

**EVALUATING  
ACADEMIC READINESS  
FOR APPRENTICESHIP TRAINING**  
Revised for  
**ACCESS TO APPRENTICESHIP**

**COMMUNICATIONS SKILLS  
UNDERSTANDING SEQUENCE**

**AN ACADEMIC SKILLS MANUAL  
for**

**The Food Preparation Trades**

This trade group includes the following trades:

Baker, Cook and Retail Meat Cutter

*Workplace Support Services Branch  
Ontario Ministry of Education and Training*

*Revised 2011*

In preparing these Academic Skills Manuals, we have used passages, diagrams and questions similar to those an apprentice might find in a text, guide or trade manual.

**This trade related material is not intended to instruct you in your trade. It is used only to demonstrate how understanding an academic skill will help you find and use the information you need.**

---

---

## **COMMUNICATIONS SKILLS**

### **UNDERSTANDING SEQUENCE**

---

*An academic skill required for the study of the  
Food Preparation Trades*

#### **INTRODUCTION**

In the food preparation trades, it's essential to follow directions in the right order to successfully complete a job. The skills that enable you to read technical material and then follow the steps of a procedure are essential. Most trade material is written in a step-by-step order called *sequence* so that you acquire the information in a logical manner. This is especially important when you are learning the steps in a procedure. As you develop the skill of accurately reading, and then accurately following directions, it has payoffs. You make the right choices; you make fewer errors; and you can spot where something went wrong.

*Sequence* refers to an ordered arrangement in which one step is followed by another. A sequence can be the step-by-step description of how to complete an elaborate dessert; it can be guidelines for sanitizing equipment; or it can be instructions in operating manuals for disassembling and cleaning cutting and grinding equipment. Each step is part of the whole thing. The steps work together, but you need to understand and follow each step on its own.

In this skill sheet, we will look at trade material to:

- ◆ Examine the order of information,
- ◆ Identify and follow steps in a sequence, and,
- ◆ Identify and follow sequence in diagrams.

#### **PART I**

##### **EXAMINE THE ORDER**

When we are learning something new, we usually ask many questions.

**Example:** Someone in your trade is talking about *roux*. If you've never heard the term, you'll probably ask: What's that? What do I need to know about it?

Whatever the reasons for our questions, they tend to follow a logical sequence or order. We usually start with basic questions and move to questions that demand more detailed or more difficult information. The questions should cover most of what we want: What is it? How is it made? How does it work? How do I do this?

##### **Technical material**

Technical reading material is set up in a logical order. In many cases, the reason why you need the information will come first. Technical writing usually starts by answering the question,

---

“What is it used for?” The answer tells you the purpose of something as it relates to your trade. For this reason, it is often the first information you will see.

Look for information to appear in this or a similar sequence:

1. Purpose tells the function or use of something.
2. Definition explains what the procedure is so that it makes sense to follow it.
3. Procedure gives the order in which to do something or the order of how something works.

The correct procedure or information about “how to do something” often comes last. You get description, explanation, and underlying principles so the procedure will make sense as you follow it.

### **Read through it first**

When you read instructions about how to do a job, read the information through to the *end* before starting the procedure. When you are aware of the order of each step, you can understand how each step fits into the whole procedure. Reading through all of the instructions first should become a part of assessing and preparing for any task.

Some passages don't set up the steps so that you can clearly see the sequence. In this case, look for clues. Notice if there are letters and indicators such as commas to separate the points. Look for words such as *first, then, next*.

**Passage 1**, *Thickeners*, illustrates how this process works. Notice the way sequence is used and how the information helps you answer the three questions listed above (why, what and how). In a sense, there are two different kinds of sequence illustrated in this passage:

- the sequence in which the information is presented and
- the sequence of steps used in a specific procedure.

### **Passage 1**

#### **Thickeners**

In liquid preparations such as for soups, sauces and braising liquids, you may need to adjust the consistency of the liquid. The adjustment will give you the texture that you desire. There are several techniques and preparations for thickeners.

#### **Roux**

Roux – white, pale (blond), or brown – is a common thickener for savoury sauces. It is prepared by cooking together a fat and flour. This mixture can be prepared in large quantities ahead of time. The roux - white, pale or brown - are made of the same ingredients, but they change as heat is applied.

Butter is the most common fat used; chicken fat, vegetable oils or fats rendered from roasts are also used. The choice of fat will affect the flavour of the finished dish in a subtle way.

#### **Making a Roux**

To make a basic roux, use equal weights of fat and flour by weight. Melt the fat over medium heat; slowly add the flour, whisking constantly. Within 2 to 3 minutes the roux will have a consistency of a cake frosting. A white roux is done when the flour loses its "raw" smell and begins to develop a toasty aroma. Darker roux are cooked, stirring constantly, until the desired color. If you're not adding liquid, immediately remove the pan from the heat and transfer the roux to another container to cool.

---

### **Why do I need this information?**

Paragraph one explains the purpose of thickeners for – to adjust the consistency of soups, sauces and braising liquids. Reread the first paragraph. You learn that thickeners will give liquids the texture that you want and that there are several types of thickeners.

This information is placed in the introduction to let you know why you should pay attention to the details that follow. It answers the question “Why should I learn this?” and it gives you a purpose for your reading.

### **What is it?**

Paragraph two of the passage describes one type of thickener, a roux and prepares you to follow the “how to” directions. Reread it to see how this works. You find out several important things about roux:

- its colour (white, blond, brown)
- its general purpose (thickener)
- its specific purpose (savory sauces)
- its ingredients (fat and flour)

Paragraph three describes things will make different roux taste different – the fats used to make it.

You now know where this passage is going. It is leading in a logical way to answer, “How do I do it?” This is the next step in understanding.

### **How do I do it?**

Once you know what something is, you then get to the “hands on” stage. Look at paragraph four to see how it guides you in precise steps. It tells you to:

1. Use equal weights of fat and flour by weight.
2. Melt the fat over medium heat.
3. Slowly add the flour,
4. Whisk or stir constantly.
5. A white roux is done when the flour loses its "raw" smell and begins to develop a toasty aroma.
6. Darker roux are cooked, until it reaches the desired colour.
7. If you're not adding liquid, cool and store.

### **Sequence of learning**

As you read **Passage 1**, you should start to see the general order. It is organized so the learning moves from general information to more specific details. You also see how the practical steps are laid out in a sequence so that the first step comes before the second and so on. As you become aware of the order, you see how all the steps fit together. This leads to an understanding of the whole process.

As you read, think of other questions that may arise. Look for the answers as you go. Observe how information is organized to answer your questions. If it is organized in sequence, you will find the material easier to understand and act on. Use this system to your advantage. Give

---

yourself enough time to carefully read technical material, noticing how it moves from step to step.

The first information you learn in your trade will become a base that you can later build on. *Because learning expands on what you have previously learned, you need to make sure you understand what you have read before you go on to new material.* You also need to recognize when information is related to something you learned earlier. The best way to understand how individual parts are related to the whole is to first learn the material one step at a time and then think about how all the parts fit together in the correct order.

## **PART II**

### **IDENTIFYING AND FOLLOWING STEPS IN A SEQUENCE**

In this section, we will look at identifying and following the steps in a process or procedure. An awareness of the correct sequence of steps used in completing a project is necessary to achieve a satisfactory result.

#### **Getting it right**

At first, you may not see the reason for the sequence in a set of directions. Always follow the directions exactly as stated. The steps serve a purpose even if you don't know what it is. When you become expert with a process, you can decide if it is appropriate to make adjustments. Even after you become skilled, new products will come on the market with new procedures. You'll need to keep reading and learning to keep current.

**Example:** Imagine using any order that strikes your fancy to complete a job. What results would you expect if someone making a dark roux added liquid to the flour and fat as soon as they were combined?

#### **Did I miss something?**

**Passage 2**, *Storage of Fish*, is an example of what we mean by building on what has already been taught. An earlier chapter or section has provided answers to these questions:

- What is it?
- Why do I do this?

The passage assumes you have read the previous material. For this reason, you may not understand all the information perfectly. You will be able to recognize the sequence of steps used for starting a tap but some details about the technique and materials may not be clear.

Read **Passage 2** for a straightforward sample of sequence. You can clearly identify and follow the sequence, acting on each step. **Answer the questions that follow it. Answers are at the end of this skills manual.**

---

## Passage 2 Storage of Fish

Proper storage of fish is critical. The following steps should be taken.

1. Check the fish carefully for freshness and quality. The fish can be rinsed at this point. Delay scaling and fabricating until closer to serving.
2. Place fish on a bed of shaved or flaked ice in a container with perforations on the bottom. We recommend stainless steel or plastic. Place the fish belly down; you may fill the belly cavity with shaved ice.
3. Cover the fish with additional ice.
4. Set the perforated container inside a second container. As the ice melts, make sure that the water will drain away from the fish.
5. Thoroughly drain and re-ice fish daily. Do not leave fish sitting in a pool of water.

### Questions

1. When do you rinse fish?
2. When would you scale fish?
3. Which is the correct sequence of activities? **A** or **B** or **C**?
  - A. Place fish on bed of shaved ice; place belly down; fill cavity with ice; cover with ice.
  - B. Fill cavity with ice; place on bed of shaved ice; place belly down; cover with ice.
  - C. Either **A** or **B**?
4. How often would you re-ice?

Let's look at the sequence of information presented in **Passage 2**, *Storage of Fish*

Paragraph 1 is short, but it gives you a reason (purpose) by stating, "Proper *storage of fish is critical*". It immediately the *what is it* question with a direction to follow the steps. The "how to" steps are numbered in this passage to tell you to follow the directions in this order:

1. Check and rinse fish,
2. Do not scale or cut into portions.
3. Place fish belly down on shaved or crushed ice in a container that can drain. Cover with more ice.
4. Put the container into another container that will hold the ice melt.
5. Drain and re-ice daily.

If you read and follow these steps, you should be able to correctly and safely store fish.

---

## Numbered Steps

It is usually easier to follow a sequence when the steps are numbered. Numbering steps also helps you identify areas that seemed clear when you read the sequence, but aren't so clear when you come to do the job. You can figure out where you are getting lost.

**Example:** The first step in Passage 2, *Storing Fish*, tells you to check for the fish freshness, however there is no instruction on what to look for and the passage does say that proper storage is critical. *If you do not know how to perform this step, you have to search for and find the "how to" information for this task.*

If the sequence isn't numbered, you can break the information into steps to see the order and note any steps that you don't understand. You can make directions or readings easier to follow, if you separate each point with a number or with a marker such as any of these below. If so, you can easily convert the information in long procedures to points. This will help you "see" the steps.

**Example:** To peel garlic:

- loosen skin
- crush garlic clove between flat side of knife
- peel off skin
- remove root end
- etc.

You may not need to store fish or crush garlic at this stage. You do need to know how to accurately read and follow a sequence of information and identify when you need more, detailed instruction. With this knowledge, you are on the way to learning how to perform a job accurately and how to identify when you need to ask for help.

## Questions and relationships

Information is organized in a specific order for a reason. As you read, think about questions related to sequence. Stating the questions and then looking for answers can be a useful way to test your understanding when you are studying for homework or doing a job. The questions below relate to **Passages 1, and 2**. They will also apply when you study other technical material.

1. Which activity or step is first, second, third?
2. Which step starts the process; which concludes the process?
3. What happens **before** or **after** a certain step?
4. What happens if I skip a step?
5. Where do I turn if I can't ...?

Look at and understand the order in which things happen in a project, or task. If you can see the relationship of one step to another you will understand the whole picture and you can apply the information appropriately.

---

### Remember, read it through first

When you read instructions completely *before* starting a job, you will be prepared in several ways. You have a clear idea of the steps involved. You can plan for which ones will be easy and which will need more help. You can plan for the amount of time the job will take.

**Example:** Passage 1 tells you to: stir and cook the roux until it is the consistency of cake frosting and is the colour you want. This task cannot be hurried, you will have to give yourself enough time to do the job properly.

Passages 1, and 2 each give you a sequence of activities. Each passage prepares you to work in sequence when you are on the job site.

1. It first prepares you for the task.
2. Next it tells you what you will do:
  - how to prepare,
  - the sequence of tasks, and
  - what to watch for to avoid problems.

By reading the entire set of instructions before you start, you can assess the job and prepare for each step.

### Before we go – a word about numbering

You will see many directions with numbered steps. Usually numbering indicates the steps in a sequence and their order. Number one (1.) indicates the first step; number two (2.) indicates the second step and so on. In some cases, numbering does not indicate a sequence.

#### Example:

1. Maintain fire extinguishers to safety standards and place where they will be used.
2. Follow Construction Safety Association of Ontario guidelines.
3. Follow safety guides when working with flammable materials.

As you can see, these numbers do not indicate order. Here they act as a checklist. The tasks on the checklist must all be done, but they are not sequential.

### Make it easy for yourself

You know how to number steps in a procedure to make the correct sequence clear. You can also divide information into individual points. This will help you see where the pieces of information belong.

**Example:** The term *mis en place* is almost a law in the kitchen. It literally means *putting in place*. If you are preparing to make something, you will prepare thoroughly before you start putting ingredients together. You will:

- First, read the recipe carefully.
- Then make sure all cookware and equipment are prepared.

---

Make sure bowls and tools are at hand and in order.  
Make sure all ingredients are at the correct temperature, measured and set in place on the

You can also mentally separate information into a sequence or point form. You will find this useful when you are figuring out how to organize the steps of a project. By taking the time to put things in order before you start working, you have a clear picture of where you are going and how to get there.

### **A different order**

Earlier we suggested that you start at the beginning and move forward in sequence. However, once you've read through carefully to understand from start to finish, you may begin to look at the information in a different order. When you understand how the steps are connected, you will move backwards or forwards in a diagram or passage without getting confused. This is particularly true when you are finding causes of problems or solutions to problems.

**Example:** You want to know, “Why did this fish spoil?” To answer the question, you need to find out what caused the problem. You may have to start in the middle of the passage and work backwards to find the cause. You may search through another manual to find answers. You are still aware of sequence of steps but you are jumping around to find precise information about a missed or poorly performed step.

### **And so it goes**

**Example:** You are required to make a meringue. In order to make it, you first have to take the eggs out of the refrigerator and bring them to room temperature. You have to separate the eggs without getting yolks into the whites. You need to be sure all your utensils and bowls are clean and free of any grease before you start.

And so it goes. To do a job properly and safely, you need to perform each step in the correct order. You must do this all in order to prepare to do the task you have been given.

What does this have to do with sequence? Even before you start a task, you need to pay attention to the sequences of preparing for the job. When you are doing a job, each step depends on the step before it. If the first (second, third or any other) step is left out, performed too quickly or inaccurately, you will not get the desired results. The finished product depends on the successful outcome of each step.

### **Application: Taking over in the middle**

Consider a situation where you take over from your instructor or co-worker to complete a job.

**Example:** You are asked to finish a dessert that someone else started. You have to find out what was already done and what you are expected to do to finish the job.

You go to the recipe. Read it carefully to check that you understand what you have to do. Find out where your co-worker left off, and pick it up from there. When you understand the sequence of steps that must be carried out, you can begin at any point

---

in a project. You know where you must start, where you are going, and what you need to do. Looking over the whole process and reading through the steps gives you the ability to accomplish your task.

When you have to step into the middle of project, ask yourself the following questions:

- What am I expected to do?
- How do I do this?
- What's already done?
- Where do I start?

### **Evaluating to make the right choice**

To follow a sequence, you must read and follow the directions as they are written. But sometimes, you also need to evaluate the steps and make decisions as you proceed. Look for words that suggest a choice: **if, when, or**.

**Example:** Here is the sequence for preparing *roux*.

The method for preparing *roux* is as follows:

1. Melt fat in a pan over low to moderate heat.
2. Add flour and stir until smooth.
3. If necessary, add more flour for the desired consistency.
4. Cook, stirring constantly, to the desired colour. (We have omitted a description of the desired colours.)
5. If you will not use the roux immediately, cool and store it, tightly wrapped in the refrigerator.

As you follow this sequence you will have to continually make judgments about the roux and possibly interrupt the sequence you are following:

1. You need to decide if the roux is thick enough. If it is not, you need to go back to step 2 before you finish the roux.
2. You need to decide if the colour is what you want before you go to the next step. If it is not, you will have to cook it longer.

The results of the finished product depend on the results of each step.

### **Sequence in Trade Mathematics**

#### ***Bedmas***

You have to follow the required steps in the proper order to complete any project you are assigned. When you are doing math problems, you also have to work in the correct order. If you accurately complete each step in a problem but if the order is wrong, the answer will be wrong. The proper order of basic math operations is called ***bedmas***.

Bedmas (brackets, exponents, division, multiplication, addition, subtraction) prescribes the order in which you have to do these operations to get the right answer, whether it is determining how to adapt the size of a recipe or figuring out mathematically how to cost a catering job.

---

## **PART III**

### **SEQUENCE IN DIAGRAMS**

In technical manuals and texts, many passages are accompanied by a diagram. A diagram can illustrate the sequence of steps in a procedure. It can show something you can't see, such as how a terrine is layered. It can show the point when something happens

#### **Passages with diagrams**

It is important to understand diagrams that accompany writing. The passage and the diagram are designed to be used together but you may examine them separately at first to find out what each has to teach you.

When you read diagrams, your eyes will move between the writing and the diagram – like watching a hockey puck on the rink. Focus on one section until you understand it, and then move to another, repeating this process until you understand the whole.

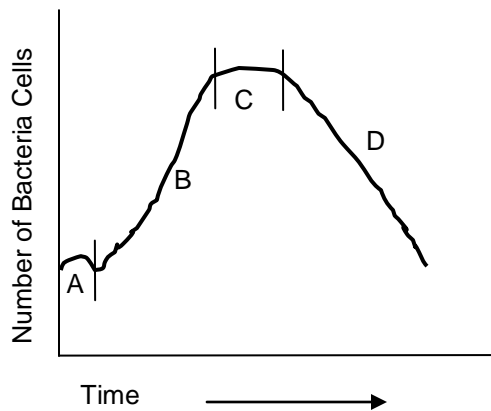
Passage 4 below is about how and why refrigeration assists in keeping foods safely stored. The passage refers to a diagram that relates to the information about safe storage. It shows the stages of bacterial growth. As you read each step, pick out the parts on the diagram that the words illustrate. That is, find A on the diagram and read the words which describe A. Make sure you see and understand the information.

***Note:** This passage is only one part of the directions for safe storage. Use manuals and guides from your course for complete details.*

#### **Passage 4**

##### **Storing Foods**

Refrigeration: Equip your refrigeration and freezing units with accurate thermometers. The temperatures must remain within the safe range for food storage. Make sure the refrigeration units are well maintained. In most cases, chilling foods slows down the production of pathogens (See Figure 1.2). **Note:** chilling does not usually kill pathogens.



**FIGURE 1.2: Stages of Bacterial Growth During Chilled Storage**

**A** is the lag phase of bacterial growth. In this phase, the bacteria adjust to the environment. **B** is the accelerated growth phase. The organisms reproduce very rapidly through this phase as they have adjusted to the environment. **C** is the stationary phase. Look at the diagram to observe that there is no change in the number of bacteria during phase **C**. This means that the rate of growth is equal to the rate of death. **D** illustrates the decline phase. The necessities of life for the bacteria are depleted and, therefore, the rate of death is greater than the rate of growth.

At the end of every shift, organize the refrigerator and freezer. Food needs to be cooled and stored in clean containers. These containers need to be wrapped and labelled clearly with contents and date.

Raw products should be stored below and away from cooked foods. This will prevent drips from the raw product leaking onto other foods and contaminating them.

Do not overcrowd the box; air that circulates in the box is essential for cooling foods. For the same reason, be sure that the fan is not blocked; be sure that trays are not stacked directly on top of food. The front of the unit will be the warmest area while the back will be the coldest area.

Be guided by the principle, in storage of food, of First In, First Out (**FIFO**). Organize food at the end of each shift by rotating the foods to follow the FIFO principle.

This passage gives you a range of information about refrigeration. It tells you the following:

1. to maintain the storage units;
2. to store, wrap, label and date foods;
3. to separate raw products;
4. to leave enough space for air circulation; and
5. to use the FIFO principle.

The diagram and explanation provide the scientific reasons for safe storage through refrigeration.

Reread the information under the graph and examine the graph so that each step in the sequence of bacterial growth becomes clear.

1. Note how short the lag time is at section A.
2. You can see how quickly bacteria grow in section B.
3. After that accelerated growth period there is a short time, at section C, when there is no increase or decrease in the amount of bacteria.

- 
4. That stationary phase is followed by a sudden drop in the amount of bacteria present in the stored food at section D.

### **Use sequence to simplify**

You could set up the information in the passage which accompanies the graph differently to “see” it more easily.

**Example:** Try this with Paragraph 2. Rewrite it in steps to make it easier to follow and to remember those steps. You might write something like this:

At the end of each shift, organize the refrigerator and freezer.

1. Cool foods and store in clean containers.
2. Label containers clearly with contents and date.
3. Use First In, First Out (FIFO) principle to rotate foods.

Note that step 3 above is taken from the directions in paragraph 5. Go back to the passage to understand why we would add information from paragraph 5 to the sequence of steps in paragraph 2.

Can you see that the principle of FIFO would apply in this set of steps? For this reason, it can be a step in the sequence.

As you use graphics in combination with text, follow each piece of information. Remind yourself that you are following steps to develop understanding.

Focus on finding and following steps in your technical reading material. The steps in the directions will guide you in the correct procedures.

If you have to answer questions, go back through the passage carefully to look for the answers. You may have to trace the steps with your finger while your eyes move back and forth between question and passage. You might have to read the section several times to make sure you have a perfect match between question and passage. In some cases, there may be steps that are almost the same. Nevertheless, you can see that almost the same won't get you correct (or safe) results.

### **CONCLUSION**

Sequence is an essential system for organizing information and procedures. When information is presented in a logical sequence, it is easier to understand. Make sure you read all the steps in a set of instructions before you act on them. You can then follow them in the correct sequence, completing a job correctly and safely.

Keep in mind:

- ◆ Information builds on what you have previously learned. Just as you would build a strong house foundation, *make sure your trade foundation is strong.*

- ◆ If a passage is building on past learning and you don't understand a definition, term or principle, you might have missed something that was already taught. *Find where this information is. Then go back and reread it.*
- ◆ You might read steps which clearly outline correct procedure but the precise measurements, techniques or length of time are not laid out. *Know when and where to find this information.*

When you understand the steps or pieces, you can understand the relationship to other steps or pieces; this leads to an understanding of the whole process.

### **Summary**

1. **Ask questions** that guide you through step-by-step instructions or descriptions.
2. **Technical material is organized to help you understand it.** It will walk you through a process or principle systematically. Give yourself time, read carefully.
3. **Information is built on what you learn.** Follow procedures and understand them to build a strong foundation.
4. **Understand how steps relate to each other:** what is first, second, third; what comes before or after; what is cause and what result is.
5. **Match the steps in a passage to a diagram and vice versa.** Then match everything to the job you are doing.
6. **A sequence of information can explain a principle** and can show you how it applies to your trade.
7. **Evaluate steps when necessary to make the right choice.** The result of the finished product depends on carrying out each step at the right time, and in the right sequence.
8. **Follow steps accurately** to ensure error-free and safe work habits.

---

## Answer Page

### Passage 2, Storage of Fish

#### 1. When do you rinse fish?

There is not a specific number to this step; it is a **before/after** question. You rinse fish **before** placing on shaved ice, and **after** checking for freshness and quality.

#### 2. When would you scale fish?

This is also a **before/after** question. The answer is **before** serving, but we don't know exactly how **close to** serving. You need more details to answer this precisely.

#### 3. Which is the correct sequence of steps?

This is not a trick question, but again you have to think about the information you have to work with. The sequence of *the sentences* is **A**, and you could follow this order. Logically though, you could fill the cavity with ice **before** placing on the bed of ice which also makes **B** a correct choice.

#### 4. How often would you re-ice?

The passage (step 5) states, "Thoroughly drain and re-ice daily." The exact time is not stated, but step 5 also states, "Do not leave fish in a pool of water." The answer then is *daily, or before ice has melted, or when necessary to avoid fish being left in pool of water*. The sequence may change according to the demands for *safe storage of fish*.