EVALUATING
ACADEMIC READINESS
FOR APPRENTICESHIP TRAINING
Revised for
ACCESS TO APPRENTICESHIP

COMMUNICATIONS SKILLS
EVALUATION OF INFORMATION

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.

This trade 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
EVALUATION OF INFORMATION

An academic skill required for the study of the Horticulture Trades

INTRODUCTION

Evaluation of information *means careful consideration of information in order to make a judgment about its purpose, meaning, or accuracy.* We evaluate information to understand and solve a problem, to plan a job, or to choose a material, a tool or a method to do a job. As you learn your trade, and as you work, you will use this skill to make the best possible decisions about how to use information.

In order to make the best choices you need the best information. During training, and on the job, you will have many sources of information including textbooks, manuals, tables, diagrams as well as your teachers, supervisors and co-workers. You will decide if the information you have been given is accurate, or if it is just someone's opinion. And, you will decide how to use that information.

In this unit, we will examine evaluation of information under the following headings:

- Getting the right information
- Selecting relevant information
- Cause and effect
- Fact and opinion

PART I
GETTING THE RIGHT INFORMATION

In order to work through a project in an organized and effective way, you need to assess or *evaluate* the steps required to successfully reach your goal. Start by thinking about and planning the whole project before you begin any work**.**

> **Example:** You have a job to complete. You need to plan how you will proceed from the beginning of the job through to the end. Identifying safety or problem areas is probably a good first step. Next, you have to organize information, tools, materials, and equipment. Once you have all of the information, make a list in your head or on paper of how to proceed with the job. Now you are ready to actually start working.

Approach your work systematically. The first step in a systematic approach is to *evaluate* your situation. Size up the job to identify safety or problem areas. Next, organize the information, tools, materials, and equipment. The goal is to think about and plan the project *before you begin*.

The Right Information

Once your purpose is clear, you can gather the right information from the right texts and manuals, manufacturers' guides and suppliers. Choose the table or text that applies to the job.

Examples: If you work in Ontario, you need to work with Ontario's codes.

If you are measuring with metric, you need metric guides – not US or Imperial ones.

Making evaluated choices

When you have found information that seems relevant, you have to evaluate whether it is exactly what you need.

Example: Workplaces are supplied with safety equipment such as fire extinguishers. The choice of safety equipment is based on evaluating your working conditions and matching the equipment to the situation. To determine the class or type of fire extinguisher needed on the work site, you need to know information such as:

- the square footage of the work area,
- the presence of heat, combustibles, flammable products, chemicals, liquids, gases, etc. , and
- legal requirements such as up to date regulations and fire and safety codes for your jurisdiction (your city, county or province).

Next, you need information about types or classes of fire extinguishers such as the following:

- size,
- discharge times,
- approximate range of extinguisher, and
- the types of extinguisher used for different types of fire.

Now you can evaluate the situation and make a decision as to which types of fire extinguishers are required.

The right choice is based on an evaluation of all the information gathered.

General steps used in making sound decisions include:

1. evaluate the situation,
2. get up-to-date information,
3. make sure you understand the information, and
4. use it to make your decision.

Read Passage 1 below. It is about where and when to topdress or core turf. Several areas need to be evaluated. **Read the passage and answer the questions. Answers are at the end of this skills manual.**

Passage 1
Topdressing

Topdressing – adding a thin layer of soil to established or new turf – partially covers and stabilizes planting material and reduces desiccation (drying). On established turf, topdressing can control thatch, smooth the surface, promote recovery from injury or disease, protect greens in winter and change the characteristics of the turfgrass growth medium.

The requirement for topdressing depends on several factors: turfgrass genotype, natural environment conditions and changing characteristics of the turfgrass growth medium. For example, a green used for sports requires a uniform surface. Moderate surface irregularities resulting from traffic, climate conditions and turfgrass growth can be smoothed. Adding sufficient topdressing will also reduce thatch.

Repeated topdressing over unfavourable soils eventually produces a superior turf with improved drainage, aeration and resiliency. However, topdressing with different materials over a period of time can result in *layering*. A layer of sand or other coarse material can result in the soil above it being continuously wet which restricts root growth. Even small differences in soil types among layers can have significant adverse effects on roots. The rate and frequency of topdressing must be sufficient to ensure thorough infusion of soil into the accumulated thatch. Otherwise, alternate layers of soil and organic residue may be apparent for long periods. Vertical mowing can be used to “open up” the thatch layer before topdressing to prevent layering.

Coring is somewhat similar to topdressing. Provided the soil below is suitable, core soil is withdrawn and reincorporated which may be superior to topdressing as the core soil is not foreign. Unlike soil used for topdressing, the amount of soil for reincorporation depends on the size and number of cores and the amount of disruption possible for the turf.

Questions:

1. According to Passage 1, why would you decide to topdress an area?

a) You can bring in sufficient soil to cover the area.
b) The area requires a changed growth medium.
c) The areas requires vertical mowing
d) All of the above.

2. Topdressing would be advised for uneven surface conditions resulting from heavy traffic.

T F

3. Why would a horticulturist choose coring over topdressing?

a) to avoid “layering”
b) to avoid disruption of the turf
c) because it is superior to topdressing
d) all of the above

4. Layering is a problem that can result from topdressing. How can this be prevented?

a) by vertical mowing to “open up” the thatch layer
b) by keeping soils to the same types
c) either a) or b)

Evaluation
This passage describes a soil treatment and a potential problem it might cause. It also describes a different treatment. It does not say that the second treatment is better, only that it is different.

This suggests that with knowledge and experience, you will be able to use the two methods together successfully. While the passage can explain what to do and why (knowledge), it cannot give you the experience.

- You could acquire this by trying the methods then examining the results over a period of time.

Generally, if you are aware of what to watch for, you can be prepared to correct any problems when they start to happen. You will evaluate your work as proceed.

When you are learning your trade, you will look for instructions from texts and advice from instructors or experienced workers. You practice a skill, evaluate the results, and practice again, until you are satisfied with the result.

Learning one step at a time
Passage 1 reminds us that it is important to assess or evaluate our skill, experience and knowledge in any area. The quality of the end product produced depends on the technician's skill, experience and knowledge about how a material behaves or how a tool is used properly.

Evaluation of your understanding as you learn and then practice new skills is important. You assess how well you know the theory of a skill and then assess your practice of the skill to ensure that you understand and can carry out a task using the skill.

This is a gradual learning process, of – study – evaluate – practice – evaluate. It takes time but the results will be worthwhile. It is the step by step learning that all skilled trades people go through.

In Brief
You evaluate any task as you make decisions about how to handle it. The evaluation includes, but is not limited to, the following:

- the purpose of the task,
- the understanding of each factor affecting the task,
- the manufacturers' recommendations,
- where to find complete information, and
- your own skill and knowledge.

Following up
When information leaves you with one or two unanswered questions, you need to search for answers.

Example: You read this:
The experience of the arborist often has a bearing on the methods used to prune heavy trees around power lines.

Now you need to know, about the different methods for pruning around power lines. Finding the answer should lead you to evaluate the methods you might use for this task.

When you look for answers to questions, you accomplish two things:
1) You do the job you've been hired to do with the right tools, equipment and metals.
2) You develop your research skills, which increases your knowledge of the trade.

Information might tell you that you need to evaluate your experience and be prepared to practice. You also need to evaluate how information applies to you; you have to evaluate what you know.

Observing What's Important
Evaluating information means being observant. Trade materials use a variety of methods to emphasize important information. You may see words such as **NOTE:** or **Caution**. You may see boxed information, different sizes or types of print, or symbols such as ▸, !, or ▪. *These are signals* used to catch your attention so you read the information that comes next carefully.

Use the signals to make sure you observe all essential points or steps. Look over the material to note the ***highlighted information***. Signals give advance warning about an important safety issue or an essential procedure. Reread these points and make sure you follow any instructions.

Examples:
- **Signal persons must watch at all times.** The operator must watch the signalman and acknowledge the signal given.

WARNING: Never assume that the precautions on a pesticide label apply to any other pesticide. Always read each label for each pesticide carefully.

Learn the technique for this before attempting the procedure. Serious burns can result.

The ♦, **bold print**, CAPITAL LETTERS, coloured type, and the box make information stand out. Pay attention! The information is designed to keep you safe and your materials in good shape.

PART II
SELECTING RELEVANT INFORMATION

As become familiar with technical information, your ability to identify and select the right information improves:
- You distinguish between general rules that apply to most situations and unique situations where you have to figure out the best way to proceed.
- You notice that patterns and principles you use today also can apply to future tasks.
- You see the *relevance* of information you come across.

Charts and tables

Charts and tables give you quick information. They are designed to be orderly, simplified, and usually in a list format. You can see all the information and select what fits your situation.

Tables can guide you in selecting a drill bit, or supply you with settings for power tools. Tables rate tools to help you decide which to use for a job. Tables can compare materials, or can show you the advantages and disadvantages of a procedure or product.

NOTE: *Information in a table should be reliable, but it may not cover all the information you need. If it doesn't, make sure to use a number of sources to get a complete picture. Be sure you use current tables and up-to-date information suitable for the task.*

Table 1 below illustrates the clear and simple organization of tables. The row headings clearly tell you what the numbers mean. The table allows you to find what you want quickly.

Glance over everything before reading so you know what is being compared.

Read Table 1 and answer the questions that follow. Answers are at the end of this unit.

Table 1: Guide to Soil Drainage Classification Based on Soil Colour

Drainage Class	Description
Very poorly drained	Level or low spots: black topsoil under A or AB horizon**
Poorly drained	High water table or impermeable sub-surface layer, grey or black surface, grey B horizon with brownish mottles
Somewhat poorly drained	Grey or brown A horizon, brownish upper B horizon, grey and rust mottles between 10" to 18" depth
Well drained	Free of mottles, mottles possibly below 30°
Excessively well drained	Sandy soils with rapid permeability, shallow soils on steep slopes

NOTE: Colour can indicate soil condition and its suitability for various uses. For example, white to grey soil may indicate that organic chemicals have leached out. Mottling indicates soil is waterlogged part of the year. Soil colour is most dependable within a region. Comparisons between regions with different climate or mineralogy may not be valid.

**Horizontal layers, called *soil horizons*, develop as soils age. Each layer differs physically or chemically and is identified by a letter. Use the correct system of codes to interpret each layer.

Questions:

1. Well drained soil is typically sandy and shallow.

   T F

2. Somewhat poorly drained soil would have the following characteristics:

   a) grey A horizon and impermeable sub-surface layer
   b) black topsoil and level spots
   c) rust mottles and brown A horizon
   d) free of mottles and steep slopes

3. Grey or white soil can indicate leaching out of organic chemicals.

   T F

4. Where would you find more information on the system used to name (code) soil horizons?

Did you also read the **Note:** and the note marked ** at the bottom of the chart? If not, read them now. To evaluate *how*, *when* or *whether* to use any information, it's important to *read everything available to you*. The note at the bottom provides more details.

Be sure to read all notes and decide how or if they apply to your job. The note with Table 1 tells you this:

- how soil colour indicates soil condition,
- that regional differences affect soil colour,
- what soil horizons are, and
- to find the correct codes.

You can tell from this note that when you are going to evaluate soil condition by its colour, the colour profiles from regions with reddish soil will be different from colour profiles from regions with black soil.

Notes with tables

Notes, or footnotes, that are with tables include essential information. You will have to read and follow the directions found in a table, at the bottom of the table and in the guides. Much more information is available to you when you combine footnotes with the table details. When you have more information to work from, you can decide how or if they apply to your assignment. You can *evaluate*. There is always a good reason for footnotes, so make sure you get all the details.

Notes explain terms or abbreviations.

Example:
Horizontal layers, called *soil horizons*, develop as soils age. Each layer differs physically ...

*Notes explain where or how to use (or **not** use) an item.*

Example:
Sodium nitrate and ammonium nitrate have nearly the same index, but a grower needs to apply only half as much ammonium nitrate (35%) as sodium nitrate (16%).

Notes point out exceptions to a use.

Example:
Never refuel this or other engine while hot.

Notes guide you to the information you need.

Examples:
NOTE: See Chart 5 for Imperial. – Metric conversions

See the Welder's Guide for complete information.

Notes guide you to make correct adjustments.

Example:
Use the correct system of codes to interpret each layer.

Notes may tell you where to find more details.

Examples:
Contact the Poison Information Centre, Ontario, Toll Free at 1-800-xxx-1234.

How And When To Use Information
To decide *how and when* to use information, it is important to evaluate whether it is relevant to a specific situation. The information must:

- be reliable,
- be complete, and
- answer all the questions about the situation.

You may need to read from more than one source to get the information you need. When you have enough information to work from, you can decide how it applies to your task.

Passage 2 below describes plant root systems. As you read, consider the areas that call for planning decisions or additional information. In short, evaluate what you read.

Passage 2
Root Systems

Roots perform three functions: they anchor the plant in soil, absorb water and minerals and store excess food underground. Roots anchor plants with *fibrous* or *tap* root systems or a combination of the two.

A *fibrous* (or *diffuse*) *root system* occupies a large volume of shallow soil around the base of the plant. It consists of many, thin, profusely branched roots. These (grasses are an example) grow relatively close to the soil surface effectively controlling soil erosion. Fibrous roots capture water as it begins to percolate into the ground, drawing minerals from the surface soil before the nutrients leach to lower levels. The extent of growth varies with species and availability of soil water. Roots will remain near the surface if water is near the surface. For this reason, lawns should be soaked thoroughly and infrequently to encourage deep root systems.

A *tap root system* such as found on conifers sends one or two roots straight down into the soil, drawing water and minerals from deep water tables. These roots grow rapidly, branching sparsely, providing very good anchors in shifting soils or windy locations.

A few plant species grow both root systems at the same time; some plant species are able to adapt to the soil and water conditions by using either system: they adapt fibrous roots when the surface is moist, tap roots when it becomes dry. Ornamental and fruit trees often distribute roots in a wide circle beyond the leaf canopy. When irrigating or fertilizing, keep this in mind.

Evaluation
You need to get the expected results from each job you perform. You need to avoid errors in fertilizing or amounts of topdressing. To do all of this, you depend on a clear understanding of information, tools and products you work with and you use the best techniques and methods. *Your purpose is to select the right information to come to this understanding.*

Passage 2 is an evaluation of how different types of root systems require different watering practices. It points out that plant root systems differ widely and that watering practices need to match the natural root patterns. It points out that you need to evaluate the root system before you irrigate or fertilize.

In a passage like this someone has evaluated a set of circumstances and offered advice for the best options for dealing with the circumstances. This kind of evaluation will direct you to correct procedures, directions, tools and materials. It may help you to do a job efficiently or to avoid a problem you might otherwise encounter.

PART III
CAUSE AND EFFECT

*When we refer to **cause and effect,** we are evaluating a relationship between two events*. We want to see if one event is responsible for causing another event to happen. The connection between the two happenings can be established:

- by careful evaluation based on repeated observation,
- by referring to recognized standards and manuals, and
- by talking to respected supervisors and workers in the trade.

Safety on the job often means being aware of cause and effect. If a careless step can cause you harm, you should know the effects of that action. Safety warnings often highlight the cause and effect relationship in some way, especially if the effects are serious

A warning might tell you to avoid doing something that can *cause* a danger. The warning may also state the consequences, *effects* and general safety directions.

Example:
Always wear safety glasses when using these retaining ring pliers. Retaining rings can slip off and fly with considerable velocity. To avoid damage to engine parts and to yourself, always use the recommended tool in the way recommended by the manufacturer.

Recognizing cause and effect relationships can help you understand:

- what action causes a problem,
- what action solves a problem without creating a new one, and
- what action can prevent a problem from happening in the first place.

A problem happens because something causes it. When you search for the cause of a problem, look at the relationships between actions that are closely related to the problem. As you search for solutions, think about how to change the factors that have caused the problem. When planning a project, think ahead to the logical order of procedures so that you can avoid any action that has the potential to cause a problem.

Who (or what) caused it?
In the sentence below, it is clear what happened.
Fred threw a snowball and it went through the shed window.

Fred threw a snowball. The result, or effect was, it broke the shed window. You can reverse the order of the sentence and still make sense of the relationship: *The window was broken because Fred threw a snowball through it.*

Example: There is a direct cause and effect relationship between drainage and aeration"

In poorly drained soils, gravitational water does not drain away rapidly. As a result, large pore spaces remain water filled. This in turn blocks aeration.

In this example:

- The first sentence gives you a cause – poorly drained soil.
- The second and third sentences tell you the effect of the action – large pore spaces block drainage

We can reverse the order of the sentences and still make sense of what happened:

Aeration is blocked in poorly drained soils because water fills large pore spaces and does not drain away.

But we cannot reverse the order of the relationship and still make sense. In other words, the result is not the cause. You cannot say:

Blocked aeration causes large pore spaces (or poorly drained soils).

And, we cannot say, "*A broken window caused a snowball to be thrown."*

It doesn't make sense if you mix up the cause and result. The events occur because of a cause and effect relationship. You have to keep this relationship in mind as you troubleshoot. As you search for problems and their solutions, remember to note the order of the actions even if the *sentence order* is changed.

Take two directions to study cause and effect

In practice, we often work in two directions – backwards and forwards – when we talk about cause and effect. Sometimes we know what happened (the *effect* or *result*), but we don't know why (the *cause*). Sometimes we know what action we are taking (the *cause*), but we don't know the effects or results of it.

> **Example:** As you are driving on a winter's night along an unfamiliar concession road, think ahead. Predict the likely results of your actions. You may do any of the following:
>
> a) skid into a ditch,
> b) miss a turn and get lost,
> c) hit an icy patch and spin, or
> d) be lucky and arrive safely.

You have worked from your present actions forward to predict the probable or possible effects. The purpose in doing this is to evaluate the likelihood of an event taking place - of *a, b, c, or d*. When you evaluate the effects of what you are doing now, you can change your behaviour to avoid or prevent a problem.

> **Example:** Knowing that improper care and/or use of a tool reduces its life and efficiency, you can adopt practices that will avoid this result. You can evaluate your own practices compared to recommended (proper) handling and use. So when caring for precision tools:
> - Use only as directed.
> - Observe how experts handle and store their tools.
> - Lubricate properly.
> - Repair or replace if not functioning.

Passage 3 outlines a relationship between cause and effect. The purpose is to understand and, therefore, avoid poor or ruined work. **Answer the questions that follow using both Passage 3 and Table 2 for information. Answers are at the end of this skills manual.**

Passage 3
Pneumatic Tool Maintenance

Tools and equipment cannot operate correctly unless you take proper care of them. Although air tools do not require much upkeep, basic maintenance will prevent problems. For example, storing a tool with water in it will cause moisture to gather in the lines and to be blown into the tool when next used. In addition, rust will form resulting in a shortened life for this tool.

Maintain tools and equipment. *More tools are ruined because of poor care than by any other single cause!* If a tool is not functioning properly, fix it.

The most common causes of pneumatic or air tool malfunction are the following:

- poor or lack of proper lubrication,
- excessive air pressure or lack of it, and
- excessive moisture or dirt in air lines.

See Table 2 for a troubleshooting guide to air tools.

Follow the recommended air pressure for all air tools. An overworked tool will wear out faster. It may cause a series of problems as well: if a tool with worn parts is used, it will use more air pressure; the air compressor may become overworked and put out air that is not clean or dry which may shoot back into the tool. And so on....

TABLE 2 TROUBLESHOOTING GUIDE FOR AIR DRILLS

Problem	Probable Cause	Recommended Action
Tool does not run, air flows freely from exhaust, spindle turns freely.	Rotor vanes stuck with dirt or varnish.	1. Check for dirt in inlet. 2. Pour liberal amount of air tool oil in air inlet. 3. Operate trigger in short bursts. 4. Disconnect air supply; then turn empty and closed drill chuck by hand. Reconnect air supply. 5. If still not operating, have tool checked by authorized service centre.

Questions:

1. According to this passage, a technician or mechanic could avoid most of the causes of ruined tools and equipment.

   T F

2. Which is the most likely cause of shortened pneumatic or air tool life?

   a) the formation of rust
   b) storing the tool with water in it
   c) reduced or excessive air pressure
   d) all of the above

3. If you cannot fix an air drill yourself, you should replace it immediately.

   T F

4. Which is **not** a common source of a ruined pneumatic tool?

   a) frequent use
   b) lack of air pressure
   c) dirt or varnish in the rotor vanes
   d) worn out parts

Passage 4 is a general guide to the proper care of air tools. It describes where problems could occur and what to look for. Once you know about common problems and their causes, you can avoid them. If they occur, you know a good place to start your search for a cause and a solution.

Troubleshooting Guides

Troubleshooting guides list common causes of problems and solutions so you can find and solve them without a major investigation. Table 2 is an example of a cause and effect guide found in your trade.

Look for the places the problem could have occurred. As you eliminate possible causes, narrow in on the most likely ones. This process will help you find the cause of tool malfunction in a logical manner. The cause will lead you to the solution such as a changed method, a different technique, or a tool replacement.

Test your Abilities
Evaluate the situation and yourself.

If the troubleshooting process leads you to the limits of your own expertise, you may have to find another source of information. Tables and manuals can help you make this assessment.

> **Example:** Under the heading, *Recommended Action* in **Table 2,** step # 5, you read this: *have tool checked by an authorized service centre*. Now, you know to go to a service centre for more help.

Directions in manuals may say something like:

- *if the tool is not functioning properly...*
- *Maintain tools...*
- *use proper lubrication*

These directions assume that you know what *functioning properly*, *maintaining tools*, and *proper lubrication* mean, and that if you don't know, you will find out. An important part of evaluating a situation is to know when you have to look something up, or when you have to find further information. It also means knowing where to go for help.

Looking for more causes
Be aware that there may be more than one cause of a problem. A problem such as a poorly maintained air drill may be the cause of another problem such as an overworked air compressor. If you have not lubricated the air drill properly, or you used the wrong type or quantity of oil, this problem may lead to another problem in the compressor.

PART IV
THE DIFFERENCE BETWEEN FACT AND OPINION

*A **fact** is based on something that can be measured or proven.* When you can explain a statement based on solid information, you are presenting a fact.

> **Example:**
>
> Loss of footing getting on or off a ladder causes up to 40% of accidents.

*An **opinion** is based on an unproven belief.* When we base an idea on an opinion, we need to look closely to find our reasons for thinking the way we do.

Examples:
Imports are better than domestic cars.

The Maple Leafs will win the Stanley Cup.

Know the difference
When you evaluate information, you need to look closely at your reasons for thinking the way you do.

Example: Are tools produced for professional use better than tools produced for ordinary use? In what ways? For which situations? Explain your answers.

If you can explain the answers to these questions by drawing on facts that support what you say, your answer will be true.

If you explain your answer by saying "I think " or "I heard that …", you are stating an opinion. It may or may not be true.

When someone tells you something is wrong with a finished product, they are probably giving you valuable information. It's your job to evaluate this information. Can you get reliable details about where and when the product failed, with an accurate description? Or, is it an opinion? Something like, "This bin doesn't seem like the other ones". In evaluating any situation, keep an open mind, ask questions and include information from a variety of quality sources.

Know your sources
Table 2, *The Trouble Shooting Guide*, is an example from a repair manual that includes directions to use *recommended* air pressures and *authorized* service centres.

It is important when you evaluate information is to find out who wrote it. A maintenance manual provided by the manufacturer is a very reliable source. An article in a respected trade magazine is another. A chat room on the internet may dependable information. *An important rule is to only use reliable sources to provide your information.*

You will seek advice from experts and experienced professionals. But even the time-honoured practices of seasoned trades people come under occasional review that can lead to a new and better way of doing things. You need to learn and respect traditional methods but be open to new ideas. New and better ideas can only develop by someone carefully observing the actual relationship between cause and effect in the work site.

Language
Just as some words make a cause and effect relationship very clear, some words and phrases make rules and codes very clear. In some situations, the language tells you that there is no room for opinion.

Words and phrases such as *never, always, must (not), shall (not), are prohibited*, make it very clear that the *information presented is not open to opinion, debate or evaluation.* Your

experience may not give you enough information to understand or evaluate the reasons for every direction. The language tells you what to do; it tells you there is no decision-making necessary.

Examples:

Never apply insecticides to fruits and vegetables in bloom.

These persons are liable under the *Pesticides Act* and Regulation XXX for any misuse or misapplication of a pesticide.

Make **no** response if a hoisting signal is unclear!

Never touch electrical equipment with wet hands or with equipment.

Pesticide accidents must be reported to the Director under the Act.

Words and phrases like *should be, ought to, is recommended* and *make a reasonable effort,* offer suggestions or offer opinions. They offer advice that you will consider and evaluate. There may be some room for decision-making based on opinion:

Examples:
Tools should be good quality.

In some cases, two people ought to work together.

A metatarsal type safety shoe is recommended.

Make a reasonable effort to contain the fire.

In Brief
As you learn about your trade, make observations with a clear, open mind. Constantly evaluate your ideas or materials. Assess your skill level in carrying out a project. What do you still need to learn? Based on your experiments and observations, you will learn to make evaluations based on useful facts, not unsupported opinions.

CONCLUSION

The steps in a procedure may be straightforward, but you still have to evaluate information as you make decisions about materials, equipment, costs and time or when you look for trouble spots. To solve most problems, you first need a clear understanding of how something is supposed to work. Through experience, you will discover causes of and solutions to problems. You will also learn to use experience to evaluate the effectiveness of each solution as you try it.

Materials, installation techniques, equipment and codes are constantly changing in the trades. You have to keep up with these changes. You have to differentiate between someone's opinion and reliable facts. Check with inspectors, suppliers and manufacturers to learn about the latest products and information. Learn to recognize the relevance of the information you read by evaluating how it relates to your trade and to the job you are doing.

Sound decisions depend on knowing your sources and on your ability to take advantage of all the available resources. Information can come from written material, from lessons with experts and from your own experience. Learn to evaluate what you learn so you can choose the information that best fits the situation.

Summary

1. **Evaluate the situation from every angle** and choose information, products and rules that fit the job.

2. **Understand the relationship of the information in a table, diagram and the text.** Use it all and relate it all to what you are doing or learning.

3. **Assess your skills, experience, information, and how you are applying the information.** Evaluation is one of the best learning tools we have.

4. **Understand what cause is, and what effect is**. Work backwards to find cause, and work forward to predict the effect, or the result. Your object is to prevent problems.

5. **Weigh the facts you have available and make appropriate choices at every step.**

6. **Learn the difference between fact and opinion**.

ANSWER PAGE

PART I Passage 1, Topdressing

1. According to Passage 1, why would you decide to topdress an area?
   b) The area requires a changed growth medium.

   Paragraph two gives reasons for topdressing based on needs and possible benefits. If the existing growth medium needs improvement, it can be improved with topdressing. Just because you can haul in soil (Answer a) doesn't mean an area needs it. Vertical mowing (Answer c) is a method used to prevent a problem, not a reason to topdress.

2. Topdressing would be advised for uneven surface conditions resulting from heavy traffic.

   F Until you evaluate the amount of irregularity and its cause, state False. Paragraph two suggests topdressing for *moderate surface irregularities resulting from **traffic**. Traffic* is not the same as *heavy traffic* which suggests compaction that would require more than topdressing.

3. Why would a horticulturist choose coring over topdressing?
   a) to avoid "layering"

   This question asks you to evaluate two methods to avoid a problem or produce a result. Coring does not introduce a different (foreign) type of soil, so does not create layering. Coring may be disruptive (Answer b). It is not necessarily superior (Answer c) although it *may be* if the soil is suitable. You would have to assess this before choosing c) as an answer.

4. Layering is a problem that can result from topdressing. How can this be prevented?
   c) either a) or b)

   Procedure a) is given as a method of preventing layering. Choosing the same types of soils (Answer b) will prevent the bad effects of layering.

PART II Table 1: Guide to Soil Drainage Classification Bases on Soil Colour

1. Well drained soil is typically sandy and shallow.

   F The question asks you to find details on a table. You need to match a category, *well drained*, with the correct description to evaluate a soil for a use. In this case, answer False because the description matches the category *excessively well drained*, ***not*** well drained. The soils in the different categories would be suited to different purposes.

2. Somewhat poorly drained soil would have the following characteristics:
   c) rust mottles and brown A horizon

This question also asks you to match information so you eliminate incorrect details such as *impermeable sub-surface layer* in Answer a) or all details in Answers b) and d).

3. Grey or white soil can indicate leaching out of organic chemicals.

   T The **Note** at the bottom of Table 1 explains with this example how colour is related to soil condition. When evaluating information, use *all* the information available before answering.

4. Where would you find more information on the system used to name (code) soil horizons?

   Look in an approved textbook or manual covering the science of soil. Use the index to find *horizon* or the table of contents for soil development, layers or horizontal layers. For the code applicable to your area, check with the Ontario ministry for guides.

PART III Passage 3, Pneumatic Tool Maintenance
Table 2: Troubleshooting Guide for Air Drills

5. According to this passage, a tradesperson can avoid the common problems which cause air tools to malfunction or function badly.

   T Passage 3 lists the most common causes of pneumatic or air tool malfunction. A tradesperson can avoid these. Furthermore, the passage states what to do if the tool is not functioning properly so the tradesperson avoids ruining a job.

6. Rust will form in air tools for the following reason:
   c) tool is stored with water in it

   This is the only cause listed for rust problems although there may be others. The solution is to plan time for routine upkeep and to store tools correctly. Answers a), b) and d) will cause problems and should be corrected.

7. An air tool which requires more air pressure may cause damage to the air compressor.

   T This is a cause and effect question. The best bet is to avoid the problem in the first place. Usually, one problem causes another or a continuing problem. As each problem can affect a final result, troubleshoot to find and solve it.

8. The air flows freely from the exhaust in your air drill and the spindle turns, but your air drill does not run. According to Passage 2, which action below will **not** correct the problem?
   a) drying the water in it before storing,

   The answer is found in Table 2. Answer a) is the only action that does ***not*** correct this problem. Eliminate wrong choices or actions to focus on the correct or most likely solutions. The right solution – either b), c) or d) will eliminate or prevent this problem.