_\_

Fraction: \_\_\_\_\_

Orange \_\_\_\_\_

Fraction: \_\_\_\_\_

Blue \_\_\_\_\_

Fraction: \_\_\_\_\_

Brown \_\_\_\_\_

Fraction: \_\_\_\_\_

Yellow \_\_\_\_\_

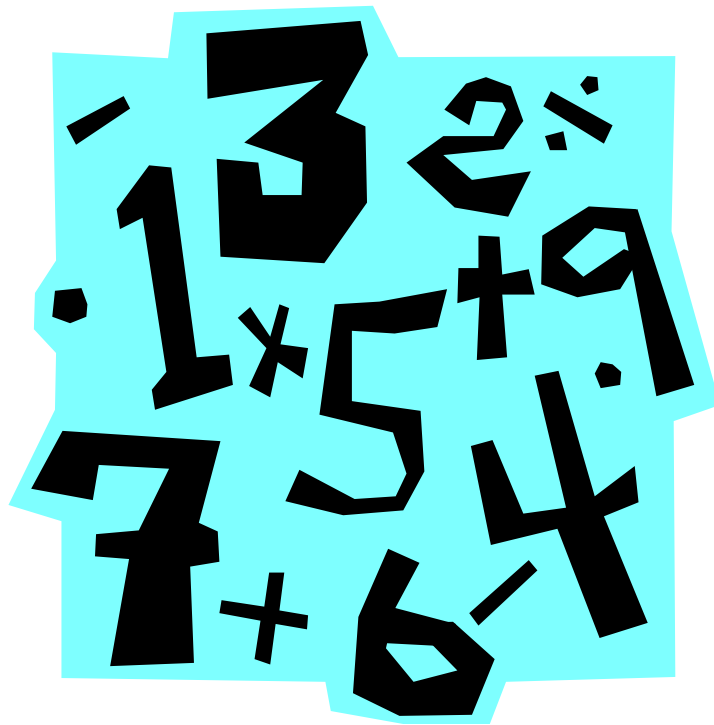
Fraction: \_\_\_\_\_

Compare with your neighbor and explain what fractions you found for each color.

**Now eat up and enjoy!!!!**



# Decimals



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)



# DECIMALS

## INTRODUCTION



What are decimals? Explain that decimals are a type of fraction that people work with every day of their lives. The following numerical notations contain decimal fractions: \$2.**27**, \$16.**75**, \$.**39**. As everyone already knows it stands for dollars and cents, and the **decimal** point separates the dollars from the cents. But, ask the group if they have ever thought about why cents are always written to the right of a point (decimal).

Point out that there are 100 cents in a dollar; therefore, 1 cent is 100th of a dollar. In the amounts noted above twenty-seven pennies is  $27/100$ ; seventy-five pennies is  $75/100$  and thirty-nine is  $39/100$ . The decimal point tells that everything to the right of it is a **part or a fraction of** a dollar.

In currency notation, decimal fractions are only carried to hundredths; however, decimal fractions can go up from tenths to millionths when they are used for certain types of exact measurements. Since decimal fractions do not have bottom numbers, you read them by noting the **number of places** they take up to the **right of the decimal point**.

Write some examples of numbers on the board that show the decimal followed by number places from tenths to millionths and have the class read them correctly. Be sure to explain that there is no one's place.





## CONVERTING FRACTIONS TO DECIMALS

Upon completion of this module the group will:

1. Define terms associated with decimals.
2. Give examples of how decimals are used on and off the job.
3. Explain how to read a decimal.
4. Perform operations and calculations using decimals.
5. Convert fractions to decimals.

1 Hour

Review rounding with the place value charts that follow.

To change a fraction to a decimal, divide the **denominator** into the **numerator**. Follow the rules for dividing a whole number into a decimal.

**Example:**

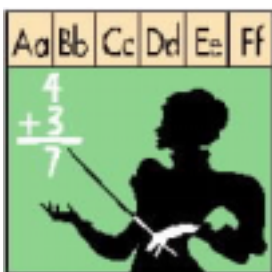
Convert  $3/20$  to a decimal.

$$\begin{array}{r} .15 \\ 20 \overline{) 3.00} \\ \underline{20} \phantom{0} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

# OBJECTIVES

- 1. Define terms associated with decimals.**
- 2. Give examples of how decimals are used on and off the job.**
- 3. Explain how to read a decimal.**
- 4. Perform operations and calculations using decimals.**
- 5. Convert fractions to decimals.**

## CONVERTING DECIMALS TO FRACTIONS OR MIXED NUMBERS



## ADDING DECIMALS



T1/9-1

To change a decimal to a fraction:

- write the decimal number as the numerator
- write the denominator according to the number of decimal places
- reduce to the lowest terms.

**Example:**

Convert 0.24 to a fraction.

$$\frac{24}{100}$$

Write the decimal number as the numerator.  
Write the denominator according to the number of decimal places.

$$\frac{24 \div 4}{100 \div 4} = \frac{6}{25} \quad \text{Reduce to lowest terms}$$

Refer students to **page 9-1** in their student manual.

To add decimals:

- place the numbers in a column and line up the decimals
- use zeros as place holders if necessary
- add the columns
- place a decimal in the answer (sum) directly below the decimals in the problem.

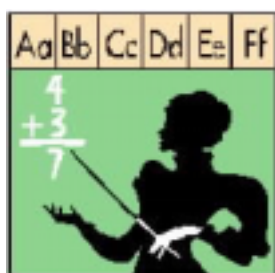
## Adding Decimals Numbers

To add decimals:

- place the numbers in a column and line up the decimals
- use zeros as place holders if necessary
- add the columns
- place a decimal in the answer (sum) directly below the decimals in the problem.

**Example: add  $3.243 + 2 =$**

T1/9-1



## SUBTRACTING DECIMALS

## MULTIPLYING DECIMALS



T2/9-2

**Example:** add  $3.243 + 2 =$

**NOTE:** a whole number is understood to have a decimal point to the right of the ones place.

Place the numbers in a column, decimals lined up, zeros for place holders if necessary.

$$\begin{array}{r} 3.243 \\ \underline{2.000} \\ 5.243 \end{array}$$

Find the sum and place the decimal directly below those in the problem.

To subtract decimals, follow the same steps as in addition but find the difference.

**Example:** subtract  $8 - 5.325 =$

$$\begin{array}{r} 8.000 \\ - 5.325 \\ \hline 2.675 \end{array}$$

Refer students to page 9-2 in their student manual.

To multiply decimals:

- multiply the numbers
- count the total numbers of decimals in the multiplicand and the multiplier
- transfer that number of decimal places to the product, counting from the right (ones column).

**Example:** multiply  $8.25 \times 4.9 =$

$$\begin{array}{r} 8.25 \\ \times 4.9 \\ \hline 7425 \\ \underline{3300} \\ 40.425 \end{array}$$

# Multiplying Decimals

To multiply decimals:

- multiply the numbers
- count the total numbers of decimals in the multiplicand and the multiplier
- transfer that number of decimal places to the product, counting from the right (ones column).

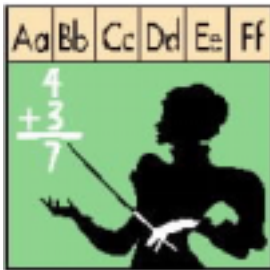
**Example:** multiply  $8.25 \times 4.9$

**T2/9-2**

## DIVIDING DECIMALS



T3/9-3



Refer students to **page 9-3** in their student manual.

To divide a decimal by a whole number:

- place a decimal in the quotient directly above its position in the dividend
- use zeros for place holders if necessary.

**Example:** divide 31.2 by 6.

$$\begin{array}{r} \underline{5.2} \\ 6 \overline{) 31.2} \\ \underline{- 30} \phantom{0} \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$

Place the decimal in the quotient directly above its position in the dividend.

Divide as usual.

To divide a decimal by a decimal:

- Change the divisor to a whole number by moving the decimal to the far right.
- Move the decimal in the dividend an equal number of spaces to the right. Add zeros as necessary.
- Divide as usual.

**Example:** divide 7.92 by 0.03.

$$0.03 \overline{) 7.92}$$

↪ ↪

Change the divisor to a whole number.

$$0.03 \overline{) 7.92}$$

↪ ↪

Move the decimal in the dividend an equal number of spaces.



# Dividing Decimals

To divide a decimal by a whole number:

- place a decimal in the quotient directly above its position in the dividend
- use zeros for place holders if necessary.

To divide a decimal by a decimal:

- Change the divisor to a whole number by moving the decimal to the far right.
- Move the decimal in the dividend an equal number of spaces to the right. Add zeros as necessary.

$$\begin{array}{r} 0.0 \\ 3 \overline{) 7.92} \\ \underline{6} \phantom{0} \\ 19 \\ \underline{18} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

$$\begin{array}{r} 0.0 \\ 3 \overline{) 7.92} \\ \underline{6} \phantom{0} \\ 19 \\ \underline{18} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

**T3/9-3**



$$\begin{array}{r}
 264 \\
 003 \overline{)792} \\
 \underline{-6} \\
 19 \\
 \underline{-18} \\
 12 \\
 \underline{-12} \\
 0
 \end{array}$$

Divide as usual.

**Example:** Divide 1.6 by 0.004.

$$\begin{array}{r}
 0.004 \overline{)1.600} \\
 \swarrow \swarrow \swarrow \quad \swarrow \swarrow \swarrow \\
 400 \\
 0004 \overline{)1600} \\
 \underline{-16} \\
 000
 \end{array}$$

## STUDENT MANUAL



9-4

## SKILL APPLICATION

As a summary complete the Applied Practice Exercise found on page 9-4 in the student manual.

## Applied Practice

Using the recipe for Beefaroni, answer the questions below.

### Beefaroni

Ingredients	100 servings		Directions
	Weights	Measures	
Ground Beef . . . . .	14 lb. . . . .	. . . . .	1. Cook beef, onion, celery, green pepper, salt and until beef is brown.
Onion, Chopped . . . . .	1 lb 2 oz. . . . .	3 cups . . . . .	
Celery, Chopped . . . . .	12½ oz. . . . .	3 cups . . . . .	
Green Pepper, . . . . .	13½ oz . . . . .	2 cups . . . . .	
Chopped			
Salt . . . . .	2¾ oz . . . . .	¼ cup . . . . .	
Pepper . . . . .	. . . . .	3 Tbsp . . . . .	
Tomatoes . . . . .	. . . . .	⅔ # 10 can . . . . .	2. Add tomatoes and paste.
Tomato Paste . . . . .	. . . . .	1½ qts . . . . .	
Macaroni, Uncooked . . . . .	4 lb. . . . .	. . . . .	3. Cook macaroni and drain. 4. Add macaroni to meat mixture. 5. Portion into 2 pans – 12x20x4 inches.
Salt . . . . .	. . . . .	2 Tbsp . . . . .	
Water, Boiling . . . . .	. . . . .	4 gals . . . . .	
Cheese, Shredded . . . . .	3 lb. . . . .	. . . . .	6. Top with shredded cheese. 7. Bake at 400°F for 15 minutes. 8. Use a #8 scoop to provide a ½ cup serving.

SERVING: ½ cup – provides the equivalent of a 2 ounce serving of cooked lean meat and ¾ bread equivalent.

1. Convert the weight for chopped celery to a decimal.
  
2. Your manager instructs you to add .25 qts of tomato paste in addition to what the recipe calls for. How much do you need in total?
  
3. If you have 10.25 lbs of cheese in stock, how much will you have left over after you make this recipe?
  
4. You need 13.5 oz of green pepper for this recipe. You already have green peppers chopped and decided into piles of 3 oz each. How many 3 oz piles will you need to use?

## APPLIED PRACTICE

### ANSWERS

1. 12.5 oz
2. 1.75 qts
3. 7.25
4. 4.5 piles



# Measurement



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# MEASUREMENT

## INTRODUCTION



**Note to the Instructor:** You may want to obtain a copy of the USDA Recipe Book found in your local school kitchen. This section refers to this manual in several places.

The term measure indicates volume. Volume refers to the amount of space an ingredient occupies in a measuring container. When measuring ingredients for the preparation of food for large numbers of students, accuracy is important to produce consistent quality. Who would want to be responsible for ruining five hundred servings of hot dog chili that students love? No one wants that kind of negative reaction! A measurement error can be costly, in terms of financial outlay, time of preparation, the reputation of the food service program and health care if someone should become ill after eating improperly prepared food.

With proper measuring techniques, problems such as these may be avoided. Let's be sure we know how to measure correctly!

1 1/2 Hours

Upon completion of this module, participants will:

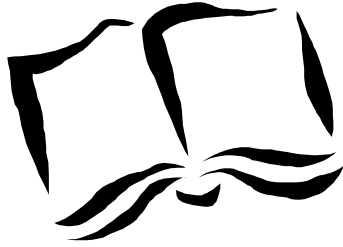
1. Identify units of measurement and their abbreviations used in food preparation.
2. Understand equivalents in measurement.
3. Identify equipment used for measurement.
4. Know correct measuring techniques.



# **OBJECTIVES**

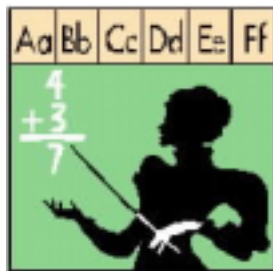
- 1. Identify units of measurement and their abbreviations used in food preparation.**
- 2. Understand equivalents in measurement.**
- 3. Identify equipment used for measurement.**
- 4. Know correct measuring techniques.**

# STUDENT MANUAL



10-1

## UNITS OF MEASURE



## EQUIVALENTS

We have already established that volume is a unit of measurement used in determining how much of a certain ingredient is needed for a recipe. Often volume may be expressed in written form that is abbreviated. On page 10-1 on your student manual common measurement units and their abbreviations are listed.

teaspoon	=	t. or tsp.
tablespoon	=	T. or Tbsp.
cup	=	c.
pint	=	pt.
quart	=	qt.
gallon	=	gal.
ounce *	=	oz.
pound	=	lb. or #
fluid ounce *	=	fl. oz
number	=	no.
weight	=	wt.

(\*An ounce is weight and a fluid ounce is volume.)

Another word used in recipes is the term used to determine the temperature of the oven when cooking. It is:

degree Fahrenheit = F.

These terms and abbreviations are important in food service because measurement has to be precise. Food service assistants cannot just add a “pinch” of this or a “dab” of that and expect the finished product to be consistent every time it is prepared.

Equivalents are important in recipes as well. Listed below are common equivalents that make preparing large recipes much easier.

These include volume and weight.

These equivalents are found in the USDA Recipe Book in your kitchen.



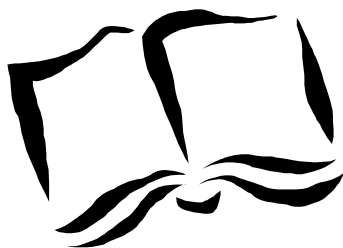
# Common Abbreviations

teaspoon	=	t. or tsp.
tablespoon	=	T. or Tbsp.
cup	=	c.
pint	=	pt.
quart	=	qt.
gallon	=	gal.
ounce *	=	oz.
pound	=	lb. or #
fluid ounce *	=	fl. oz
number	=	no.
weight	=	wt.

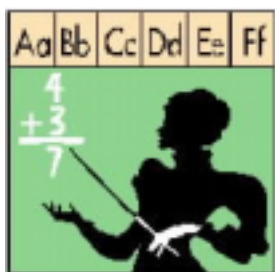
*(\*An ounce is weight and a fluid ounce is volume.)*

**degree Fahrenheit = F.**

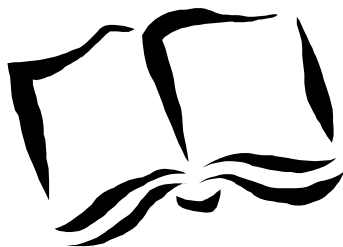
## STUDENT MANUAL



10-2 - 10-3



## STUDENT MANUAL



10-4

### Equivalents:

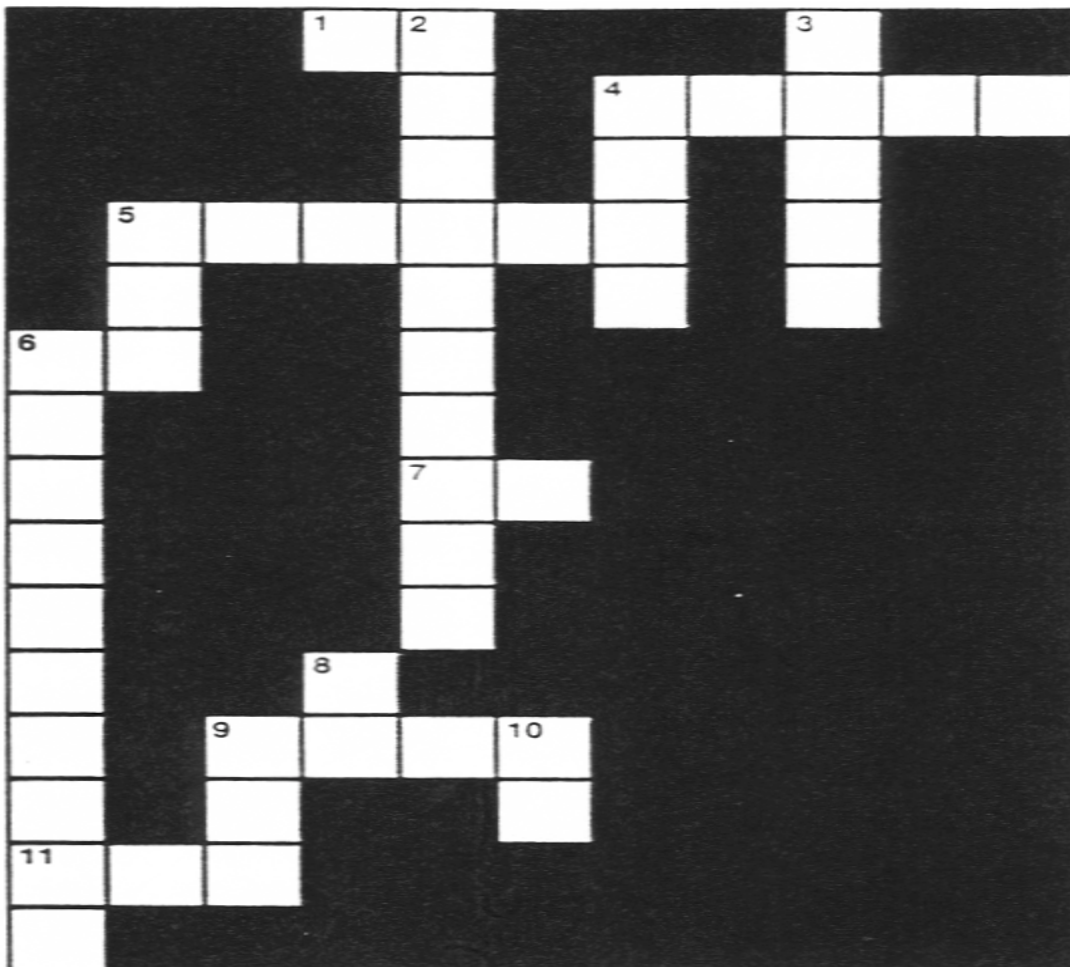
1 tablespoon	=	3 teaspoons
2 tablespoons	=	1 fluid ounce
2 tablespoons	=	1/8 cup
4 tablespoons	=	1/4 cup
5 1/3 tablespoons	=	1/3 cup
8 tablespoons	=	1/2 cup
10 2/3 tablespoons	=	2/3 cup
12 tablespoons	=	3/4 cup
16 tablespoons	=	1 cup
1 cup	=	16 tablespoons
1 cup	=	8 fluid ounces
1 pint	=	2 cups
		16 fluid ounces
1 quart	=	4 cups
		2 pints
		32 fluid ounces
1 gallon	=	16 cups
		8 pints
		4 quarts
		128 fluid ounces
1 pound	=	16 ounces
3/4 pound	=	12 ounces
1/2 pound	=	8 ounces
1/4 pound	=	4 ounces
1 oz. ladle	=	1/8 cup
2 oz. ladle	=	1/4 cup
4 oz. ladle	=	1/2 cup
6 oz. ladle	=	3/4 cup
8 oz. ladle	=	1 cup

**Note to instructor:** Use the crossword puzzle on 10-4 in the student manual to review the abbreviations and equivalents.)





## Abbreviations and Equivalents Crossword Puzzle



### Across

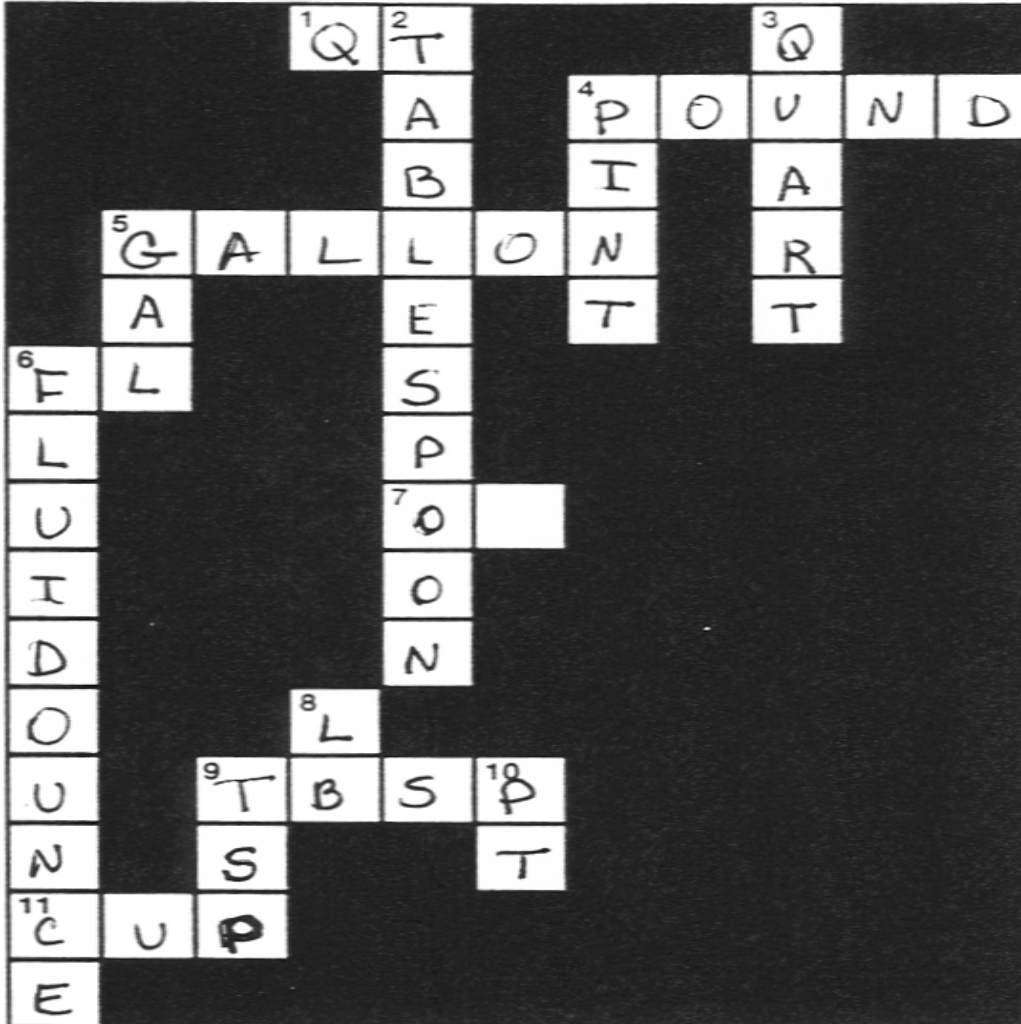
1. quart
4. 16 ounces
5. 4 quarts, 16 cups or 128 fluid ounces
6. fluid
7. ounce
9. tablespoon
11. 16 tablespoons

### Down

2. 3 teaspoons
3. 2 pints or 4 cups
4. 16 fluid ounces or 2 cups
5. gallon
6. fl. oz.
8. pound
9. teaspoon
10. pint

**10-4**

(From "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)



**Across**

- 1. quart
- 4. 16 ounces
- 5. 4 quarts, 16 cups, or 128 fluid ounces
- 6. fluid
- 7. ounce
- 9. tablespoon
- 11. 16 tablespoons

**Down**

- 2. 3 teaspoons
- 3. 2 pints or 4 cups
- 4. 16 fluid ounces or 2 cups
- 5. gallon
- 6. fl. oz.
- 8. pound
- 9. teaspoon
- 10. pint

## PAN SIZE



## MEASURING EQUIPMENT

There are some other types of equivalents that are useful to know when preparing large recipes. For instance, the number of standard servings can be estimated based on pan size and capacity. Some of these approximations of servings are:

<u>Pan Size</u>	<u>Gal.</u>	<u>Serving Size.</u>	<u>Number of Servings</u>
12 x 20 x 2 1/2"	2	1/2 c.	64
12 x 20 x 4"	3 1/2	1/2 c.	112
12 x 20 x 6"	5	1/2 c.	160

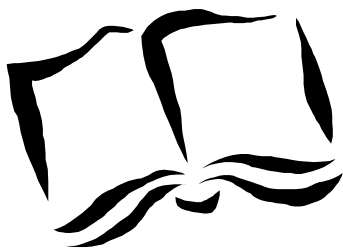
Standard measuring equipment includes spoons, dry measuring equipment and liquid measuring equipment. Nested cups may be used to measure dry ingredients such as salt, sugar, yeast, flour or solid shortening in small amounts. Graduated cup, pint, quart and gallon measures have rings that are counted from the bottom up and are used to measure larger amounts of dry ingredients. (Any dry ingredient over one quart should be weighed for accuracy.)

Large amounts of liquids such as milk, juice and water are measured in pints, quarts, half gallons and gallons.



**TECHNIQUES  
FOR MEASURING**

**STUDENT MANUAL**



**10-5**

Liquid measuring containers have a lip around the top of the container to prevent spills when pouring. They are usually made of heavy aluminum or polycarbonate. On aluminum, there are rings to indicate amount from bottom to top. On polycarbonate, the measures are printed on the outside of the container.

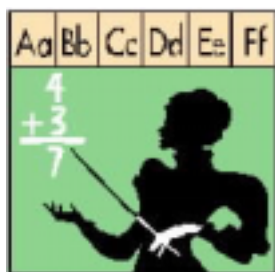
Dry measuring containers like nested and graduated measures do not have a lip above the fill line so that ingredients can be leveled with a straight-edged spatula.

(Note to instructor: At this point or even while describing all the different types of measuring containers and equipment, actual containers and equipment used in kitchens should be shown to participants. This would include scales, spoons, ladles, cups, pans, etc. Be sure to answer any questions participants may have concerning either the devices themselves or the techniques of measuring. The correct techniques for measuring follows.)

Correct techniques for measuring are just as important as the measurements themselves. The techniques for measuring liquid (wet) and dry ingredients vary slightly. Let's look at some basic rules for measuring wet and dry ingredients. Refer students to page 10-5 in their Student Manual.







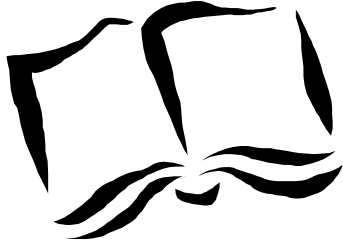
### Dry Measuring Techniques:

1. Use standard measuring equipment.
2. Use the largest appropriate measure to save time and to reduce errors.
3. Spoon ingredients lightly into the measuring container. Some ingredients may need to be sifted before measuring.  
However, when measuring brown sugar, pack the sugar firmly into the measuring container so that it will take the shape of the container when emptied.
4. Fill the measuring container to overflowing and then level it off with a straight-edged spatula.
5. Avoid shaking or tapping the container.

### Wet Measuring Techniques:

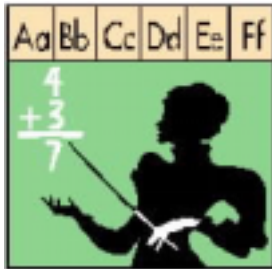
1. Use the largest appropriate standard measuring container.
2. Place your container on a flat surface.
3. Pour the liquid into the container until it reaches the desired level.
4. Read at eye level when using a glass or clear container. Look inside the container as the liquid is filling to the desired level if using a metal container.

## STUDENT MANUAL



10-6

## MEASURING BY WEIGHT



Have students practice measuring by completing the exercises on page 10-6 together as a class.

**Note to Instructor:** Actual demonstrations of measuring wet and dry ingredients may be used at this point. Sand may be substituted or actual ingredients may be used. Measuring devices (as many sets as needed) should be provided by the instructor.

If there is time to allow participants to actually practice measuring wet and dry ingredients, the techniques of measuring demonstrated by the participants can be observed and corrected, if necessary.

There is another way to measure ingredients that is easier, faster and more accurate than measuring by volume. It is measuring by weight. Some ingredients need to be measured by volume, but weighing should be used whenever possible. Weighing is done on scales. Scales should be calibrated so that ingredients of standardized recipes will be consistently accurate. This assures good results every time a particular recipe is used.

There are two types of scales used to measure ingredients by weight. They are traditional scales and electronic scales.

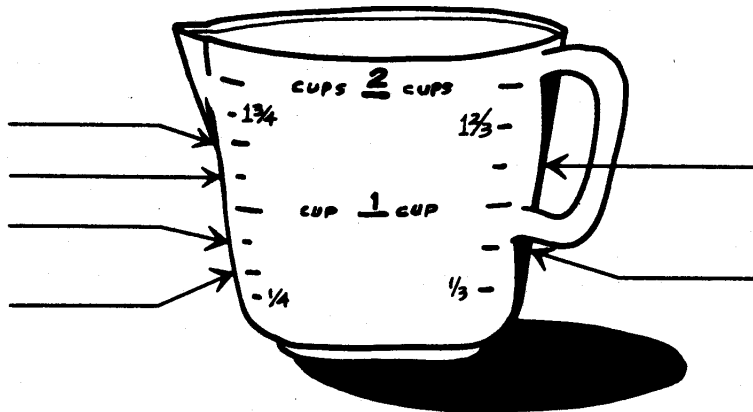
Traditional scales are used to weigh ingredients up to fifty pounds. They have a dial that can be fixed or adjustable. The fixed dial scale measures both the container and the ingredients, so before measuring ingredients, the empty container should be weighed without ingredients inside. The container should be placed on the platform on top of the scale and the weight of the container itself should be recorded. The ingredients are then poured into the container that is on the platform until the desired weight of the ingredients (plus the weight of the container) is reached.

## Reading A Measuring Cup

Fill in the measurements next to the correct lines.

1/2      2/3      3/4

1 1/4    1 1/3    1 1/2



Fill in the blanks to indicate the amount shown in each picture.



onions

\_\_\_\_\_



relish

\_\_\_\_\_



tuna fish

\_\_\_\_\_



mayonnaise

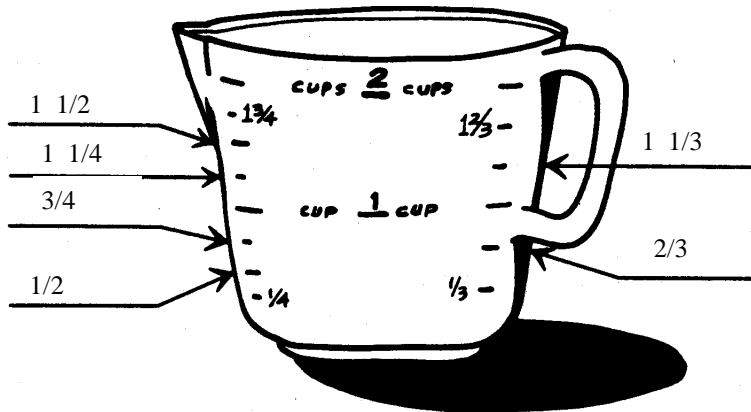
\_\_\_\_\_

## Reading A Measuring Cup **ANSWERS**

Fill in the measurements next to the correct lines.

1/2    2/3    3/4

1 1/4    1 1/3    1 1/2



Fill in the blanks to indicate the amount shown in each picture.



onions

1/2 cup



relish

1/4 cup



tuna fish

1 23/24 cups



mayonnaise

1 3/4 cups



The accuracy of the traditional scale may be assured by noticing whether the dial on the empty scale registers exactly zero. If the dial varies slightly to the left or right of zero when empty, the traditional scale may need adjusting. There is an adjustment mechanism for moving the pointer to exactly zero.

If the dial on the traditional scale is adjustable, the empty container should be placed on the platform and the pointer should be turned to zero. Then the ingredients should be added until the dial shows the desired weight of the ingredients. Because the weight of the container was accounted for by setting the pointer at zero with the container on the platform, there is no need to calculate the weight of the container separately from the ingredients.

Electronic scales are replacing traditional scales in school food service. The electronic scale has a digital readout that is usually in the standard measurement system. However, electronic scales can be converted to the metric system with the flip of a switch.

The electronic scale has a platform that allows ingredients to be measured without the weight of the container being added into the readout. The simple weight of the ingredient is what is shown on the readout. Be sure to return the readout to zero by pressing a button on the scale before measuring another ingredient.

When using either the traditional or the electronic scale proper handling will help maintain their accuracy. Correct handling procedures include:

- \* never picking scales up by the base
- \* never storing food or items on the scales
- \* keeping the scales in a permanent place
- \* avoiding any rough handling.

## NUTRITIONAL ANALYSIS



## TEMPERATURE

The proper measuring of ingredients and servings in school cafeterias serves a nutritional purpose as well as insuring proper quantities. Now there is computer software available to food service assistants that actually calculates the nutritive value of foods based on the weight or volume. The nutritional analysis will be correct only if the proper measurement is entered into the computer. It is critical to know whether food is measured in weight or volume in order to enter the information into the computer correctly. For example, as a general rule, unless the measurement is designated as fluid ounces, any measurement in ounces will be taken as a weight measurement rather than a volume measurement. Please be careful to measure, record and enter measurement information correctly to insure correct nutritional analysis.

The last type of measurement we need to discuss is the temperature type of measurement. Most cafeterias require knowledge of Fahrenheit degrees measured on a round dial (as on an oven) or a thermometer, which is a vertical reading. Numbers printed on the dial or on the thermometer followed by a small circle are read as degrees and written as \_\_\_\_ degrees Fahrenheit or \_\_\_\_ ° "F". The proper temperature of food whether while it is cooking, while in storage or when it is served, not only aids nutrition but taste. Improper temperature may result in contaminated food that can cause illness.

**SKILL  
APPLICATION**

**STUDENT MANUAL**



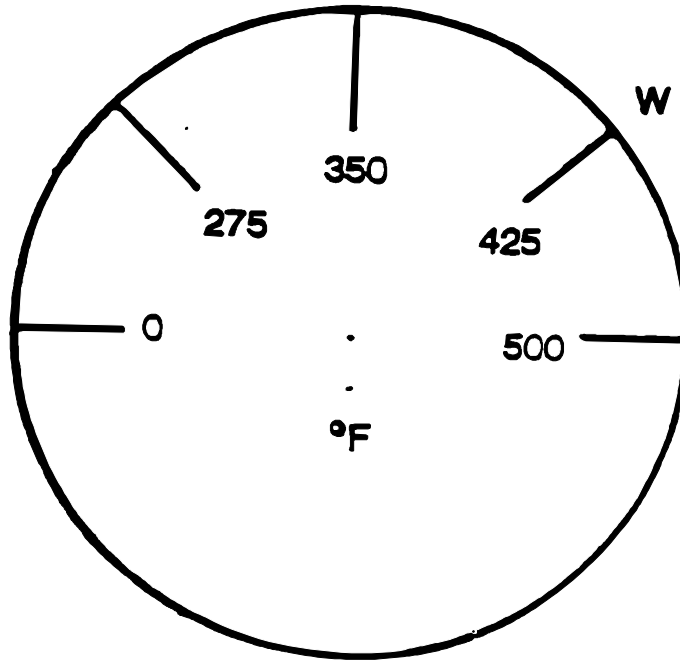
**10-7 to 10-11**

Refer participants to the skill application exercises on pages 10-7-10-11 for practice. Please read over the five pages of exercises beforehand to make sure you have covered all of the material.

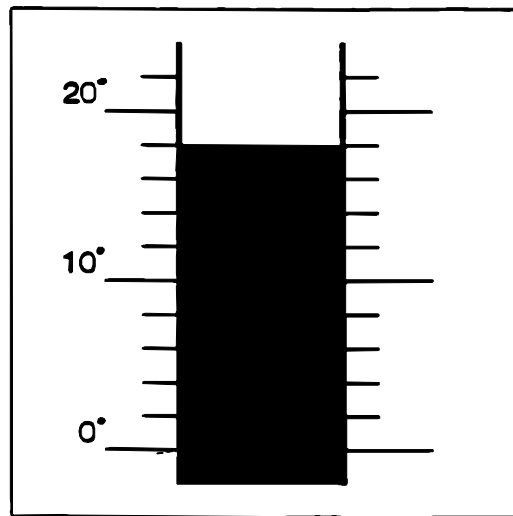


## SKILL APPLICATION EXERCISES

1. Using the picture of an oven temperature dial, what is the temperature for the letter "W"? \_\_\_\_\_



2. Using the thermometer shown in the illustration, what temperature would be shown if the temperature fell 7 degrees?  
\_\_\_\_\_



10-7

3. The scale shows the amount of flour used in the kitchen over four consecutive weeks. What is the amount of usage for each letter shown on the scale?

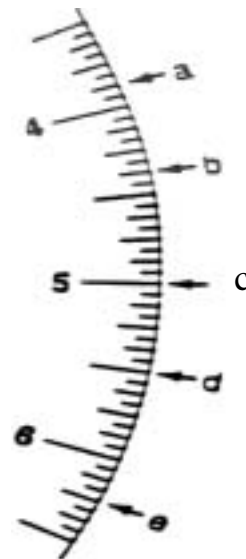
- a. \_\_\_\_\_ lbs. \_\_\_\_\_ oz.  
 b. \_\_\_\_\_ lbs. \_\_\_\_\_ oz.  
 c. \_\_\_\_\_ lbs. \_\_\_\_\_ oz.  
 d. \_\_\_\_\_ lbs. \_\_\_\_\_ oz.

4. Since a pound can be divided into 16 ounces, many scales will show these 16 divisions. What are the equivalents (in fractional parts of a pound) for each of the following:

$\frac{4}{16}$  lb. = \_\_\_\_\_ lb.  
 $\frac{8}{16}$  lb. = \_\_\_\_\_ lb.  
 $\frac{12}{16}$  lb. = \_\_\_\_\_ lb.

5. Read the scale shown to find the marked values for each of the following: (write as fractional parts of a pound)

- a. \_\_\_\_\_ lb.  
 b. \_\_\_\_\_ lb.  
 c. \_\_\_\_\_ lb.  
 d. \_\_\_\_\_ lb.  
 e. \_\_\_\_\_ lb.

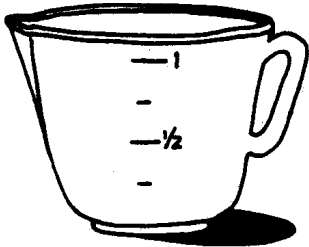


6. You were directed by the manager to add more meat to a recipe you are preparing. The original amount called for in the recipe was 3 lb. 2 oz. You need to add 2 lbs. 14 oz. What is the total amount of meat that will now be in the recipe? \_\_\_\_\_

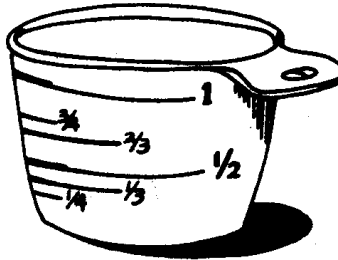
7. Match the equivalent measurements in the following list:

- |                          |                      |
|--------------------------|----------------------|
| _____ (1) 3 teaspoons    | A. 1 quart           |
| _____ (2) 2 pints        | B. 32 ounces         |
| _____ (3) 4 tablespoons  | C. 1 tablespoon      |
| _____ (4) 1 quart        | D. $\frac{1}{4}$ cup |
| _____ (5) 8 tablespoons  | E. 1 cup             |
| _____ (6) 4 quarts       | F. 1 pint            |
| _____ (7) 16 tablespoons | G. $\frac{1}{2}$ cup |
| _____ (8) 2 cups         | H. 1 gallon          |

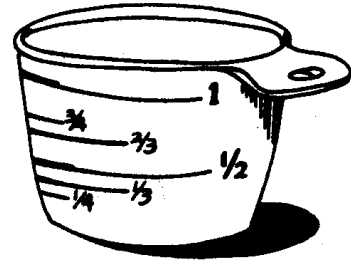
8. Shade the measuring cups to show the amounts indicated:



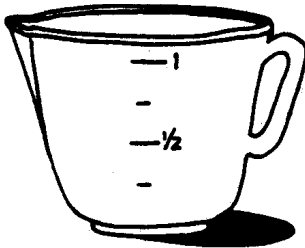
A)  $\frac{3}{4}$  cup



B)  $\frac{1}{3}$  cup



C)  $\frac{2}{3}$  cup

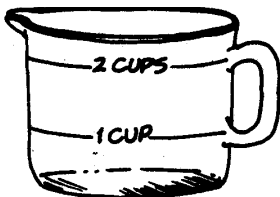


D)  $\frac{1}{2}$  cup

9. Which of these measurements (from question 8) is the same as: (Answer A,B,C or D)

4 ounces? \_\_\_\_\_

6 ounces? \_\_\_\_\_



10. Jack needs 3 cups of flour to make bread. How many times will he need to fill up this measuring cup? \_\_\_\_\_

11. Compare the following measurements and show if the compared amounts are greater than ( $>$ ), less than ( $<$ ), or equal ( $=$ ) to each other. The first example is completed for you as a sample.

(1) 3 cups  $>$  21 fluid ounces      (7) 4 quarts 1 cup       1 gallon

(2) 7 quarts       15 pints      (8) 3 gallons 4 quarts       4 gallons

(3) 6 pints       2 gallons      (9) 2 pints 6 cups       9 cups

(4) 3 cups       2 pints      (10) 2 quarts 1 pint       6 pints

(5) 2 gallons       8 quarts      (11) 2 cups       20 fluid ounces

(6) 12 quarts       5 gallons      (12) 1 pint 1 cup       20 fluid ounces

12. Your recipe calls for 2 cups and 3 ounces of liquid. Your supervisor has asked you to add 6 ounces of liquid so that this recipe can be used for a special diet. What is the total amount of liquid in the recipe adding the additional liquid?

\_\_\_\_\_

13. Measurement	Ladle Size
1/4 cup	2 oz.
1/2 cup	4 oz.
1 cup	8 oz.

Which ladle size would be used for each of the following:

1/4 cup serving of beets	_____
1 cup of potatoes	_____
1/2 cup of rice	_____
1/4 cup of carrots	_____
1/2 cup of pudding	_____
1 cup of peaches	_____

14. It is often necessary to refer to a can size chart when determining how much of a canned product you need for a recipe. Using the chart shown, which can would you need in each of the following situations?

3/4 cup of pears	_____
1 lb. of beans	_____
12 cups of tomatoes	_____
1 3/4 cups of carrots	_____
1 cup of broth	_____

Guide to Can Sizes	
Can	Size
6 oz.	3/4 cup
8 oz.	1 cup
No. 1	1 1/4 cups or 10 1/2 oz
No. 300	1 3/4 cups or 15 1/2 oz.
No. 303	2 cups or 1 lb.
46 oz	5 3/4 cups

## SKILL APPLICATION EXERCISE ANSWERS

1. 425°f
2. 11°
3. (a) 98 lbs. 12 oz.  
(b) 99 lbs. 5 oz.  
(c) 100 lbs. 3 oz.  
(d) 101 lbs. 0 oz.
4.  $\frac{1}{4}$  lb.  
 $\frac{1}{2}$  lb.  
 $\frac{3}{4}$  lb.
5. (a)  $3\frac{7}{8}$  lb.  
(b)  $4\frac{3}{8}$  lb.  
(c) 5 lb.  
(d)  $5\frac{1}{2}$  lb.  
(e)  $6\frac{1}{4}$  lb.
6. 6 lbs.
7. (1) C  
(2) A  
(3) D  
(4) B  
(5) G  
(6) H  
(7) E  
(8) F
8. Students will shade appropriate amount on each measuring cup.
9. 4 oz. =  $\frac{1}{2}$  cup (D)  
6 oz. =  $\frac{3}{4}$  cup (A)
10. 1  $\frac{1}{2}$  times
11. (1) > (7) >  
(2) < (8) =  
(3) < (9) >  
(4) < (10) <  
(5) = (11) <  
(6) < (12) >
12. 3 cups 1 oz.
13. (a) 2 oz. ladle  
(b) 8 oz. ladle  
(c) 4 oz. ladle  
(d) 2 oz. ladle  
(e) 4 oz. ladle  
(f) 8 oz. ladle
14. (a) 6 oz. can  
(b) No. 303 can  
(c) No. 10 can  
(d) No. 300 can  
(e) 8 oz. can



# Technical Vocabulary

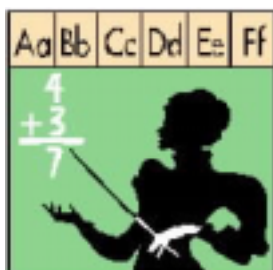


January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# READING SKILLS

## INTRODUCTION



Reading is a skill that is basic to general workplace readiness and, certainly, this holds true for school food service employees. Daily schedules must be read, written recipes must be followed, ingredient and nutritional listings need to be identified, safety and job-related postings are relied on for guidance and direction...and the list goes on and on.

Workplace reading requires more than just the ability to read the written word. First, it is necessary that an employee recognizes the specialized or technical vocabulary associated with his/her job. Building on this foundation, it is important to understand how reading enables the worker to secure information that is needed for effective job performance. Finally, reading skills need to be applied in a manner that allows an employee to follow written instructions.

Three units of instruction are provided in this section of the curriculum to address the critical reading skill requirements of the food service technician. Those units are:

- Technical Vocabulary
- Reading for Information
- Reading to Follow Directions



# TECHNICAL VOCABULARY

## INTRODUCTION



Nearly every workplace has its own special vocabulary. The job terms may describe people, equipment, tools, materials, instruction, or any number of work-related practices. For example, in a hardware store, you may be referred to as a *customer*, while in a doctor's office, you are considered a *patient*. Other examples of job specific vocabulary might include:

*Inventory* - used in a warehouse

*Premium* - used in the insurance industry

Ask the class to use their own experiences to suggest job terms or vocabulary that they are familiar with (especially outside of their food service experience) and list these suggestions on a flip chart. After a good list has been prepared, ask students to name documents or other locations in which these job terms may be found. Also pose the question of how well they could function in their jobs without an understanding of work-related vocabulary.

It is the purpose of this unit to have participants recognize that the workplace can have a technical vocabulary which may be unique to that setting. As employees, it is important to develop an understanding of that vocabulary and to be able to apply that understanding to successful job performance.

1 Hour





## **IMPORTANCE OF UNDERSTANDING TECHNICAL VOCABULARY**

Upon completion of this unit, participants will be able to:

1. Understand the concept of “technical” vocabulary.
2. Use a procedure for defining technical terms.
3. Identify terms that are job-specific and which must be understood for successful job performance.

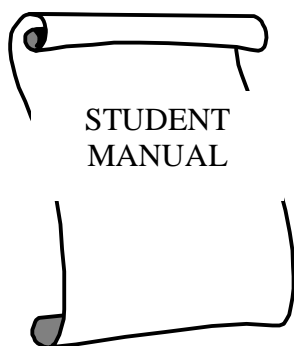
As noted in the unit introduction, a lack of familiarity with the technical vocabulary of a job hinders job performance. While food preparation or kitchen terminology is somewhat common to most of us from personal experience in the home, a school food service vocabulary may differ or be more extensive because of the quantity of food preparation involved. The need for understanding the terminology is also more acute because of the quantities involved and the time constraints within the school kitchen.

Misunderstanding about technical terminology can result in a poor quality of food. The expense of having to throw away a poorly prepared item cannot be easily managed by most local programs and there’s rarely time to remake a recipe. Most often, mistakes are salvaged and served—leading to frustration from an assistant who feels that her job performance was poor and dissatisfaction from

# OBJECTIVES

- 1. Understand the concept of “technical” vocabulary.**
- 2. Use a procedure for defining technical terms.**
- 3. Identify terms that are job-specific and which must be understood for successful job performance.**

## **COOKING TERMINOLOGY**



**11-1 and 11-2**

customers who are quick to criticize the school's food. A working knowledge of kitchen terminology can help you avoid these problems.

The first step in gaining proficiency with technical terminology is to associate the terms with their appropriate (contextual) definitions—the definition which applies to the job or work environment in which it is used. Refer participants to the handout entitled “Cooking Terms and Abbreviations” (11-1 and 11-2). Remind students that these are the same terms and abbreviations that are found in their USDA Recipe Book in their kitchen.

First, note that this list can be a ready reference sheet for them to use until they are completely comfortable with the terminology. Point out that the glossary or listing of terms is in alphabetical order. You may want to briefly review the procedure for finding items in an alphabetical listing by asking students the order in which entries should be listed. For example, in what order should the following terms be listed?

Braise  
Brown  
Broil

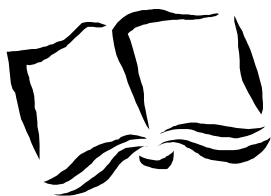
Also have students note that abbreviations and symbols are quite common in kitchen terminology. Review this part of the handout as a group so that students are familiar with abbreviations which are often found on recipes.

## **SKILL APPLICATION**



## **SUMMARY**

## **STUDENT MANUAL**



**11-3**

Have students look over the list of terms and suggest words which would have different meanings outside of the kitchen environment. For example, beat could mean to inflict physical harm on someone rather than describing a method of mixing ingredients and bread could be a noun which names a food product instead of describing a method of coating food before cooking.

In order to have students work with the terminology listing, divide the class into small groups. Provide each group with a container in which you have placed small strips of paper, each of which contains a vocabulary word from the listing. Ask students to select a vocabulary term from the container and to pantomime the action required for that term. The rest of the group should try to guess the term being demonstrated. Discussion should also include how the term could mean something different in another context.

As a check for understanding, ask students to individually complete the crossword puzzle exercise (11-3).

# Cooking Terms and Abbreviations

## General Information A-6

### Terms Used to Describe Oven Temperatures

Very slow oven.....	250 and 275 °F
Slow oven.....	300 and 325 °F
Moderate oven.....	350 and 375 ° F
Hot oven.....	400 and 425 °F
Very hot oven.....	450 and 475 °F
Extremely hot oven.....	500 and 525 °F

Always preheat the oven to the temperature specified in the recipe.

**Note:** Calibrate ovens regularly and check them often with an oven thermometer to make sure preset temperatures are being reached.

### Abbreviations

tsp.....	teaspoon	wt.....	weight
Tbsp.....	tablespoon	No.....	number
oz.....	ounce	pkg.....	package
fl oz.....	fluid ounce	°F.....	degree Fahrenheit
lb or #.....	pound	°C.....	degree Celsius
pt.....	pint	x.....	multiply
qt.....	quart	÷.....	divide

### Glossary of Terms for Processes and Methods

- Bake.....to cook by dry heat, usually in an oven. A suitable cooking method for meat, bread, and many other foods.
- Barbecue.....to roast or broil a food which is usually brushed with a highly seasoned sauce.
- Baste.....to spoon liquids, sauce, or meat juice over food to keep it moist during cooking and to add flavor.
- Beat.....to vigorously mix by hand or with mixing equipment to make the mixture light, fluffy, or smooth.
- Blend.....to mix two or more ingredients.
- Boil.....to cook rapidly in water or liquid so that bubbles rise and break on the surface.
- Braise..... to cook slowly in a covered container with a small amount of liquid or water. A suitable cooking method for less tender meat cuts.
- Bread.....to coat food with bread crumbs, cracker crumbs, or flour before cooking.
- Broil.....to cook by direct heat from a flame, electric unit, or glowing coals; a suitable cooking method for tender meat cuts.
- Brown.....to cook food, generally meat, until it is uniformly brown on all sides.
- Chill.....to cool a food with ice water or refrigeration.
- Chop.....to cut food into small pieces with a knife or chopping equipment.
- Combine.....to mix two or more ingredients together.
- Cream.....to work foods (such as shortening and sugar) together with a spoon or mixer, until soft and fluffy or until thoroughly blended.
- Crumb.....to cover a food with bread (or cracker) crumbs or to break food, such as bread, into crumbs.
- Cut in.....to mix solid fat, such as butter or margarine, into dry ingredients with a cutting motion so that the fat remains in small particles.
- Dice.....to cut into small cubes with a knife or chopping equipment.

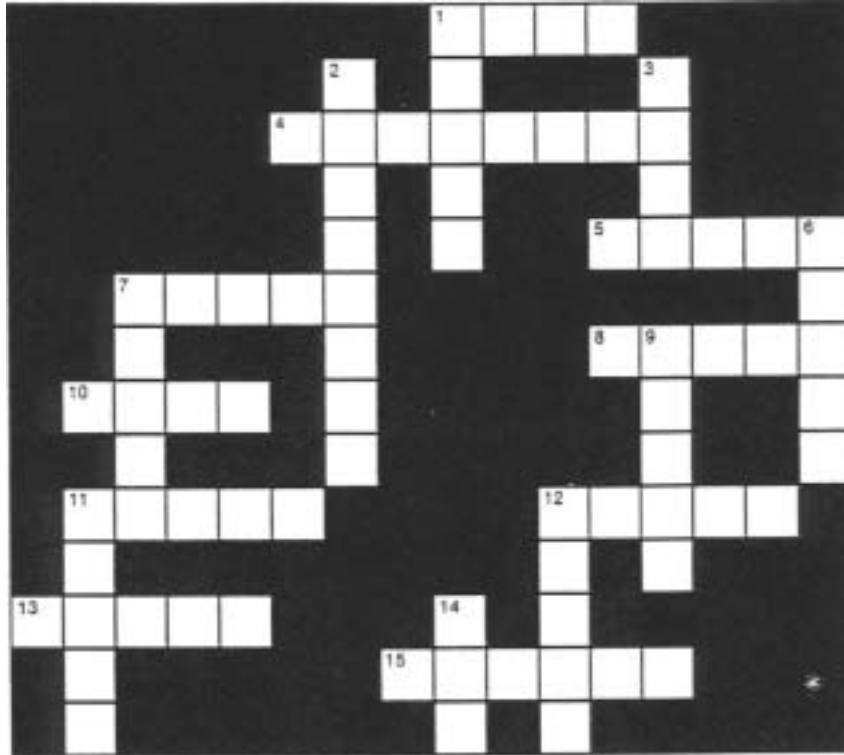
(FROM "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)

## Cooking Terms and Abbreviations (Continued)

General Information A-6

- Dredge..... to coat a food by dipping in crumbs. flour, cornmeal, sugar, or other coatings.
- Fold .....to combine several food ingredients into a mixture by gently turning the mixture, with a minimum of motions, until the ingredients are blended.
- Fry ..... to cook in fat over heat in a skillet, pan, or griddle, or in a fryer.
- Glaze .....to coat with a mixture to produce a glossy appearance on the food.
- Grill ..... to cook uncovered over direct heat on a griddle or pan, removing fat as it accumulates.
- Grind ..... to chop or pulverize food, such as meat, into small particles by using a food chopping device or meat grinder.
- Knead ..... to work with dough, such as bread dough, by pressing, folding, and stretching to develop the dough structure.
- Leaven ..... to cause food, such as bread, to rise and increase volume by adding a leavening agent, such as yeast or baking powder.
- Marinate ..... to soak a food, such as meat or vegetables, for a period of time in a sauce with herbs, spices, and condiments to enrich its flavor and/or to tenderize it.
- Melt ..... to turn a solid food into a liquid by heating.
- Mince .....to finely chop food, such as garlic, into very small pieces.
- Mix .....to blend or combine two or more foods or ingredients.
- Parboil .....to boil in water briefly as a preliminary cooking step. May be used with vegetables and meat.
- Pare .....to thinly trim off the outer covering or skin of a food, such as potatoes.
- Peel .....to strip off the outer covering of a food, such as oranges.
- Punch down.....to remove air bubbles from risen yeast dough by pushing the dough down with the fists.
- Reconstitute .....to bring back a concentrated food, such as a juice concentrate, to the original strength-or a dry food, such as nonfat dry milk, to the original state-by adding liquid.
- Rehydrate..... to add fluids back into a dried food such as dehydrated onions.
- Roast ..... to cook by dry heat, uncovered, in an oven. A suitable cooking method for tender meat roasts.
- Scold .....to heat a liquid, such as milk, to a temperature just below the boiling point. Tiny bubbles will appear around the edge of the pan.
- Shred ..... to cut or grate foods into narrow strips.
- Simmer ..... to cook in liquid that is kept just below the boiling point.
- Slice ..... to cut a food with a knife or slicing equipment.
- Steam ..... to cook food in steam generated by boiling water or in steam equipment.
- Stir ..... to mix ingredients with a circular motion without beating.
- Whip ..... to rapidly beat a food, such as eggs or cream, incorporating air to lighten the mixture and to increase its volume. Usually whipping is done with a whisk, fork, or mixing equipment.

(FROM "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)



## ACROSS

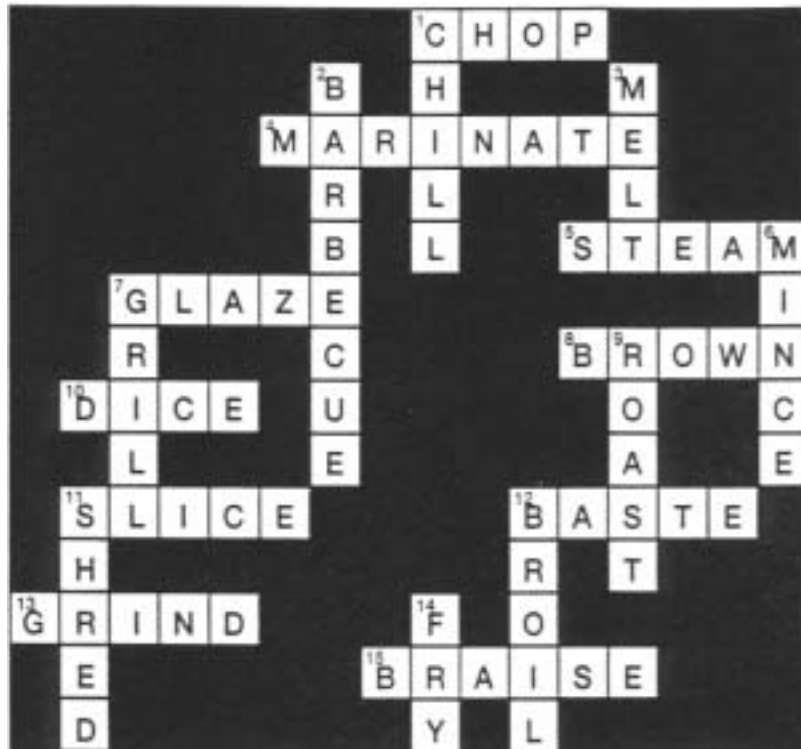
1. Cut into small pieces with knife or equipment
4. Soak food to tenderize and/or increase flavor
5. Cook in steam made by equipment or boiling water
7. Coat to produce a glossy appearance on food
8. Cook until food is uniformly brown on all sides
10. Cut into small cubes with knife or equipment
11. Cut food with knife or slicer
12. Spoon liquids over food to keep it moist
13. Chop or pulverize into small particles
15. Use covered container with small amount of liquid

## DOWN

1. Cool a food with ice water or refrigeration
2. Brush roasted or broiled meat with sauce
3. Turn a solid food into liquid by heating
6. Finely chop food into very small pieces
7. Cook uncovered over direct heat, removing fat
9. Cook by dry heat, uncovered, in an oven
11. Cut or grate food into narrow strips
12. Cook by direct heat from a flame or coals
14. Cook in fat over heat in a fryer or skillet

(From "ONE" Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)





## ACROSS

- 1 . Cut into small pieces with knife or equipment
4. Soak food to tenderize and/or increase flavor
5. Cook in steam made by equipment or boiling water
7. Coat to produce a glossy appearance on food
8. Cook until food is uniformly brown on all sides
10. Cut into small cubes with knife or equipment
11. Cut food with knife or slicer
12. Spoon liquids over food to keep it moist
13. Chop or pulverize into small particles
15. Use covered container with small amount of liquid

## DOWN

1. Cool a food with ice water or refrigeration
2. Brush roasted or broiled meat with sauce
3. Turn a solid food into liquid by heating
6. Finely chop food into very small pieces
7. Cook uncovered over direct heat, removing fat
9. Cook by dry heat, uncovered, in an oven
11. Cut or grate food into narrow strips
12. Cook by direct heat from a flame or coals
14. Cook in fat over heat in a fryer or skillet

(From "ONE" Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)



# Reading for Information

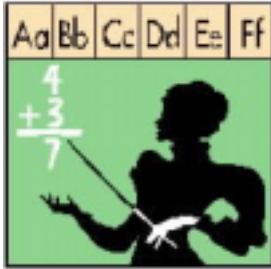


January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# READING FOR INFORMATION

## INTRODUCTION



Reading is the active, deliberate process of searching for meaning from a text. Someone determines that he or she needs to find out something and goes to written material to find answers. Reading and writing cannot be separated. Writers write to be read and always have a purpose in mind before they begin the writing process. The purpose may be to inform, to persuade, or to entertain. When writing, the writer must always keep the reader in mind. When reading, the reader should always think about the writer's intention. Keep in mind that sometimes the writer is clear about his or her meaning; at other times, the meaning is understated or not stated at all.



One hour

Upon completion of this lesson, the participant will be able to:

1. Understand strategies for improving individual reading skills.
2. Identify the strategies for building reading comprehension skills.
3. Apply reading comprehension skills to informational materials found in the workplace.



# OBJECTIVES

- 1. Understand strategies for improving individual reading skills.**
- 2. Identify the strategies for building reading comprehension skills.**
- 3. Apply reading comprehension skills to informational materials found in the workplace.**

## IMPROVING READING SKILLS



**T 1**



**T 2**

When an adult begins to read something, many things are brought into the process— life experience, stored knowledge, common language. As he or she begins to read, all of these factors serve as direct and indirect influences. Show **Transparency #1**, and explain that improving your reading skills requires that you:

1. Know and value what you bring to the printed word;
2. Learn how to use your knowledge and experience more effectively to meet your reading goals;
3. Take responsibility for your reading improvement.

Reading is a skill that is learned, just like riding a bicycle, using a hammer, changing a tire. There are some basic strategies that you can use to improve your reading comprehension. Show **Transparency #2**, and explain that sometimes you need to prepare yourself to read. Some strategies for helping you build your comprehension include:

1. Understand your reading purpose. Ask yourself this: Am I reading this:
  - to learn a new procedure?
  - to find out something specific?
  - to build understanding or to give an explanation?
  - to identify a key event?
2. Look over the piece you are about to read to determine what you already know about the subject. If the subject is totally new, to you,

**IMPROVING YOUR READING SKILLS  
REQUIRES THAT YOU:**

- **KNOW AND VALUE WHAT YOU BRING TO  
THE PRINTED WORD**
- **LEARN HOW TO USE YOUR KNOWLEDGE  
AND EXPERIENCE MORE EFFECTIVELY TO  
MEET YOUR READING GOALS**
- **TAKE RESPONSIBILITY FOR YOUR READING  
IMPROVEMENT.**

**T1**



**T 3**

to you, view this as an opportunity to expand your knowledge and as a challenge to be mastered.

3. Focus on the overall meaning of the text to determine what the author is trying to say. Look for key words that stand out and use them as a cue for reading.

4. Repeat what you just read, putting the information in your own words. (This gives you ownership of the material because the words, and thus the sentiment, now belong to you.)

5. Use context clues (pictures, graphs, headings) to predict the meaning as you go along.

6. Evaluate what you have read. Decide if you agree or if you need to do more reading before you make this decision.

7. Act on your reading through application. In other words, try to apply immediately what you have just read in a real-life situation or in a made-up situation in your mind.

The most important reading skill that an adult can have is being able to find main ideas. Show **Transparency #3**, and explain the difference between a topic and a main idea.

Sometimes the main idea is stated in the first

## **STRATEGIES FOR BUILDING READING COMPREHENSION**

- 1. Understand your reading purpose. Ask yourself why you are reading this. Are you reading:**
  - to learn a new procedure?**
  - to find out something specific?**
  - to understand something more thoroughly?**
  - to identify a key word?**
- 2. Look over the piece you are going to read to determine what you already know about the subject.**
- 3. Focus on the overall meaning of the text to determine what the author is trying to say.**
- 4. Repeat what you have just read, putting things in your own words.**
- 5. Use context clues (pictures, graphs, headings) to predict the meaning as you go along.**
- 6. Evaluate what you have read. Decide if you agree or if you need to do more reading before making a decision.**
- 7. Act on your reading through application.**

**T2**



**An important distinction that needs to be made when determining what the main idea in a text is:**

- **a TOPIC is a word or short phrase that tells you what you are reading about**
  
- **the MAIN IDEA is the central point of the paragraph, article, or book. Usually it is a sentence that sums up what a written passage is all about.**

**T3**



## T 4

sentence; sometimes it is stated at the end of the reading; and at other times it is located somewhere in the middle of the text. The main idea can be clearly stated or it may be implied. Whatever way it is presented, it must be present in the reading — there must be a main idea. Learning to find the main idea is critical in your job, at home, and in business transactions, because it allows you to understand correctly what is being discussed.

Show **Transparency #4** and ask students to determine what the main idea in each passage is.

In the first passage, the main idea is found in the first sentence: Today, more older Americans want to work.

In the second passage, the main idea is found at the end of the passage: Older Americans are assets to today's corporations.

In the third passage, the main idea is not directly stated, but implied: Older Americans are interested in flexible schedules.

Reading for main ideas is **ACTIVE READING**. Active reading requires that you read with a purpose. Before you start reading, ask yourself: What is the main point here? Then read the passage, looking for the answer to that question. After reading the passage, put the main idea into your own words.

## **PASSAGE ONE**

**Today, more older Americans want to work. Many active older Americans are discovering that retirement isn't all it was cracked up to be — that traditional retirement can be financially risky and emotionally unsatisfying. Recent polls show that 40 percent of retired people would rather be employed outside the home than engaged in volunteer or caregiving activities.**

## **PASSAGE TWO**

**Older American workers tend to be active and healthy and bring a wealth of practical experience to their jobs and work teams. They are reliable and stable workers, having fewer absences than their younger co-workers, good overall attendance records, and lower workplace dropout rates. They account for only a small percentage of accidents at work and illegal drug use. Their ability to handle stress lowers their risk of physical and emotional illness. Undoubtedly, older workers are assets to today's corporations.**

## **PASSAGE THREE**

**Many older men and women would like to work late evenings or even weekends so that they could take advantage of uncrowded recreation facilities on weekdays. They'd be willing to work longer hours for a few days in order to get regular three-day weekends. Others would prefer working early mornings, freeing their afternoons for their grandchildren, shopping, gardening, or other hobbies.**

## STUDENT MANUAL



12-1



T 2



T 5

Refer to page 12-1 and have students underline the main idea in each of the following passages. If the main idea is implied, write in your own words what the passage is about.

1 — (C) But the role of the supervisor is changing.

2 — (A) A stress test has several benefits for patients recovering from heart attacks.

3 — (D) The Food Guide Pyramid was designed to help individuals make healthy food choices for eating everyday.

While there are many informational items you will read as a food service employee, some of the more common ones are the many posters and charts that relate to safety in the kitchen. Although these are generally not written in paragraph form, the procedural steps for reading and understanding the content remain the same. Review the steps found on **Transparency #2**.

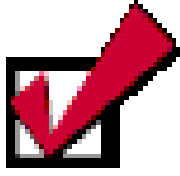
As a group, look at the Checklist for Keeping Foods Fresh, **Transparency #5**.

1. What is the purpose of reading this?  
To understand how to maintain the freshness and healthfulness of food.










2. What do you already know?  
Answers will vary.

## READING FOR MAIN IDEAS

1. (A) Not long ago, the job of supervisor was to direct and control the work activities of his or her subordinates. (B) He or she scheduled vacations, doled out overtime, trained new employees, conducted performance reviews, and, in general, saw to it that the work of a department got done. (C) But the role of the supervisor is changing. (D) With an increasing number of organizations using work teams to organize and virtually run their own mini-factories, the new breed of supervisor is better defined as leader, coach, facilitator, or technical resource.
2. (A) A stress test has several benefits for patients recovering from heart attacks. (B) It can help determine proper activity levels for work and exercise. (C) It can identify those at risk for another attack. (D) And it can measure the effectiveness of medications.
3. (A) No one food group is more important than the others. (B) A good start to healthy eating is to start with plenty of breads, cereals, rice, pasta, fruits and vegetables. (C) But each of the food groups provide some of the nutrients you need. (D) The Food Guide Pyramid was designed to help individuals make healthy food choices for eating everyday. (E) Go easy on fats, oils and sweets—the foods listed in the small tip of the pyramid.



## Checklist for Keeping Foods Fresh and Free of Germs

- 
-  Milk, cheese, butter, and fish should always be stored in the refrigerator.
  -  Check the refrigerator temperature every day. It should be 45 degrees or colder.
  -  Check the date on all foods. If the date has passed, throw the food away.
  -  Make sure the freezer temperature is about 0 degrees.
  -  Thaw frozen meat in the refrigerator.
  -  Use refrigerated meat within 48 hours.
  -  Cook fish as soon as possible. Do not keep it more than 24 hours after it is bought or thawed.
  -  Use hot and cold servers to protect cooked food while it is being served.
  -  Keep cold servers at 40 degrees or colder. Keep hot servers at 140 degrees.

## SKILL APPLICATION



## STUDENT MANUAL



12-2 & 12-3

3. What is the overall meaning?  
Preserving food for safe consumption.
4. Put the information in your own words.  
Responses will vary.
5. Use context clues, if needed.  
This vocabulary should be familiar to participants.
6. Evaluate what you have read.  
Students may suggest alternative methods they might follow.
7. Act on your reading.  
Visualize (mentally) how these rules would apply to you.

Refer to the copies of the additional safety sheets found on pages **12- 2 & 12-3**. Ask students to demonstrate their understanding of the seven steps in the process of reading for information by applying these seven points to one or both of the handouts. They should address each point as demonstrated in the group procedure described above.

# Warning for All Aides/Cooks



## Protect yourself

Please read these rules  
before using the stove.



To protect yourself, use pot holders to pick up hot pots. Do not use towels for this job. Towels do not protect your hands from the heat. They catch fire easily.



To avoid burns, don't drop food into hot oil. Place food in the oil slowly and carefully. Wear cooking gloves to do this job.



Remove pot covers carefully. Lift the lid on the side that is away from you. This allows steam to leave the pot without burning you.



# WASH YOUR HANDS

Lather hands with soap.



Clean thoroughly underneath fingernails and between fingers.



Wash hands and wrists for at least 20 seconds.



Rinse thoroughly with clean, hot water.



Dry hands with disposable towels or under an air dryer - NEVER use your apron or kitchen towel.



# Reading to Follow Directions



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# READING TO FOLLOW DIRECTIONS

## INTRODUCTION



Reading written directions is an important part of most jobs. Directions may be a short note from a supervisor, or it may be directions that are found in letters, memos, or graphic material. Directions vary in purpose as well. You may need to follow directions to operate a piece of business equipment or to check policies or procedures that are unique to your company. You may also need to follow directions to fill out forms, place phone calls or prepare menu items.

Whatever the reason, the more effective your ability to follow directions, the better your job performance will be. No where is this more true than in food service.



**T 1**

Show the cartoon as **Transparency # 1**. The characters in the cartoon are having a great time, but will the food taste good? They might get lucky, but they might not. And it's a pretty safe bet that they couldn't repeat the recipe again if they needed to.

Food service work is, of course, serious business. Your job is not to experiment, but to serve a quality product that tastes good every time it is served. For this reason, standardized recipes are used and need to be followed accurately



One hour

**Hey! If it turns out good how will we  
make it again?**



**T 1**

(From "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)

**Reading to Follow Directions Page 2**



## WRITTEN INSTRUCTIONS



**T 2**

## SIMPLIFYING INSTRUCTIONS



**T 3**

Upon completion of this unit, participants will be able to:

1. Simplify written directions into small, more manageable pieces.
2. Use more effective measures to read memos, letters, and other key documentation found in the workplace.
3. Apply reading skills for following job specific directions.

Instructions, directions and procedures tell you HOW to do something—how to perform a particular set of tasks to achieve a goal. Show **Transparency # 2** and explain that sometimes directions are written in an orderly, easy-to-follow format. At other times, they are written in paragraph form and can seem overwhelming to the experienced, and especially to the inexperienced, worker. The key to following any instructions is to simplify them by separating them into smaller, more manageable parts. Show **Transparency # 3** and go over the steps for simplifying instructions:

1. Take a positive, confident “I can do this” attitude toward the instructions. (Think of all the times you have read something— whether cooking or repairing something—and been able to accomplish what you set out to do.)
2. Read all the instructions from beginning to end to get the whole picture before jumping in to perform any one step. (Many people think they should follow directions one at a time, but, in reality, you need to get the full picture before starting one step.)

# OBJECTIVES

- 1. Simplify written directions into small, more manageable pieces.**
- 2. Use more effective measures to read memos, letters and other key documentation found in the workplace.**
- 3. Apply reading skills for following job specific directions.**

## SKILL APPLICATION



**T 4**

3. Ask yourself AND be able to answer:  
What exactly am I being asked to do here?  
What do I need to accomplish?  
Why? What is the desired result or end product?
4. Identify unfamiliar words, technical terms, abbreviations, and acronyms. (A good practice is to always underline these words that you don't know or are not comfortable with and make notes in the margin as to their meanings before you begin.)
5. Locate any additional items that you may need before you begin. Things like:
  - ◆ Materials (ingredients, supplies)
  - ◆ Equipment (pans, utensils)
  - ◆ Information (recipes, nutritional info)
6. Single out the action words (verbs) in the instructions—these will provide you with the actions you will need to take.
7. If the instructions are written in paragraph form, break them up into individual steps, one to a line, and introduce the line with a verb.

Show **Transparency # 4** and have students simplify the instructions for Using a Computer Mouse. Explain that a lot of information given in instructions is put there for background purposes and is not really relevant to the instructions themselves.

## DIRECTIONS FOR SUBMITTING INSURANCE CLAIMS

1. Complete, sign, and date the Health Care Reimbursement Account (HCRA) claim form.
2. Attach any documentation that describes the nature of the expense.
3. Mail the HCRA Claim Form and documentation to Blue Cross/Blue Shield Benefits Department.

T 2



## **SIMPLIFYING INSTRUCTIONS**

- 1. Take a positive, confident “I can do this” attitude toward the instructions.**
- 2. Read all the instructions from beginning to end to get the whole picture before jumping to perform any one step.**
- 3. Ask yourself AND be able to answer:**
  - ♦ What exactly am I being asked to do here? What do I need to accomplish?**
  - ♦ Why? What is the desired result or end product?**
- 4. Identify unfamiliar words, technical terms, abbreviations, and acronyms.**
- 5. Locate additional things that you need to perform the task, like:**
  - ♦ materials (ingredients, supplies)**
  - ♦ equipment (pans, utensils)**
  - ♦ information (recipes, nutritional info.)**
- 6. Single out the action words (verbs) in the instructions to decide what actions you will need to take.**
- 7. If the instructions are written in paragraph form, break them up into individual steps, one to a line and beginning with a verb.**



## SKILL APPLICATION



**T 5**

A suggested answer might be:

1. LOCATE the mouse pointer on the Windows desktop and then move the mouse across your desk.
2. POSITION the mouse pointer over the MY COMPUTER ICON.
3. With the pointer over the icon, PRESS and RELEASE the left mouse button.
4. With the icon selected, PRESS and HOLD down the left mouse button.
5. MOVE the mouse down and to the right and RELEASE the mouse button.

Point out that putting things in a step-by-step method is much less intimidating to work with because the steps appear clearer cut to the eye.

After you learn to simplify instructions by putting them into manageable steps, you can begin to think of the type of writing you are dealing with. One type of writing that is very common in the workplace is the memo. A memo is a type of correspondence that passes along information or gives directions. Show **Transparency #5** and explain that there are several things you should do when looking at memos:

1. First, point out the information from the format clues. (It was written by someone in the Human Resources department on June 5th and concerns summer flex-time hours.)

## USING THE MOUSE

**The mouse is a handheld input device that you roll on a smooth surface (such as your desk or a mousepad) to position the mouse pointer on the Windows desktop. When you move the mouse, the mouse pointer on the screen moves in the same direction. The buttons on the mouse are used to select icons and commands. To begin using the mouse, you need to locate the mouse pointer on the Windows desktop (screen) and then move the mouse across your desk. Find the “My Computer” icon on the screen and position the mouse pointer over it. When positioned over the “My Computer” icon, press and release the left mouse button. After you have selected the icon, you should press and hold down the left mouse button and then move the mouse down and to the right and release the mouse button . The icon becomes dimmed and moved with the mouse pointer. When you release the mouse button, the icon relocates on the desktop.**

**T 4**

TO: Richard Gaines, Accounting Dept.  
FROM: Julia Long, Human Resources  
DATE: June 5, 2000  
SUBJECT: Summer Flex-time Hours

Flex-time hours are 8:00 AM to 4:30 PM for nine days, with the tenth day off. This day (flex-day) is chosen by the employee, with the supervisor's permission.

Employees must say on Form F-3 the day they will take as their flex-day. This must be the same day each time. For example, employee A might choose Monday of the first week, and employee B might choose Wednesday of the second week.

Because flex-time results in a net loss of 45 working minutes in each two-week period, employees must stay late one day to make up this time. This day is set by the supervisor and applies to everyone in that department.

Supervisor must initial forms before forwarding them to me via inter-office mail.

**T 5**



2. Look or think about what you already know about this subject. (If you were very familiar with the topic, you wouldn't need to read in-depth. If you were less familiar, you will need to read more carefully or even more than once.)

3. Decide whether to continue reading the material. (Determine at this point if this material is relevant to you now or if you need to revisit it at a later time.)

4. If you decide to continue the reading, identify the important points in the message— material that will be directly relevant to you or your co-workers on the job.

5. Organize the information in such a way as to help you carry out the specific instructions which have been spelled out. (This is where you will simplify the instructions by making a list, either verbal or written, of the tasks to be accomplished.)

## WORKING WITH A RECIPE

### STUDENT MANUAL



13-1

Now let's apply some of these principles to the most common type of written direction that the food service assistant needs to follow — a recipe.

Use the recipe for Heart-Healthy Lasagna, **page 13-1**, to demonstrate the steps for following directions on a written recipe. Use **Transparency #3** as your guide.

1. Take a positive attitude toward following instructions. Remember the importance of providing a quality standard every time.
2. Read all instructions in order to understand the entire process you need to follow.
3. Understand the purpose of the instructions — to prepare the dish accurately — and the desired outcome— lasagna that tastes good.
4. Identify unfamiliar words and terms. Recall the definitions for combine, grate, sprinkle, etc.
5. Locate the additional things you will need to complete the food preparation — ingredients, equipment, utensils, etc.
6. Notice the action words —combine, brown, grate, pour, cover, cut, etc. Cooking requires a lot of action!

7. Most recipes used in school food service follow the USDA standard recipe format rather than a paragraph form. When using local recipes, you may find it helpful to identify and list individual steps.

## SUMMARY



Divide the class into small groups and have each group demonstrate the preparation of a simple recipe. If the item can be cooked and shared by the class, do so. If your classroom is not accessible to the kitchen, have enough ingredients on hand to prepare the recipe up to the point of cooking. Be sure students discuss the process they use for following the directions, as shown in the class demonstration using the lasagna recipe.

# HEART-HEALTHY LASAGNA

## MAIN DISHES

## INGREDIENTS

	25 Servings	100 Servings	For _____ Servings
Tomato Puree	2 ¼ cups	2 ¼ qts.	
*Tomato Paste	3 cups	3 qts.	
Celery, chopped	½ cup	1 pt.	
Black Pepper	¼ tsp.	1 tsp.	
Bell Pepper, chopped	¼ cup	1 cup	
Water	1 ¼ qt.	1 ¼ gal.	
Sugar	1 Tbsp.	¼ cup	
Basil	½ tsp.	2 tsp.	
Oregano	1 Tbsp.	¼ cup	
Parsley	2 Tbsp.	½ cup	
Garlic Powder	1 tsp.	1 Tbsp., 1 tsp.	
*Ground Beef, Extra Lean	1 ¾ lbs.	7 lbs.	
Onions, chopped	¾ cup	1 pt., 1 cup	
*Mozzarella Cheese, grated	1 ½ lbs.	6 lbs.	
Cottage Cheese	1 ¼ lbs.	5 lbs.	
Lasagna Noodles, uncooked	1 lb., 2 oz.	4 ½ lbs.	

**SERVING:** 1 serving provides 2 oz. meat/meat alternate, ⅓ cup vegetable and ¾ serving bread/bread alternate.

**YIELD:** 25 servings, one 12" x 20" x 2 ½" steam table pan

100 servings, four 12" x 2 ½" steam table pans

\*Commodity food item

## INSTRUCTIONS

1. Combine puree, paste, celery, water, sugar and seasonings. Let stand, covered, 24 hours in refrigerator.
2. Brown meat with onions. Drain.
3. Combine meat and sauce.
4. Grate mozzarella cheese. Set aside amount to be used as topping.
5. Pour about 1 quart meat sauce in greased 12" x 20" x 2 ½" steam table pan.
6. Cover with a layer of dry noodles. Repeat layers of sauce, noodles, cheeses, and end with 1 layer of sauce.
7. Sprinkle remaining mozzarella cheese over top.
8. Cover pans tightly with lid or foil and bake 1 hour at 325-350° F.
9. Let stand 15 to 30 minutes before cutting for easier serving.
10. Cut each pan 5 rows x 5 rows.

(From "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)

**MAJOR EQUIPMENT NEEDS:** Convection oven, grater/chopper, tilting skillet or kettle

**NUTRIENTS PER SERVING:** (Recipe analyzed using part-skim mozzarella cheese.)

1% low-fat cottage cheese, and noodles without eggs.)

Calories.....269	Vitamin A.....1285 IU
Protein.....19.3 g.	Vitamin C.....24 mg.
Carbohydrate...24.6 g.	Iron.....2.1 mg.
Fat.....10.5 g.	Sodium.....269 mg.





# Time Management

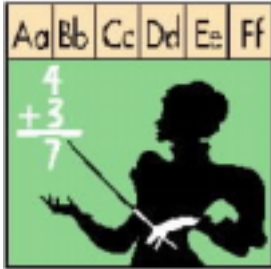


January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# TIME MANAGEMENT

## INTRODUCTION



Ask students to give their definition of a goal. Responses should suggest that a goal is something you want to do. At home, your goal might be to wash laundry or to plant a garden. Similarly, our work goals are about getting things done.

In the school food service program, the work goals are the many tasks that must be completed in order to prepare and serve one or more meals per day. Since those meals are scheduled to be served at pre-determined times of the day, it is essential that tasks be performed in a timely and efficient manner. How can this be achieved? The best assurance is provided by planning the required tasks and organizing both the time and resources involved.



One Hour

Upon completion of this training module, participants will be able to:

1. Recognize the importance of scheduling activities.
2. Identify strategies required in prioritizing and sequencing activities.
3. Identify organizational skills that maintain focus on a plan of action.

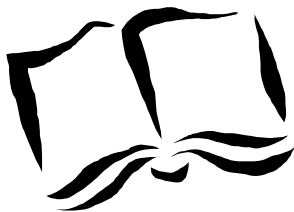


# OBJECTIVES

- 1. Recognize the importance of scheduling activities.**
- 2. Identify strategies required in prioritizing and sequencing activities.**
- 3. Identify organizational skills that maintain focus on a plan of action.**

## THE IMPORTANCE OF PLANNING

### STUDENT MANUAL



14-1

Have students turn to “A Day In the Kitchen” page 14-1. Have them work in pairs to identify problems that occur in this scenario. After each pairing has had an opportunity to list problems, have the groups share their findings and develop a list for the group that is posted on a flip chart. The list should include the following:

- Mrs. Jones had not made a work schedule for that day.
- Jane did not follow the work schedule for Monday, which should have instructed her to thaw the chicken in a cooler.
- Mary does not know what kinds of rolls to make for the menu that day.
- Mary does not know how many rolls to make.
- Debbie does not use a cart to gather ingredients for the slaw.
- Debbie and Jane do not know where the onions are stored.
- Debbie leaves a knife in the sink.
- The substitute is not told what quantity of potatoes to make or what size pan to use.
- When a work schedule is finally prepared, it is not legible. Debbie mistakes the number 10 for 16 and opens too many cans of peaches.
- The storage location of the baked cookies was not listed on the work schedule. The substitute has to ask where they are stored.
- Mrs. Jones decides to make smaller rolls for the younger students, but has not listed this on the work schedule.

## A Day in the Kitchen

1. Mrs. Jones, the school nutrition manager, comes to work at 7:00 a.m., 30 minutes before Jane and Susie. Mary and Debbie begin their work day at 8:30 a.m.
2. Mrs. Jones arrives at school and begins to make a work schedule for the day. She then remembers that the ovens must be turned on and discovers Jane forgot to put the chicken in the refrigerator on Monday. She hurriedly dumps the chicken in a sink of cold, running water. Then she goes back to complete the work schedule.
3. Jane comes to work at 8:10. Susie calls at 8:15 to report that she is sick. Jane begins to prepare the chicken while Mrs. Jones frantically tries to find a substitute.
4. Mary comes into Mrs. Jones' office when she gets to work to ask what kind of rolls are on the menu for today. She collects some of the ingredients and comes back to the manager's office to ask how many rolls to make.
5. After Debbie goes to the refrigerator to get the cabbage for slaw, she goes to the storage room for the pickle relish and mayonnaise. All of the carts are in use, so she makes four trips to the storage room, because she would rather do that than wait 30 minutes for a cart. She spent five minutes looking for the onions and finally came to ask Jane where they were. Jane didn't know, so they both went to ask the manager.
6. Debbie begins to wash the cabbage and forgets that she has dropped the knife in the sink. She cuts her finger. Although it is not a serious cut, she reports it to the manager who reports it to the School Nutrition Program Director. After the finger is bandaged, Debbie slips on a plastic glove and continues.
7. Mrs. Jones decides to work on her invoices and has them spread out on the desk when a salesman comes in to present the "bargains of the week." He stays for 15 minutes. The substitute reports to work and waits 10 minutes for the manager to finish with the salesman.
8. The substitute is assigned to mix instant potatoes—three pans full. To Mrs. Jones' dismay, at serving time she discovers that the substitute has mixed only enough potatoes for three half pans instead of three full pans.
9. Mary gets a phone call and while she is talking on the phone, she knocks the stack of invoices off the manager's desk. While Mrs. Jones and Mary pick up the invoices, a pan of rolls burns. Mrs. Jones tells Mary to make smaller rolls for the younger students.
10. Debbie misreads the work schedule and opens 16 cans of peaches instead of 10 cans.
11. The substitute asks Mrs. Jones about the cookie on the menu. Mrs. Jones stops working on the invoices and shows her where the cookies were stored when they were made on Tuesday.
12. Finally, at serving time lunch was ready, but the staff was completely exhausted!

## 14-1

(From "ONE", Orientation for New Employees, developed by the School and Community Nutrition Program, Georgia State Dept. of Education)

## DEVELOPING A PLAN



**T 1**

Conclude the exercise by asking how these problems could have been avoided. The responses should indicate that by preparing a work schedule ahead of time, the food service team could have avoided the problems and worked in a much more timely manner.

A plan helps you reach your goal on time by prioritizing and sequencing tasks and by directing you to the materials and resources you will need.

Ask students to share plans they have developed for completing a personal task. An example might be the steps in planning a vacation trip or picking up a carpool. Discuss the steps which participants have used in past experiences. The discussion should demonstrate the point that a plan allows you to fully understand your goal or project and to be aware of the time and materials needed.

In the school kitchen, the plan most often followed is the Daily Schedule. Show the sample schedule provided (**Transparency #1**). As a group, review the schedule shown for “Ann”. Use this example to identify the skills used in following a plan.

## Sample Work Schedule

Menu	Recipe Number	Quantity to prepare	Pan Size	Equipment	Special Comments
Lasagna (A) or.....	D-25 .....	100 svg.....	12"x20"x2½"	Convection Oven	Cut Lasagna 5x5
Salisbury Steak(A)..... with Gravy(A).....	D-33, G-3.....	300 svg.....	12"x20"x2½"	Convection Oven Tilting Skillet	
¾c Mashed..... Potatoes (E) or ¾c Green Beans (E).....	I-5.....	300svg.....	½ size.....	Mixer	
¾c Fruit (E).....	E-12.....	250 svg.....	Ind. Portions	Steamer	
2 ea Fresh Plums (E).....		150 svg.....	18"x26"x1"-Bake ..	Convection Oven.....	Slice Bread
Italian Bread (L).....	B-11.....	400 svg.....	12"x20"x2½"-Serve		20 slices/loaf

Time	Jane	Ann	Lynda	Ellen	Gail	Kelly
7:30-8:00	Organize day					
8:00-8:30	Prepare orders	Gather supplies	Gather supplies			
8:30-9:00	General supervision	Prepare lasagna	Prepare bread			
9:00-9:30	General supervision	Prepare lasagna (In oven at 9:45 a.m.)	Prepare bread			
9:30-10:00	10 min. break - General supervision	Prepare steak	In oven at 9:45			
10:00-10:30	General supervision	Prepare steak	Clean baker's area	Gather supplies prepare/plan fruits		
10:30-11:00	General supervision	(Steak in oven at 10:30 a.m.) Pre- pare gravy/ combine & sim- mer	10:45 Slice bread	Prep vegetables for finishing		
11:00-11:30	Issue money Evaluate products	Combine steak/ gravy. Cut lasa- gna—11:15. Food to line	30 min. break	Finish vegetables 11:15 food to line		Count money Preview menu
11:30-12:00	Supervise line & greet students	30 min. lunch break	Serve on line	Serve on line	Dishroom	Cashier
12:00-12:30	Supervise line & greet students	Preparation (see tomorrow)	Serve on line	Serve on line	Dishroom	Cashier
12:30-1:00	Supervise line 30 min. lunch	Preparation (see tomorrow)	Serve on line	Serve on line	Dishroom	Cashier
1:00-1:30	Check leftovers & give instructions	Clean-up	Clean-up	10 min. break	Dishroom	10 min. break Count money
1:30-2:00	Prepare bank deposit & reports	Clean-up	Clean-up	Clean-up	Dishroom 10 min. break	
2:00-2:30	Check Kitchen				General clean-up	
2:30-3:00			<b>T 1</b>			



**T 2**

1. Review the overall schedule (plan).
  - Do you understand the plan?
  - What questions might you still have?
  - Could the plan be broken into smaller steps?
  
2. Identify materials you will need.
  - Do you know where materials are located?
  - Have you prepared your own workspace?
  
3. Budget your time—
  - Visualize the tasks to be completed.
  - Is the time frame provided realistic?
  
4. Check progress often.
  - Don't count on your memory—keep the written schedule available for review
  - Make adjustments for problems/emergencies
  
5. Evaluate your plan when tasks are completed.
  - What would you change next time?
  - Are there omissions or problems in the plan?



## **SKILLS TO USE IN FOLLOWING A PLAN**

- 1. Review the overall schedule (plan).**
  - **Do you understand the plan?**
  - **What questions might you still have?**
  - **Could the plan be broken into smaller steps?**
  
- 2. Identify materials you will need.**
  - **Do you know where materials are located?**
  - **Have you prepared your own workspace?**
  
- 3. Budget your time -**
  - **Visualize the tasks to be completed.**
  - **Is the time frame provided realistic?**
  
- 4. Check progress often.**
  - **Don't count on your memory—keep the written schedule available for review**
  - **Make adjustments for problems/emergencies**
  
- 5. Evaluate your plan when tasks are completed.**
  - **What would you change next time?**
  - **Are there omissions or problems in the plan?**

## THE IMPORTANCE OF FOCUS



**T 3**

Staying focused means blocking out all the distractions that rob you of your ability to concentrate on your work. Have the class generate a list of common distractions in the school kitchen. For example:

- coworkers
- loudspeakers
- vendor deliveries
- phone calls
- noisy equipment
- students

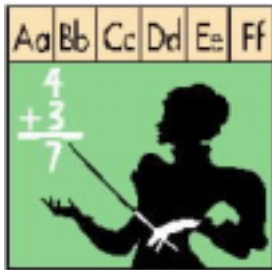
While we may be able to remove ourselves from some distracting situations, many of these attention grabbers are not within our control. It is within our control, however, to stay focused in spite of them. The following steps will help: (**Transparency #3**)

1. Follow your schedule. Refer to the daily plan to see if you are “on” schedule with the time and activity sequence. Check your progress frequently.
2. Limit personal time on the job. Chatting with coworkers is an easy distraction in the school kitchen. Be friendly and cooperative, but limit unnecessary discussion of personal issues. It will often take assertive communication skills to limit your involvement with talkative coworkers. You may need to explain that, while you are interested in the conversation, it would be better to talk during your lunch break or after work.

## **STEPS FOR STAYING FOCUSED**

- 1. Follow your schedule. Refer to the daily plan to see if you are “on” schedule with the time and activity sequence. Check your progress frequently.**
- 2. Limit personal time on the job. Chatting with coworkers is an easy distraction in the school kitchen. Be friendly and cooperative, but limit unnecessary discussion of personal issues. It will often take assertive communication skills to limit your involvement with talkative coworkers. You may need to explain that, while you are interested in the conversation, it would be better to talk during your lunch break or after work.**
- 3. Avoid getting “blocked” on a project. If you’re stumped on how to proceed with a task, ask for help from a coworker or manager.**
- 4. Notice the personal habits that rob you of time and focus. Are there changes you could make?**

## ORGANIZING MATERIALS AND WORKSPACE



3. Avoid getting “blocked” on a project. If you’re stumped on how to proceed with a task, ask for help from a coworker or manager.
4. Notice the personal habits that rob you of time and focus. Are there changes you could make?

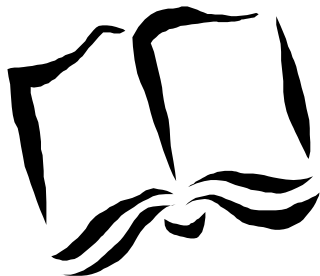
A school kitchen relies on a team to meet the daily goal of preparing meals for a large number of students and staff members. With so many involved, organizing the workspace and its many components is essential. While the overall workspace design and placement of equipment is not an individual responsibility assumed by the assistant, it is the responsibility of all team members to maintain the cleanliness and order that is necessary if resources are to be available and easily utilized.

Each assistant should quickly become acquainted with storage areas for recipes, equipment, products, etc. Materials and equipment should be stored correctly when not in use so that they will be immediately available when needed.

Work stations should be clean and uncluttered. Sanitation is, of course, required; but a tidy work area also ensures that materials are at your fingertips and that delays don’t result from having to hunt for supplies.

**SKILL  
APPLICATION**

**STUDENT MANUAL**



**14-2**

The school kitchen is a shared work space, but each person needs to be aware of organizing the personal space they are using at any given time. Whatever the task, have your materials gathered and arranged in a way that's comfortable and efficient for your use.

Ask students to demonstrate their understanding of this unit by using the "Happy Valley Primary Work Schedule" found on page 14-2, to develop a personal plan for the day. Each participant should choose one worker on the list to represent. Based on the tasks assigned to that work, have participants develop a time referenced schedule of activities that they would follow in order to get the job done.

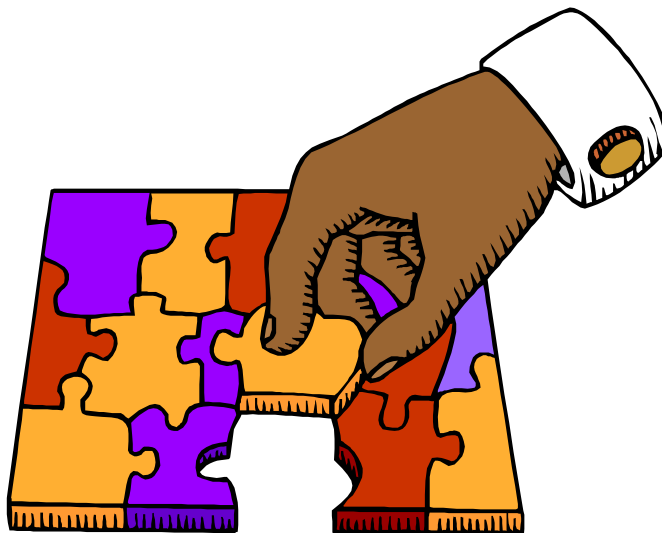
Call on volunteers to share their plans with the group.

## Happy Valley Primary Work Schedule

		Menus		
		Today	Tomorrow	
School: <u>Happy Valley Primary</u>  Date: <u>10/5/94</u>  Work Day Begins: <u>8:00</u>  Food on steam table by: <u>10:50</u>  Manager: <u>Sue Blue</u>	Notes  Take 55# ground pork out of freezer for Friday.  Make angel biscuits for Thursday breakfast (Jane)  Put 13 #10 cans applesauce in cooler for Thursday noon (Jane)	No. to prepare  Fish Krispies (600) Buttered Carrots (600) Creamy Coleslaw (600) Cherry Crisp (600) Cornbread (600) Milk	No. to prepare  Chicken Salad on Lettuce (600) Corn on Cob (600) Tomato Wedges (600) Saltines (1200 pkg.) Chilled applesauce (600)	
April	Mae	June	Jane	Sally
Make Cornbread (6 pans) using recipe B-9. Cut 10 x 10          Assist with coleslaw. Dish machine.	Prepare 60# frozen carrots using recipe I-1.       Assist with fish. Serve fish (1 piece) and 1/4 cup carrots. (Use #16 perforated spoodle.)	Make cherry crisp following C-7a (600). Cut 5 x 10.      Serve cherry crisp and cornbread.  Serve coleslaw. (Use #16 spoodle.)	Make coleslaw using recipe E-6.   Assist with cornbread.   Dish machine.	Assist with cherry crisp.  Pan up 600 portions of fish and begin to cook at 10:30 A.M.   Kitchen back up. Boil 215 lbs. whole chickens for Thursday.



# Problem Solving



January 2001

400-A Church Street · Laurens, SC 29360  
(864) 984-1928 · Fax (864) 984-0959  
E-mail [scwrc.org](mailto:scwrc.org)

# PROBLEM SOLVING

## INTRODUCTION



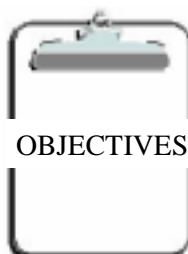
Problems are everywhere! We face them at home, at work and in leisure activities. In food service, problems may occur in defining duties, training for duties or even performing duties. There's hardly a phase of work or life that is problem free. Even though problems are a natural part of life, solving problems creates much of the stress we encounter.

Some problems can be anticipated and avoided, but many cannot. For this reason, it's important to arm yourself with a method or process for dealing with problems as they occur. It is the purpose of this training module to explain the importance of following a standard process for solving problems and to identify steps that should be followed in that process.

One Hour

Upon completion of this unit, participants will be able to:

1. Identify the steps in the problem solving process.
2. Apply the problem solving process to a workplace problem.





# **OBJECTIVES**

- 1. Identify the steps in the problem solving process.**
- 2. Apply the problem solving process to a work-place problem.**



(Note to instructor: Ask participants to generate a list of examples of the methods they currently use to solve problems. List these on a flip chart as they are suggested.)

Answers may include:

- ◆ Ignore the problem.
- ◆ Postpone action.
- ◆ Act quickly with the first idea you have.
- ◆ Let others tell you how to solve the problem.
- ◆ Leave the solution to chance or “fate”.
- ◆ Overwhelm yourself with research on possible solutions.
- ◆ Follow your emotions—choose a solution based on intuition only.

Most methods of problem solving involve decision making or choosing between possible solutions. While no one method can be 100 percent effective for solving all problems, it can be said that having NO process or system to follow is more likely to leave problems unsolved or inappropriately resolved.

## THE PROCESS



**T 1**

A successful problem solving strategy includes the following elements:

1. Recognize and define the problem.
2. Research the cause(s) of the problem.
3. Analyze the information you gather.
4. List possible solutions to the problem.
5. Choose the best solution from your options.
6. Develop and implement an action plan to solve the problem.

## **STEPS IN THE PROBLEM SOLVING PROCESS**

- 1. Recognize and define the problem.**
- 2. Research the cause(s) of the problem.**
- 3. Analyze the information you gather.**
- 4. List possible solutions to the problem.**
- 5. Choose the best possible solution from your options.**
- 6. Develop and implement an action plan to solve the problem.**

**T 1**

## STEP ONE



Further explanation of each part of the problem solving process follows:

### **STEP ONE: Recognize and Define the problem.**

What is a problem?

(Note to instructor: Ask participants to answer this question orally. They should be able to suggest many answers to this question.)

Basically, a problem is “an undesirable situation which seems to have no apparent solution.”

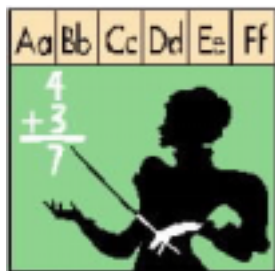
(Note to instructor: Have participants visualize this definition by thinking of a problem as one idea or goal that is opposed by a counter idea or goal.)

Two examples of problems are:

Want new car BUT Need to save \$ Understand job BUT Process changes
--

These problems and all others require an attitude on the part of the employee that they can indeed be solved. Then problems require a determination to find a solution.

The workplace can create many situations in which ideas and/or goals are in opposition. For example, a change in managers, late deliveries, changes in recipes, changes in procedures, substitutes, personal conflicts, etc. can interrupt the normal flow of work.



In spite of the fact that problems can easily occur in the workplace, correctly identifying problems can often be difficult. This results from the fact that not all employees perceive a given situation as a problem. Also, some employees prefer to ignore or avoid problems and the issues they represent. These are not such a concern if the problem is isolated to only one individual, but if the problem needs to be addressed by several people, difficulties can certainly arise.

Regardless, a problem cannot be solved until there is agreement by all involved that a problem does exist. The problem can be clearly labeled and defined by writing a problem statement. For example:

You are given a new recipe to fix, but no one has time to show you how to do it.

You can't find the answer to a question about your time schedule that you need to know.

Your training ends tomorrow and you still aren't sure exactly how to do the job.

You have just started your job but there is no plan for training you.

## STEP TWO

**STEP TWO: Research the cause(s) of the problem.**



### STEP THREE

(Note to instructor: Introduce participants to the concept of the “Iceberg Rule”. This rule states that 80% of the “iceberg”, or the problem, lies below the surface. The tip of the iceberg represents only the symptoms of the problem, with the real problem lying below the surface.)

The way to determine the real problem and its root causes is through questioning — gathering as many facts about the situation as possible. Questions that can aid your investigation include:

- ◆ What’s wrong?
- ◆ What has changed?
- ◆ When did it occur?
- ◆ Who is involved?

### **STEP THREE: Analyze the information you gather.**

What conclusions can be reached from your research? In food service, particularly, there are often factors present that may set the stage for problems to occur:

- ◆ Lack of communication
- ◆ Incomplete or inaccurate information
- ◆ Personal issues
- ◆ Cultural differences

Your goal in this step is to review all the facts of the situation and to determine the single most significant source of the problem.

## STEP FOUR



### **STEP FOUR: List possible solutions to the problem.**

Make a list of all solutions that have the slightest chance of resolving the problem. To help in your preparation of this list, consider the following questions:

- ◆ What would solve the problem?
- ◆ What solutions have already been suggested?
- ◆ What different methods might work?
- ◆ How could you stop this situation from recurring?
- ◆ What would happen if nothing were done?

## STEP FIVE

### **STEP FIVE: Choose the best solution from your options.**

Evaluate each item in your list of possible solutions and determine which one has the best chance of successfully solving the problem. Several options may seem “best”, but choose only one to consider at first.

Other options may need to be reconsidered if option one proves to be unsuccessful.

## STEP SIX

### **STEP SIX: Develop and implement an action plan to solve the problem.**

A plan helps you to organize yourself to take action and keeps you focused on your goal (solving the problem).

## **ACTION PLAN**

Action plan steps should include:

- ♦ Identify your objective — the optimal solution to the problem.
- ♦ List action steps to be taken.
- ♦ Identify the best sequence of action steps.
- ♦ Assign responsibility for each action step.
- ♦ Set a deadline for the completion of each action step.
- ♦ Consider alternative plans, should changes become necessary.

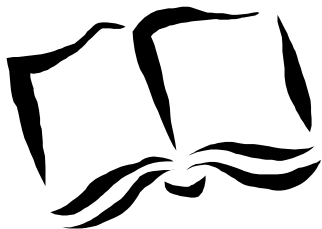
T 2





T 2

STUDENT MANUAL



15-1

Action plan steps should include:

- ◆ Identify your objective—the optimal solution to the problem.
- ◆ List action steps to be taken.
- ◆ Identify the best sequence of action steps.
- ◆ Assign responsibility for each action step.
- ◆ Set a deadline for the completion of each action step.
- ◆ Consider alternative plans, should changes become necessary.

(Note to instructor: A transparency of the action plan is provided for teaching the plan initially. It will be used again later. At this time, use the earlier transparency entitled “Steps in the Problem Solving Process” to do the summary activity that follows.)

Work as a group on the following problem:

You have been assigned to share kitchen clean-up duties with another assistant, but the two of you don’t get along.

Step One has been done for you — the problem is recognized and defined.

(Note to instructor: Use **transparency #1** entitled “Steps in the Problem Solving Process” to lead participants through the problem above. Have participants review the Action Plan Form on page 15-1 and write the problem on the top border of the Action Plan Form. Ask the class to discuss how they might apply each of the remaining



**T 2**

## **STUDENT MANUAL**



**15-2**

steps in the problem solving process to this situation. Ask participants to continue using the Action Plan Form to write their plan for solving this problem.)

(Responses will vary, but attention should be given to each step in the process. This example problem is common in food service and participants should be able to suggest many causes and many solutions. Choosing the best solution may be difficult in this fabricated situation, but be sure that participants recognize that an optimal solution is the ultimate goal, and that the action plan will guide them to reach that goal.)

Now that we seem to understand and are able to apply the steps in the problem solving process, and we have written an action plan, there is a last part called contingency planning we must consider.

(Note to instructor: Use **transparency # 3** and **page 15-2** entitled “Contingency Planning Worksheet” to explain developing possible alternative solutions.)

Consider that the first action plan you plan to try may fail. Look carefully at your plan.

Ask yourself the three questions listed on the contingency planning worksheet. They are:

## SUMMARY

1. What could go wrong?
2. How could you prevent it from happening?
3. How can you change your plan if it happens?

The answer to these questions are helpful in making your first (and optimal) plan successful, but also serves as insurance in case it isn't. The third column of the contingency planning worksheet becomes the beginning of a second solution.

The more times you follow the steps of problem solving, action planning, and contingency planning, the faster and more easily you will become able to move quickly to resolution of a problem. That is not to say that all problems will become easier to solve, but it is to say that you will be equipped to more effectively implement the process. You will empower yourself to be able to logically and reasonably face problems. You know you possess the skills to solve them. You will reduce your stress by having confidence in your problem solving ability! You will become a more valuable food service assistant.

## ACTION PLAN FORM

### OVERALL SOLUTION

ACTION	PERSON RESPONSIBLE	COMPLETION DEADLINE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

## CONTINGENCY PLANNING WORKSHEET

<b>What could go wrong?</b>	<b>How could you prevent it from happening?</b>	<b>How can you change your plan if it happens?</b>

