

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

**COMMUNICATIONS SKILLS
RESTATEMENT AND PARAPHRASING**

**AN ACADEMIC SKILLS MANUAL
for
The Horticulture Trades**

This trade group includes the following trades:

Arborist and
Horticulturist

*Workplace Support Services Branch
Ontario Ministry of Training, Colleges and Universities*

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.

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

COMMUNICATIONS SKILL

RESTATEMENT AND PARAPHRASING

*An academic skill required for the study of the
Horticulture Trades*

INTRODUCTION

Restatement or paraphrasing, means saying something in your own words. We do this to be sure that we get the correct meaning from information. This skill allows you to clearly communicate ideas about drawings, regulations and standards. If you can restate information clearly, you can communicate ideas about projects, materials and procedures to co-workers and customers.

Technical writing activities related to *paraphrasing or restatement* include note taking, writing brief reports, submitting job proposals and estimates, reporting on potential worksite hazards, and completing work-related documents.

In this skills manual, we will look at some examples of restatement. We will do this to:

- ◆ Understand and explain technical information,
- ◆ Restate information in graphic and written material, and,
- ◆ Recognize signals that indicate restatement.

PART I

UNDERSTAND AND EXPLAIN TECHNICAL INFORMATION

Try to explain an idea – *in your own words* and *out loud*. You will discover what you know and what you don't know. When you use your own words, you find out where you can repeat ideas clearly and where you stumble because you can't find the right words.

Let me get this right

When you paraphrase an idea or written instruction, you are forced to be clear about what you have read or heard. If you have difficulty expressing an idea out loud, you know something is unclear. Stop. Reread the sections that stumped you, and then try again. This can be a slow process, but if you can restate the idea, you probably understand it.

We will use information from your trade to show you what we mean. Read **Passage 1** below to understand the information. Proceed methodically and read with attention. Try the following suggestions:

- read slowly,
- read out loud,
- ask questions,
- look up unfamiliar words or terms, and,
- take notes, *using your own words*.

When you have finished, test your understanding. Could you explain this to someone who knows nothing about the idea? Would they understand it after you gave your explanation?

Read Passage 1 and answer the questions. Answers are at the end of the skills manual.

Passage 1
Water Storage

In order to obtain water, perennial species in arid regions either develop a long tap root to reach underground sources or spread horizontal mats of fibrous roots just below the soil surface (as with cacti). Although shallow roots become parched and lifeless in extreme heat, they quickly return to growth and full metabolic activity within hours after rain has soaked the soil.

Having taken full advantage of infrequent and unpredictable water supplies, many desert plants survive periods of drought by using water stored in leaves or stems. The succulent leaves and stems of certain genera (e.g. Mesembryanthemum, Sedum, Crassula and Echeveria) contain enlarged water-storage cells, capable of supplying the plants' basic needs for many months. Stem succulents like cacti and cactus-like Euphorbias, sometimes store sufficient moisture to last for years.

Up to 95% of the total volume of succulent plants is devoted to water storage. Most small succulents die by the time half of the stored water is used. However, some species of cactus have been found to survive a 60-70% moisture loss without damage or significant impairment of physiological functions.

Questions:

1. What does "without significant impairment of physiological function" mean?
2. Once they consume 50% of their water, the majority of small succulents will perish.

T F

3. After a rainfall, roots that have been dehydrated will immediately be restored to their original condition.

T F

4. Which of the following is an accurate statement?
 - a) Plants with fibrous roots are less likely to be affected by excessive heat.
 - b) Sedum contain enlarged water storage cells that will supply them with water for years.
 - c) Certain cacti can withstand a moisture loss of over half their total water storage.

Paraphrasing step-by-step

As you read and figure out what each step of **Passage 1** means, mentally check it off; or use a pencil to do so. If you don't understand any part of the directions or don't see how it fits with the others, reread, and try again. As you recognize how each piece fits into the job, you begin to develop a sense of the whole picture.

Paragraph one

In Passage 1, you may have had a few questions about sentence two in paragraph one:

- What is *full metabolic activity*? If you aren't sure or have forgotten, look it up.
- What does *parched* mean? The dictionary gives *dried up or extremely thirsty* as the definition.

These definitions give you the meanings *tendency* and *parallel*, but more importantly, when you put these meanings for the terms back into the sentences, you can understand more clearly what is being said about the cut.

Example: You can paraphrase a confusing sentence:

Although shallow roots become parched and lifeless in extreme heat, they quickly return to growth and full metabolic activity within hours after rain has soaked the soil.

It means

Shallow roots which dry up in excessive heat return to growth and full energy production a few hours after a good rainfall...

Paragraph two

Experiment with different words to restate what you are reading. You could break paragraph two into points with slightly different wording. You might come up with something like this:

Desert plants can survive a long drought because of the following:

- they store water in leaves and stems; and
- they contain enlarged water storage cells.

How long can they supply themselves with stored water?

- some types of plants can store it for many months, and
- cacti for years.

Note: You will learn the definitions of trade terms, especially botanical terms and names, as you move through your training. Knowing those terms will help you restate ideas clearly.

Paragraph three

Paraphrase paragraph three, one step at a time. Make sure you understand and can explain exactly what this information means, **in your own words**. Think of how you would explain paragraph three to a new employee. You would have to know and describe:

- How much of a plant is used for water storage?
- What is the life span of small succulents?
- How much water do they use?
- Are there any exceptions?
- How much water can be used up before they become damaged or die?

I still don't understand

When you read something and say, "I don't get it", you need to solve a problem. What *exactly* don't you get? It is critical to move beyond feeling that you do not understand the material. Usually there's something that you do understand so, which parts do you get?

Separate what you know from what you don't know, then find explanations for the confusing parts. It's important to *ask yourself questions and find answers* to all aspects of the information. When you change written ideas into your own words, it will help you to develop a mental picture of the ideas and an understanding of the meaning.

When you can restate what you've read – in your own words – and can write it out, you know that you have understood the material. Using your own words will help you remember information. If you can explain it clearly to someone else, you have got it.

Examples of Restatement

You will find two samples of restatement below, in **Passage 2** and **Passage 3**. The two passages were written by different people to explain a concept. Read them to compare the details.

First, read each passage following these directions:

- ◆ read slowly,
- ◆ ask yourself questions,
- ◆ look up unfamiliar words or terms, and,
- ◆ take notes, or explain to yourself what the passage says *using your own words*.

Second, **compare** the information in the two passages. Look for similarities and differences.

Passage 2

Every material is composed of minute particles called *molecules*. In any magnetic material, each molecule is a magnet with a north and south pole.

Passage 3

The molecular theory of magnetism states basically that all substances are made up of an infinite number of molecular magnets.

When you read **Passage 3** to compare it with **Passage 2**, did you see that each is about the theory of magnetism? Each uses different expression, different types of sentences, and different vocabulary, but *the information is essentially the same*. Below you can see some examples from the passages where the same ideas are expressed differently:

| | | |
|--|---|-------------------|
| Passage 2 | | Passage 3 |
| every material | = | all substances |
| is composed of | = | are made up of |
| each molecule is a magnet with a north and south pole | = | molecular magnets |

You may find that one passage or one group of words is clearer or easier than the other passage. The important point is that they each express the same theory.

Didn't I just read this?

If information sometimes seems familiar to you, it may be because you've read it before. But, what you've read before didn't use the exact wording of what you're reading now. Continue to read and compare **Passages 2 and 3** for examples of restatement.

Passage 2

In non-magnetized material, molecules lie in a haphazard manner. When a material has been magnetized, the molecules lie in an orderly fashion.

Passage 3

Molecular magnets can be arranged in two ways: *organized or disorganized*. If the molecular magnets are *disorganized*, the material is considered to be unmagnetized. When the molecular magnets are *organized*, the material is considered to be magnetized.

How do they compare? Look at examples of vocabulary from these passages which restate the same information:

| | | |
|------------------|---|------------------|
| Passage 2 | | Passage 3 |
| nonmagnetized | = | unmagnetized |
| haphazard manner | = | disorganized |
| orderly fashion | = | organized |

These two passages are restatements of each other. Each passage gives you accurate information but in a different way. In your reading, you might prefer one textbook or manual to another because the way it expresses ideas is easier for you to understand.

PART II **GRAPHICS AND TEXT**

In Part II, we will look at how *graphics* and *text* are used together as examples of restatement.

Graphics

When we use the term **graphics**, we mean the types of illustrations that you find in manuals and textbooks: diagrams, graphs, photographs and charts. They present a restatement in a visual way.

Using graphics

Graphics relay information you need for your trade. To use graphics effectively, you need to convert the information into actions – either the mental action of understanding information or the physical action of following directions. To do either, restate the information so that you understand it. If you find terms or symbols that are not clear, stop and find out what they mean.

Text

When we use the term **text**, we mean everything that is in print form. This includes writing that goes with a diagram, graph, photograph or chart. The text uses words to describe or explain something while a graphic uses a picture.

What am I looking at?

If you know the purpose of a diagram, it may change the way you look at it. You may study each part of the diagram and mentally convert the items pictured in the diagram to descriptions in the text. Going back and forth between the diagram and the text increases your ability to picture the whole process or concept.

You should move between the text and graphic:

- to understand each on its own,
- to understand them together,
- to remember the information, and/or
- to get answers for things you are not sure about.

We will use the text and figure below (**Figure 1**) to look at restatement.

Passage 4 Levers

A simple machine magnifies the effects of an applied force. Using one makes work easier and more efficient. When the machine does this, we say that a *mechanical advantage* (MA) has been gained. And, when the work is done with little loss of energy, we say that the machine's *efficiency* is high.

Levers are the simplest of the basic machines. Figure 1 shows the use of a lever to move a large object.

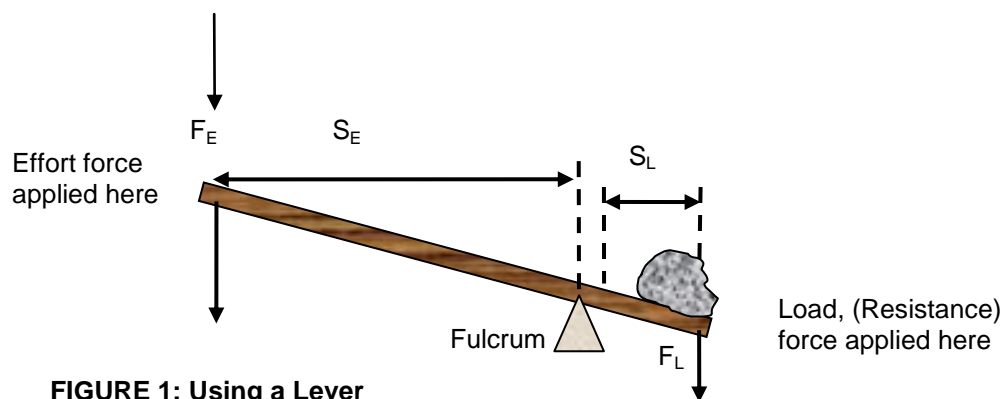


FIGURE 1: Using a Lever

The point at which the lever (bar or rod) pivots is called the *fulcrum* of the lever. The length of the effort arm and the resistance arm of the lever are measured from the *fulcrum* (pivot point). The effort arm is measured from the point where the *effort* (applied force) is applied to the fulcrum; the resistance arm is measured from the *resistance* (or load) to the fulcrum.

The calculations for all levers are derived from mathematical ratios as follows:

| | |
|-----------------------------------|--------------------------------------|
| $M_A = F_L \div F_E$ | Where: |
| $S_E \div S_L = F_L \div F_E$ | M_A = mechanical advantage |
| $F_E \times S_E = F_L \times S_L$ | S_E = length of the effort arm |
| | S_L = length of the resistance arm |
| | F_L = resistance force |
| | F_E = effort force |

The text provides definitions, first of *simple machines* and then of *levers*. It then focuses on the lever. It defines what a lever is, the names of its parts and the formula for making calculations of a lever's mechanical advantage. The text also tells us to look at the diagram.

The diagram is a restatement of the description in the text below it. It shows us the fulcrum point, the resistance arm and the effort arm. It shows us applied force and resistant force mean. We understand how a lever works. Text and diagram each give us essential information, though in different format.

The text and diagram give you important information in different formats. **Together**, they provide a more complete picture than each would alone.

What am I looking at?

If you know the purpose of a diagram, it may change the way you look at it. You may glance over a diagram to get a general idea of what it illustrates.

Example: Figure 1 shows us what each part of a lever is, and how it works.

You can study each part of the diagram and mentally convert the items pictured in the diagram to the stages described in the text. Going back and forth between the diagram and the text increases your ability to picture the whole process or concept. You move between the text and graphic:

- to understand each on its own,
- to understand them together,
- to remember the information, and/or
- to get answers to questions that you may have.

Examine everything

1. The text will direct you to a graphic: the number of the graphic may be in parentheses like this (*Figure 2-10*). When the text directs you to look at the graphic, it may also tell you what it will show you.

Example: *Figure 2 shows the use of a lever to move a large object.*

2. When you come to a diagram, stop. Read the title or heading and the description at the bottom. *The title and description tell you what the diagram contains.* Some diagrams contain directions or details not found in the text.
3. Next, see how it restates the text. Then look for information that is not in the text.

Passage 5, below, is about *effective tension in belt drives*. Read the text and study the diagram to understand how they work together to explain the concept. Think of each as a restatement of the other. Notice how they complement each other. Think of how each could help you explain or describe something to someone else – your boss or a client.

Passage 5 Effective tension

Effective tension is the tension needed on the belt to transmit power without slipping. When the drive is running, the pull on the belt increases the tension and stretch on the tight side as it overcomes the resistance of the load. See Figure 2. The slack side has no tension increase because it simply returns the belt to the driven pulley.

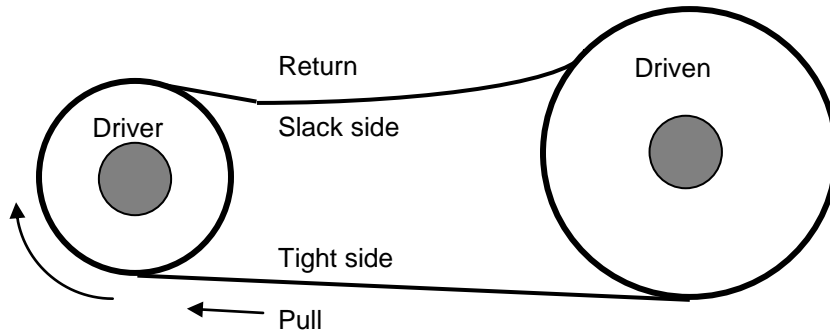


FIGURE 2: Belt drive

Drive assembly in operation showing tight and slack sides of the belt.

What does it say?

The text explains the concept in a clear, detailed way and prepares you to apply it on the job.

The graphic relays the same information in a picture form. It clearly labels the slack and tight sides of the pulley belt. The figure shows you the direction of movement (with the arrows) so you understand *which side is doing the pulling*. The figure also shows you the pull transmitted **from** the driver **to** the driven. The diagram explains the words.

You can see more by using the graphic with the text. This can help you put the concepts of *elastic deformation* and *work hardening* into your own words. You can also draw a simple diagram. You can explain to a customer, “*This is what effective tension is, and I’ll show you how it works.*”

Graphics restate the text

We’ve looked at the text and the diagram to see what each adds to the whole picture, and how each restates the other. Graphics and text combine to complete the information required.

Graphics can peel back the layers so you can see it all. They are related directly to the writing.

- They are labelled clearly and usually placed beside the text.
 - The text and **Figures 1 and 2** are typical examples of this.
- It is important that you understand what you read and see as you proceed through the trade material.
 - Be sure to match the text with the graphic and read the information that goes with it.

The text tells you when to go to the diagram and what to look for. Find the information and understand what it is saying. *The diagram and text work with each other to make information clearer or to explain a procedure or a principle.*

Remember to test your understanding by restating the information to someone who hasn't read the text or seen the graphics. You may need to try an explanation more than once to get the right words in the right order. If you understand what you have read and what you have seen, though, you'll get it right.

Tables

You will use tables for a variety of purposes.

Example:

TABLE 1: DECIMAL AND METRIC EQUIVALENTS OF FRACTIONS

| Fractions | Decimal (in.) | Metric (mm) |
|-----------|---------------|-------------|
| 1/64 | .015625 | .397 |
| 1/32 | .03125 | .794 |
| 3/64 | .046875 | 1.191 |
| 1/16 | .0625 | 1.588 |
| etc. | | |

Tables like this one will show you such things as measurements, maximum spans, and depths of holes. Like other examples of restatement, tables convert information so that you get the right understanding and results.

PART III ***SIGNALS OF RESTATEMENT***

In Part III, we will look at examples of words and symbols that act as signals to indicate when a text is using restatement or paraphrasing. Successful readers pay attention to these signals.

Note: The words and symbols in this section do not always signal restatement. Make sure you know what they are signaling.

Signals Indicating Restatements

Technical writing contains new vocabulary and new and complicated concepts. Explanations that restate information are built right into the text, often as examples or definitions.

There are many written clues that signal that a similar word or a definition is going to follow. Here are a few to watch for.

Some word and phrase signals

1. **That is**, is a word combination that can be used in several ways to let you know that something will be rephrased. These include:

- a) a colon followed by *that is*, (... : that is, ...)

These distinctions are used by botanists for taxonomic purposes: that is, for classification.

- b) a pair of commas around *that is* (... , that is, ...).

In a complete flower, that is, a flower having all of the customary parts, the outer whorl is called the calyx which consists of several sepals.

2. **In other words** is a signal that what you have just read will be explained in another way. Compare the two ways of saying the same thing; make sure you understand both.

When sufficient food is available for the embryo, its root pushes into the soil in order to anchor the new plant, take up needed minerals, and absorb water. In other words, the roots act as a straw, sucking up the nutrients and water to distribute throughout the plant.

3. **Or ...** sometimes tells you that there are two ways of saying the same thing. The words on each side of the “or” mean the same thing:

Sex cells or *gametes* are incapable of growing directly into new plants.

Density is the compactness or relative mass of matter in a given volume.

4. **Visualization:** In some cases, a writer asks you to *visualize* or *imagine* something. This kind of restatement asks you to convert words into a picture to understand them.

The section shows a part of the structure as if cut by a vertical plane. Imagine that you are looking at the part after it has been sawed in half, and you are looking at the cut edge.

Some punctuation signals

Dashes – A dash may be used to give another name or short explanation of something. This first example uses several devices as well as the dash: *italics* and “such as.”

A cultivar is an assemblage of cultivated plants distinguished by any characters - such as morphological, physiological, and cytological – so that when reproduced sexually or asexually, they retain their distinguishing features.

A cup cutter - a hollow cylinder with a sharpened lower edge - is used to cut the hole or cup in a green for putting, or to replace small spots of damaged sod.

Parentheses () Words in parentheses restate or define terms and abbreviations specifically related to your trade.

When water moves (diffuses) from the soil, it seeks to dilute the cells' solutions.

The three principal sources of irrigation water are groundwater from wells, stationary surface bodies (lakes, reservoirs and ponds) and flowing surface bodies (rivers, streams).

Water and minerals that are drawn from the soil are added to carbon dioxide (CO₂).

Colon (:) The information that follows the colon (:) often explains a word or term.

Gasoline is a *volatile* liquid: it will evaporate rapidly and pass off in the form of a vapour.

These examples are a sample of the kinds of signals and supports available to you to help you recognize restatement. Restatement helps to clarify information, so watch for the clues.

CONCLUSION

Restatement or paraphrasing is a method used to understand, explain and remember technical information. This is an essential technical reading and writing skill to develop and refine.

It will make information clear to you – and you can make it clear to others. When you identify information presented in a new or different form, you can move between written or graphic information understanding each, on its own, and together.

Summary

1. **Use your own words to restate or paraphrase** technical information. *Talk* yourself through the material.
2. **Find out where** you get stopped. Go back over the difficult steps to master them.
3. **Paraphrase step-by-step** to master material. *Walk* your way through complex information by dividing the steps into smaller bits.
4. **Examine and understand each piece** like pieces in a jigsaw puzzle. As you make sense of each piece, you arrive at the big picture.
5. **Use graphics as restatement** of the text and vice versa. Read the text for understand what is in the graphic: read the graphic for interpretations of the text.
6. **Convert the words and ideas** into the mental action of understanding, or the physical action of performing a task.
7. **Watch for the signals:** use the built-in guides that restate, explain, or define text or graphic material.

Answer Page

PART I Passage 1, Water Storage

1. What does “*without significant impairment of physiological function*” mean?

The word *impairment* might be an example of a word you have to look up. It means *damage* or *injury*. What about *physiological*? Again, look it up. It means *pertaining to physiology* which means that it deals with the normal functioning of living organisms and their parts. Thus, we could restate this as follows: “*without causing serious damage to the normal functioning of the plant.*”

Make sure you include all the ideas from the original to the paraphrased material.

2. Once they consume 50% of their water, the majority of small succulents will perish.
T Compare sentence two in paragraph three with the sentence above: *Most small succulents die by the time half of the stored water is used.*

The order is different, some words are different (e.g. *once = by the time, 50% = half, the majority = most, perish = die*).

3. After a rainfall, roots that have been dehydrated will immediately be restored to their original condition.

F Refer to the last sentence in paragraph one: *Although shallow roots become parched and lifeless in extreme heat, they quickly return to growth and full metabolic activity within hours after rain has soaked the soil.*

As with question 2, the order of the words is different, and some words are different. In this case you need to focus on the word *immediately*. This implies that as soon as the rain falls, the roots will return to normal, however, the passage says that this happens *within hours*. The answer is **false** because a few hours is longer than *immediately*.

4. Which of the following is an accurate statement?

c) Certain cacti can withstand a moisture loss of over half their total water storage.

This involves going to the parts in the passage where each of these answers come from. We can rule out **a)** because *fibrous* roots are actually *shallow roots* and we know that they can “*become parched in extreme heat.*” Answer **b)** is also incorrect because although *Sedum* has *enlarged water-storage cells*, this makes them *capable of supplying the plant’s basic needs for many months* - not years. This leaves us with the correct answer **c)**. The last sentence states the same thing: *some species of cactus have been found to survive a 60-70% moisture loss without damage...*

Again *certain = some species, withstand = survive, over half = 60-70%*.