

ATC Program Essential Skills Package

Information Systems Architect



ARTS & TECHNOLOGY
C E N T R E

Instructional Methods: Classroom Lectures, Practical Lab Activities, and

Course Format: Classroom: Individual and group work

Lab: Individual and group work (practical application)

Rationale:

Workplace Education Manitoba has listed 9 Essential Skills to be successful in any work place. All nine Essential Skills are used in different combinations, in different applications, in every occupation. They are the foundational skills you use to carry out your work tasks and they're the building blocks you use to learn new ones. The importance of - and need for - employees to have appropriate levels of workplace Essential Skills is clear and strong.

What specifically are the Essential Skills needed in the workplace?

To help answer this question, the federal government, since 1994, has surveyed more than 3000 Canadians in workplaces in all sectors and of all types and sizes of organizations. All were asked what workplace Essential Skills they felt were needed in order for workers to be most effective, efficient and productive.

The result has been the identification of the following nine workplace Essential Skills:

1. Reading
2. Writing
3. Numeracy
4. Document Use
5. Oral Communication
6. Working With Others
7. Thinking
8. Digital Technology
9. Continuous Learning

To help students be successful in their training, ATC has developed a package focused specifically on these Essential Skills and how they apply to the program of **Information Systems**. The purpose of this package is not to dissuade students from attending the program, but to help them become successful by informing them of the skills required. We highly encourage all students to take some time to work through the package and become informed of the program requirements.

Arts and Technology Centre, 5 deBourmont Avenue, Winnipeg, MB, R2J1J9, 204 237 8951

1. Reading –

Technicians are required to do research on specific hardware and software components, as well as reading a work order. Total comprehension of the contents is required in a work environment.

Please read the following passage and answer the questions that follow.

The PATA cable is sometimes called a ribbon cable because it is wide and flat. The PATA cable can have either 40 or 80 conductors. A PATA cable usually has three 40-pin connectors. One connector at the end of the cable connects to the motherboard. The other two connectors connect to drives. If multiple hard drives are installed, the master drive connects to the end connector. The slave drive connects to the middle connector.

A stripe on the data cable denotes the location of pin 1. Plug the PATA cable into the drive with the pin 1 indicator on the cable aligned to the pin 1 indicator on the drive connector. The pin 1 indicator on the drive connector is usually closest to the power connector on the drive. Many motherboards have two PATA drive controllers, providing support for a maximum of four PATA drives.

1. If the entire passage was limited to the last sentence in the second paragraph, what would an appropriate name for the passage be?
 - A. PATA power
 - B. The maximum amount of PATA drives
 - C. All about controllers
 - D. All about motherboards

2. What question is answered in the first paragraph?
 - A. Why is the PATA cable called a ribbon?
 - B. What does the stripe on the data cable denote?
 - C. How many PATA drives a motherboard can support?
 - D. Where is pin 1 indicator on the drive connector closest too?

3. How many PATA drives can a motherboard support?
 - A. one
 - B. two
 - C. three
 - D. four

2. Writing –

When completing a work order, e-mailing a client, or filling out a technician's logbook, it is important to use clear and proper language to avoid any misunderstandings, as well as keeping an air of professionalism.

Please read the following sentences and select the choice that best replaces the underlined section. If the underlined section is correct as is, choose option A. (Answers at bottom of page)

1. By the time we get to the heatsink, the fan will stop.
 - A. will stop
 - B. shall stop
 - C. will has stopped
 - D. shall have stopped
 - E. will have stopped

2. Only after I went home did I remember to backup my data.
 - A. went home
 - B. had went home
 - C. got home
 - D. gone home
 - E. should go home

3. I wish I read the chapter before I tried to answer the questions.
 - A. read the chapter
 - B. would read the chapter
 - C. should of read the chapter
 - D. could have read the chapter
 - E. had read the chapter

4. I would be more careful if I had been you.
 - A. had been
 - B. would have been
 - C. was
 - D. were
 - E. could have been

Answers: 1. E
2. C
3. E
4. D

Some tasks require finding the sum of several measurements. Also, computers do not count in the same manner as humans. Because of these aspects of the profession, some basic math skills are required.

Please choose the correct answers to the math problems below.
(Answers at bottom of page)

I. 10^4 is not equal to which of the following?

- A. 100,000
- B. 0.1×10^5
- C. $10 \times 10 \times 10 \times 10$
- D. $10^2 \times 10^2$
- E. 10,000

II. Multiply 10^4 by 10^2

- A. 10^8
- B. 10^2
- C. 10^6
- D. 10^{-2}
- E. 10^3

III. 83,000 equals:

- A. 83.0×10^4
- B. 8.3×10^4
- C. 8.3×10^3
- D. 83.0×10^5
- E. 83.0×10^2

IV. If watts = voltage x amps, how much wattage is approximately produced from 120v and 4amps?

- A. 120w
- B. 200w
- C. 300w
- D. 400w
- E. 500w

V. What is the next number in the sequence? 6, 12, 24, 48, ____

- A. 72
- B. 96
- C. 108
- D. 112
- E. 124

Answers: I.A
II.C
III.B
IV.E
V.B

4. Document Use –

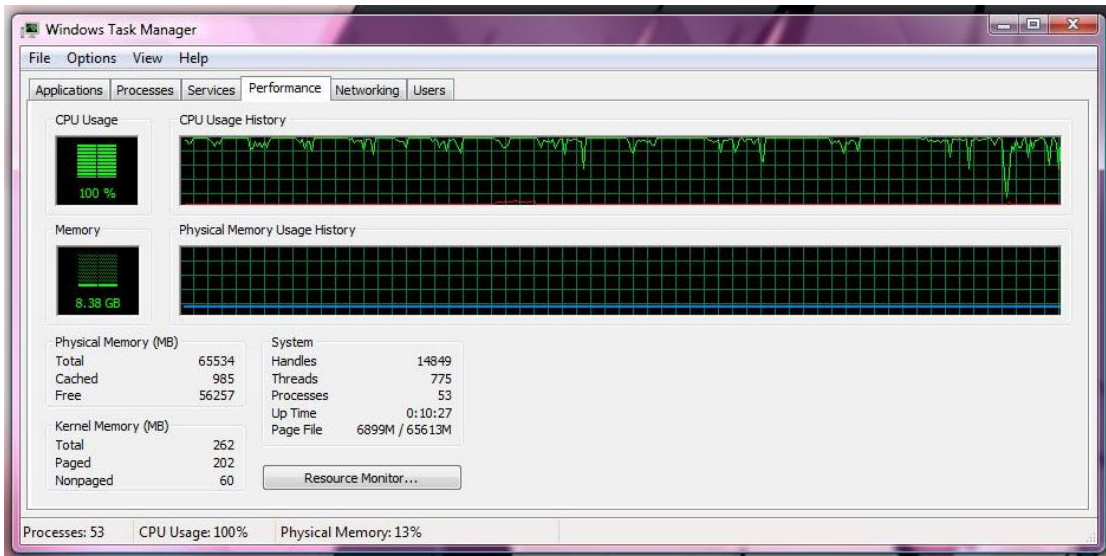
A technician's job brings them to many different workplaces, and requires that they locate information on widely different webpages. Being able to interpret information given to the technician from these sources is vital for both safe and effective work.

What information can be gleaned from the following?



1. Found on a bottle containing a clear liquid:

2. Found in Task Manager while troubleshooting poor performance:



Answers: 1. Corrosive Substance
2. CPU is running at max capacity.

5&6. Oral Communication/Working With Others –

Speaking to clients and co-workers is paramount in the IT industry. Being able to make connections can be the deciding factor in a technician's career. Often times, a task is nearly impossible to complete alone; working with a friend or coworker can be much more effective.

Find a friend or family member willing to participate and help them complete a task they are not familiar with. (ex: Install 3rd party software, complete a level in your favourite video game, etc.) Instruct them step-by-step on how to complete the task.

Be sure to be patient with your volunteer if they do not understand.

Try a different approach! Use different wording if you don't succeed at first.

Remember to be friendly. Smile, even if you cannot see each other!

Now, with your guest, complete a small project together that each of you know how to complete. (ex: trail of dominoes, blanket & pillow fort, 2 player cooperative game, etc.)

Patience is key! Don't forget to be understanding, and do not escalate the problem if your partner gets frustrated.

Remember to work together; don't leave your partner in the dust.

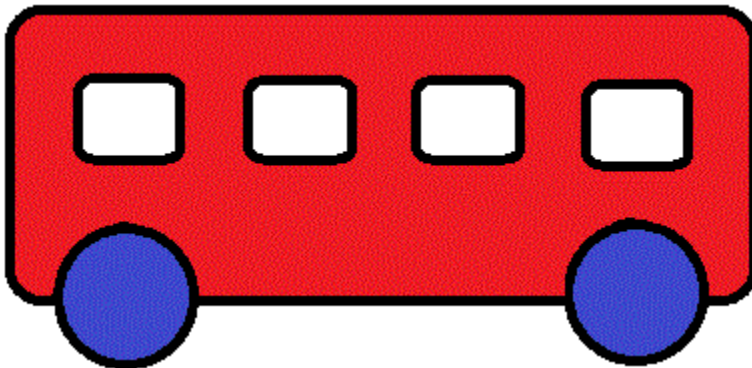
Have fun with it. Working with others is always easier, and more enjoyable, when you are having a good time.

7. Thinking –

Technicians are very often put in situations they are not familiar with. Being able to think outside the box is a massively useful skill to any technician. Sometimes, the answer to a problem is highly irregular, and requires a new way of thinking.

Please answer the following. (Answers at bottom of page)

- I. Name an ancient invention still in use in most parts of the world today that allows people to see through walls.
- II. A five letter word becomes shorter when you add two letters to it. What is the word?
- III. How can you throw a ball as hard as you can, and make it stop and return to you, without hitting anything and with nothing attached to it?
- IV. In which direction is this bus travelling?



- V. How can you take 1 from 19 and leave 20?
- VI. A man comes up to the border of a country on his motorbike. He has three large sacks on his bike. The customs officer at the border crossing stops him and asks, "What is in the sacks?"

"Sand," answered the man.

The guard says, "We'll see about that. Get off the bike."

The guard takes the sacks and rips them apart; he empties them out and finds nothing in them but sand. He detains the man overnight and has the sand analyzed, only to find that there is nothing but pure sand in the bags. The guard releases the man, puts the sand into new bags, lifts them onto the man's shoulders and lets him cross the border.

This sequence of events repeats every day for the next three years. Then one day, the man doesn't show up. The border official meets up with him in a restaurant in the city. The officer says, "I know you're smuggling something and it's driving me crazy. It's all I think about. I can't even sleep. Just between you and me, what are you smuggling?"

What is the man smuggling?

Answers: I. Window II. "Short" III. Throw it upward
IV. Left; think about where the door would be.
V. If it is written in Roman numerals: XIX = 19, XX = 20
VI. The man is smuggling motorbikes

8&9. Digital Technology/Continuous Learning –

Digital technology is obviously a big part of a technician's job; basic knowledge and use of this technology is required as the foundation for the skills learned in the Information Systems course. These advanced skills range from dismantling and reassembling devices to uprooting malicious software in an operating system.

Technicians are encouraged to keep an eye on, and research technologies, be they old or new. Though older tech may be obsolete, in the field, the request a client could have are nearly infinite, spanning decades of knowledge. Because technology is ever-changing, an individual's knowledge must adapt accordingly, to keep up with the times.

Resources –

Reading, Numeracy, and Document Use problems...

"IT Essentials." <http://cisco.netacad.com>, Cisco

Thinking problems...

"Second Lateral Thinking Test." www.kent.ac.uk/careers/sk/puzzles.htm, University of Kent