Technology Infrastructures
Technology infrastructures, workplaces and networks.

Including:
Operating System Comparison
Workplace Settings
Organizational Structures
Computer Network Technology Concepts
Review and Introduction of Culminating Activity
The Business Proposal

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A Unit for Grade 11
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This unit was written using the Curriculum Unit Planner, 1999-2002, which was developed in the province of Ontario by the Ministry of Education. The Planner provides electronic templates and resources to develop and share units to help implement the Ontario curriculum. This unit reflects the views of the developers of the unit and is not necessarily those of the Ministry of Education. Permission is given to reproduce this unit for any non-profit educational purpose. Teachers are encouraged to copy, edit, and adapt this unit for educational purposes. Any reference in this unit to particular commercial resources, learning materials, equipment, or technology does not reflect any official endorsements by the Ministry of Education, school boards, or associations that supported the production of this unit.
Unit Context
Students become familiar with workplace settings and organizational structures from an information technology perspective. They assess the impact of information technology on business operations and solve problems relating to network configurations.

These skills will be useful to the students if they acquire a position in any business from secretary to upper management. These skills are a necessary part of everyday business. For the culminating task, students will be creating a business proposal for setting up a small businesses network and will be presenting this information to the class.

Unit Summary
This unit will cover technology infrastructures, workplace settings and network configurations. By the end of the unit the students should understand the benefits of different operating systems, different types of networks, and which one is appropriate in different workplace settings.

The following is a list of the different subtasks included within this unit:
- Operating System Comparison
- Workplace Settings
- Organizational Structures
- Computer Network Technology Concepts
- Review and Introduction of Culminating Activity
- The Business Proposal

Culminating Task Assessment
Students will complete a case study on technology infrastructures and network configurations, and will then present this information to the class using Hyper studio, PowerPoint, or Presentations. The students will take on the role of an IT company proposing a networking solution to a business. Students will be marked on the content of their presentations, how well they created the presentation, and their presentation skills.

Links to Prior Knowledge
Prior to starting this unit students should be able to:
- name a variety of operating systems and explain how they work
- explain the differences between a standalone environment and a networked environment
- describe when a standalone environment is better suited, and when a network environment is better suited (e.g. in a home office, in a school, in a multinational company)
- use basic applications including a word processor and presentation software
- research information online

Considerations
TECHNOLOGY
The technology used, specifically software, will be completely new to some students and others it will be...
Technology Infrastructures
Technology infrastructures, workplaces and networks. A Unit for Grade 11

outdated. The teacher must keep this into consideration when assigning software-dependent exercises.

Some students also will not have this same technology away from the classroom and should not have assignments or homework given where the internet is involved. Another option is to ensure that the students have access to computer labs during the lunch time and before and after school.

Notes to Teacher
The students should have a basic understanding of how to use an operating system, and some application software. The should also understand the basics of a standalone environment vs. a network environment. If they are unfamiliar with these concepts, some materials can be borrowed from a BTT unit to help catch up those students.
1 Operating System Comparison

The new unit will be introduced, and some of the tasks described briefly. The students will then work on the operating systems comparison chart to determine their prior knowledge on this topic. Students should complete as much of the chart as possible in pairs using one colour of ink. They should then proceed to the computers and using a different colour ink complete the chart. This sheet will be handed in at the end of the class.

2 Workplace Settings

The lesson will be a lecture on different workplace settings with a large amount of classroom discussion on the topic. Students will be writing out their own notes based on the discussions to study from and use in the culminating activity. If completed early, the teacher may proceed into subtask 3’s discussion on Organizational Structures.

3 Organizational Structures

The lesson will be a lecture on different organizational structures with a large amount of classroom discussion on the topic. Students will be writing out their own notes based on the discussions to study from and use in the culminating activity. After the class discussion students will go to the computers and in pairs research one company and describe its workplace setting and organizational structure.

4 Computer Network Technology Concepts

This subtask will allow the students to work individually and at their own pace. The students will work on 4 handouts to complete some basic knowledge about network topologies, hardware, protocols, and types of networks. They will be responsible for typing up the answers to all the questions on the four handouts, and produce a properly formatted document. The students will have two periods to complete this work, which will be handed in at the end of the second day.

5 Review and Introduction of Culminating Activity

Review the concepts covered in the past 5 days, and take up any materials the students have handed in. Then introduce the culminating activity and its requirements.

6 The Business Proposal

Students will complete a case study on technology infrastructures and network configurations, and will then present this information to the class using Hyper studio, PowerPoint, or Presentations. The students will take on the role of an IT company proposing a networking solution to a business. Students will be marked on the content of their presentations, how well they created the presentation, and their presentation skills.
Description

The new unit will be introduced, and some of the tasks described briefly. The students will then work on the operating systems comparison chart to determine their prior knowledge on this topic. Students should complete as much of the chart as possible in pairs using one colour of ink. They should then proceed to the computers and use a different colour ink complete the chart. This sheet will be handed in at the end of the class.

Expectations

| IM2.02 A | – explain how a variety of operating systems work |
| II1.04 A | – summarize the features (e.g., desktop interface, shut-down, start-up) and uses of a variety of operating systems (e.g., Windows 2000, UNIX, Linux, Mac OS); |

Groupings

Students Working In Pairs

Teaching / Learning Strategies

Brainstorming
Internet Technologies
Textbook

Assessment

The Operating Systems comparison chart will be submitted at the end of this class to be marked using a simple checklist for accuracy and completeness. This is assessing the students prior knowledge on the topic to determine if any extra lessons are required.

Assessment Strategies

Performance Task

Assessment Recording Devices

Checklist

Teaching / Learning

For this subtask, the students will work in pairs to complete the operating systems comparison chart. They will first write in what they know in one colour of ink, and complete as much of the chart as possible. The students will then go online and research this topic and fill in as much as possible, and correct any mistakes using a different colour. This sheet is to be handed in at the end of the period, so that the teacher can review them.

If necessary after review the submissions, an extra day may be added if a significant portion of the class is lacking knowledge of these operating systems.

Adaptations

The teacher can determine the pairings of students to benefit weaker students, or to avoid classroom management issues.
Technology Infrastructures
Technology infrastructures, workplaces and networks. A Unit for Grade 11 ~ 70 mins

If access to the internet is unavailable that day, copies of *Insights: Succeeding in the Information Age* (pg 52) could be used.

**Resources**

- Operating Systems Comparison
- *Insights: Succeeding in the Information Age*
- Computer with internet access

**Resources**

- Operating Systems Comparison
- Operating systems.doc
- *Insights: Succeeding in the Information Age* Ellerby, Pinto, Brady
- Computer with internet access 1

**Notes to Teacher**
Copies of the Operating Systems comparison chart should be made prior to this class. There should be enough copies for each pair of students with a few extras in case of mistakes, or students who cannot work in pairs.

**Teacher Reflections**
Outline potential changes and improvements you would make to the subtask, or raise questions or concerns for future thought.

Record any decisions you wish to pass on to others in the Subtask Notes, because the contents of this field are not passed along in the published unit.
Workplace Settings
Technology infrastructures, workplaces and networks. A Unit for Grade 11 ~ 70 mins

Description
The lesson will be a lecture on different workplace settings with a large amount of classroom discussion on the topic. Students will be writing out their own notes based on the discussions to study from and use in the culminating activity. If completed early, the teacher may proceed into subtask 3's discussion on Organizational Structures.

Expectations
IM2.04 – differentiate between stand-alone and networked environments
IM2.05 – describe the environments to which stand-alone systems and networks are best suited (e.g., home office, school, multinational company)
II1.02 – describe appropriate workplace settings (e.g., home office, school, small enterprise, multinational company) for the use of stand-alone, LAN, and WAN environments;
EBV.01 · identify and describe a variety of workplace settings and organizational structures from an information technology perspective;
EBV.02 · assess the impact of information technology on business operations such as the growth of e-business, virtual enterprise, data warehousing;
EB1.01 – define the concept of electronic business;

Groupings
Students Working As A Whole Class

Teaching / Learning Strategies
Lecture
Discussion
Note Making

Assessment
No assessments will be given on this topic at this time.

Assessment Strategies

Resources

Teaching / Learning
The teacher will lecture on this topic, and ask the class questions along the way that we can discuss as a class.

Adaptations
For students who have difficulty writing notes, a copy of a classmates notes can be made and given to them next class.
Notes to Teacher
Either an electronic presentation can be used, or a black/white board to present this material to the students. The students will be required to write out their notes in their notebook / binder.

Teacher Reflections
Outline potential changes and improvements you would make to the subtask, or raise questions or concerns for future thought.

Record any decisions you wish to pass on to others in the Subtask Notes, because the contents of this field are not passed along in the published unit.
Description
The lesson will be a lecture on different organizational structures with a large amount of classroom discussion on the topic. Students will be writing out their own notes based on the discussions to study from and use in the culminating activity. After the class discussion students will go to the computers and in pairs research one company and describe it’s workplace setting and organizational structure.

Expectations
IM2.05 – describe the environments to which stand-alone systems and networks are best suited (e.g., home office, school, multinational company)
EB1.02 – explain how electronic business works;
EB3.01 – explain the impact of electronic business on competition;
EB3.02 – describe how electronic business has affected aspects of the organizational structure of businesses (e.g., the sales department, customer service, inventory handling, and marketing departments);
EB3.03 – identify and describe ways in which electronic business has changed conditions of employment (e.g., hours of work, interpersonal relationships, equipment);
EBV.01 – identify and describe a variety of workplace settings and organizational structures from an information technology perspective;

Groupings
Students Working As A Whole Class
Students Working In Pairs

Teaching / Learning Strategies
Discussion
Lecture
Note Making

Assessment
Assessment Strategies
Performance Task

Assessment Recording Devices
Anecdotal Record

Teaching / Learning

Adaptations
For students who have difficulty writing notes, a copy of a classmates notes can be made and given to them next class.

The teacher can determine the pairings of students to benefit weaker students, or to avoid classroom management issues.

If access to the internet is unavailable that day, copies of Insights: Succeeding in the Information Age (pg 52) could be used.

Resources
Organizational Structures
OrgStructureHandout.doc
Notes to Teacher

Either an electronic presentation can be used, or a black/white board to present this material to the students. The students will be required to write out their notes in their notebook / binder. The students should also have completed or be close to completing the written description of a companies workplace setting and organizational structure.

Copies of the Organizational Structures handout should be made prior to this class. There should be enough copies for one per student, with a few extras for subsequent days when students may have lost them.

Teacher Reflections
Description
This subtask will allow the students to work individually and at their own pace. The students will work on 4 handouts to complete some basic knowledge about network topologies, hardware, protocols, and types of networks. They will be responsible for typing up the answers to all the questions on the four handouts, and produce a properly formatted document. The students will have two periods to complete this work, which will be handed in at the end of the second day.

Expectations

| IIV.01 A | identify and describe a variety of information technology infrastructures in business; |
| IIV.02 A | describe an information technology work environment; |
| II1.02 | describe appropriate workplace settings (e.g., home office, school, small enterprise, multinational company) for the use of stand-alone, LAN, and WAN environments; |
| EBV.01 | identify and describe a variety of workplace settings and organizational structures from an information technology perspective; |

Groupings
Students Working Individually

Teaching / Learning Strategies
Inquiry Process
Internet Technologies
Note Making

Assessment
Students will be required to submit their results when completed. These will be marked for completeness and accuracy using a checklist.

Assessment Strategies
Performance Task

Assessment Recording Devices
Checklist

Teaching / Learning
The students will work individually on this task to complete the four worksheets. They will use links to the internet, or any textbook resources available in the classroom to answer the required questions.

Adaptations

Resources

- Computer Network Technology Concepts 1 CNTC1.doc
- Computer Network Technology Concepts 2 CNTC2.doc
- Computer Network Technology Concepts 3 CNTC3.doc
Notes to Teacher
The questions should be made available either through paper copies (2 copies will fit on one sheet) or online for the students to access as they complete the previous activity.

Teacher Reflections
Description
Review the concepts covered in the past 5 days, and take up any materials the students have handed in. Then introduce the culminating activity and its requirements.

Expectations
IM2.02 – explain how a variety of operating systems work
IM2.04 – differentiate between stand-alone and networked environments
IM2.05 – describe the environments to which stand-alone systems and networks are best suited (e.g., home office, school, multinational company)
IIV.01 · identify and describe a variety of information technology infrastructures in business;
IIV.02 · describe an information technology work environment;
II1.02 – describe appropriate workplace settings (e.g., home office, school, small enterprise, multinational company) for the use of stand-alone, LAN, and WAN environments;
II1.04 – summarize the features (e.g., desktop interface, shut-down, start-up) and uses of a variety of operating systems (e.g., Windows 2000, UNIX, Linux, Mac OS);
EB1.01 – define the concept of electronic business;
EB1.02 – explain how electronic business works;
EB3.01 – explain the impact of electronic business on competition;
EB3.02 – describe how electronic business has affected aspects of the organizational structure of businesses (e.g., the sales department, customer service, inventory handling, and marketing departments);
EB3.03 – identify and describe ways in which electronic business has changed conditions of employment (e.g., hours of work, interpersonal relationships, equipment);
EBV.01 · identify and describe a variety of workplace settings and organizational structures from an information technology perspective;
EBV.02 · assess the impact of information technology on business operations such as the growth of e-business, virtual enterprise, data warehousing;

Groupings
Students Working As A Whole Class
Students Working In Small Groups

Teaching / Learning Strategies
Demonstration
Discussion

Assessment

Assessment Strategies

Assessment Recording Devices

Teaching / Learning
The teacher will discuss the material covered in the past 5 days, and take up the assignments with the students providing the correct answers. After, introduce the upcoming culminating activity, and demonstrate the sample presentation. Allow the students to form their groups (3-4 students per group) and choose which case study they will present.
Adaptations

Resources

- The Business Proposal
- Case Study Scenarios
- Technology Infrastructures.ppt
- Case Study Scenarios.doc

Notes to Teacher

The teacher should be prepared to take up the assignments either on the board, using an overhead, or using the data projector so that students can make corrections. There should also be enough copies made prior to the class of the Case Study Scenarios for one sheet per group.

Teacher Reflections
Technology Infrastructures
Technology infrastructures, workplaces and networks. A Unit for Grade 11 ~ 210 mins

Description
Students will complete a case study on technology infrastructures and network configurations, and will then present this information to the class using Hyper studio, PowerPoint, or Presentations. The students will take on the role of an IT company proposing a networking solution to a business. Students will be marked on the content of their presentations, how well they created the presentation, and their presentation skills.

Expectations
IM2.05 A – describe the environments to which stand-alone systems and networks are best suited (e.g., home office, school, multinational company)
II1.02 A – describe appropriate workplace settings (e.g., home office, school, small enterprise, multinational company) for the use of stand-alone, LAN, and WAN environments;
II1.04 A – summarize the features (e.g., desktop interface, shut-down, start-up) and uses of a variety of operating systems (e.g., Windows 2000, UNIX, Linux, Mac OS);
EB3.02 A – describe how electronic business has affected aspects of the organizational structure of businesses (e.g., the sales department, customer service, inventory handling, and marketing departments);
EBV.02 A · assess the impact of information technology on business operations such as the growth of e-business, virtual enterprise, data warehousing;
EBV.01 A · identify and describe a variety of workplace settings and organizational structures from an information technology perspective;
EB3.03 A – identify and describe ways in which electronic business has changed conditions of employment (e.g., hours of work, interpersonal relationships, equipment);

Groupings

Teaching / Learning Strategies
Conferencing
Ideal Problem-solving
Internet Technologies
Oral Presentation
Multimedia Applications

Assessment
The students will be graded using a presentation rubric, as well as having an anecdotal record stating some of things they did well, and what needs improvement. The content, as well as the presentation skills will be assessed.

Assessment Strategies
Classroom Presentation

Assessment Recording Devices
Anecdotal Record
Rubric

Teaching / Learning
Students will work in their already selected groups using the IDEAL model to solve their case study. The students can use their notes from this unit, textbooks, and the internet to help solve their problem. The students will briefly conference with the teacher at the end of the first work period, and can as well at the end of the second. The will be required to create a multimedia presentation using Hyperstudio, Powerpoint, or Presentations.

Adaptations
More time can be given to students who are having difficulty completing this task. All presentations may not fit into one class, so they will be able to present during the second class.
Technology Infrastructures
Technology infrastructures, workplaces and networks. A Unit for Grade 11 ~ 210 mins

Resources

- Case Study Scenarios Case Study Scenarios.doc
- The Business Proposal Technology Infrastructures.ppt

Notes to Teacher
Students will be working in small groups to complete this task, and may get off topic easily. The teacher will need to circulate around the room periodically to ensure that the students stay on task. Some students may also not participate as much during the work periods, this should be noted in the groups anecdotal records.

Teacher Reflections
Outline potential changes and improvements you would make to the subtask, or raise questions or concerns for future thought.

Record any decisions you wish to pass on to others in the Subtask Notes, because the contents of this field are not passed along in the published unit.
Appendices
Technology Infrastructures
Technology infrastructures, workplaces and networks.

Resource List:
Blackline Masters:
Rubrics:
Unit Expectation List and Expectation Summary:
Unit Analysis:
Technology Infrastructures
Technology infrastructures, workplaces and A Unit for Grade 11

Blackline Master / File

☐ Case Study Scenarios
Case Study Scenarios.doc
This file contains three scenarios that the students will choose from to present to the class.

☐ Case Study Scenarios
Case Study Scenarios.doc
This file contains three scenarios that the students will choose from to present to the class.

☐ Computer Network Technology Concepts 1
CNTC1.doc
This is the first of four documents the students will work form during subtask 4.

☐ Computer Network Technology Concepts 2
CNTC2.doc
This is the second of four documents the students will work form during subtask 4.

☐ Computer Network Technology Concepts 3
CNTC3.doc
This is the third of four documents the students will work form during subtask 4.

☐ Computer Network Technology Concepts 4
CNTC4.doc
This is the fourth of four documents the students will work form during subtask 4.

☐ Operating Systems Comparison
Operating systems.doc
This is the Operating Systems Comparison Chart the students will complete to assess their prior knowledge.

☐ Organizational Structures
OrgStructureHandout.doc
The students will use this note during subtask 3.

☐ The Business Proposal
Technology Infrastructures.ppt
This is a sample for the students to see during subtask 5 where their culminating activity is introduced.

☐ The Business Proposal
Technology Infrastructures.ppt
This is a sample for the students to see during subtask 5 where their culminating activity is introduced.

Licensed Software

☐ Hyperstudio 4 (Upgrade)
Unit

☐ Microsoft Works V3.0 (English)
Unit

☐ WORDPERFECT® OFFICE 2002 (PROFESSIONAL)
Unit

Print

☐ Insights: Succeeding in the Information Age
Ellerby, Pinto, Brady
0-7725-2873-X
This is the textbook commonly used in BTT1O / BTT2O courses.

Website

☐ BTA3O Class Website
http://www.SchoolBoard/MySchool/BTA3O
This website will be used by the students on a daily basis to know what will be done that day, as well as containing a variety of materials.
### Equipment / Manipulative

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Black board / White board</td>
<td>1</td>
<td>1 per class This will be used to keep track of homework, daily reminders, and to present some information to the class.</td>
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<tr>
<td>Computer</td>
<td>1</td>
<td>1 per person</td>
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<tr>
<td>Computer with internet access</td>
<td>ST 1</td>
<td>1 per pair</td>
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<tr>
<td>Computer with Projection Unit</td>
<td>Unit</td>
<td>1 per class This will be used by the teacher to present lessons, as well as by the students for their presentation at the end of this unit.</td>
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<tr>
<td>Operating System</td>
<td>Description</td>
<td>Advantages</td>
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<td>DOS</td>
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<td>Windows XP</td>
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<td>Mac OS</td>
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<td>Unix / Linux</td>
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</table>
Organizational Structure…. 
How the organization is divided into parts and the parts coordinated, in order to achieve the organization’s goals

........and Design 
Represents the outcomes of a decision making process that encompasses environmental forces, technological factors, and strategic choices.

Creating a Structure

The existing structure and design of an organization is the culmination of the vision of management to make the best use of resources (both human and material) to generate the most efficient (profitable) organization possible. The “production” component of the organization is divided horizontally into the different essential activities germane to the product and the “management” component is divided vertically into supervisory components responsible for each related group of activities. This vision of management is the basis for defining tasks, allocating resources, and arranging resources and tasks into productive combinations. Organizational structure is the result of managerial decisions concerning the five major attributes of the organization:

- The division of labour
- Unity of command
- The bases for departmentalization
- The span of control
- The delegation of authority and responsibility

These five basic organizational principles have been proposed for decades. During the passage of time they have been modified to reflect the increasing complexity and changing nature of modern organizational activities.

Division of Labour – rather than an individual or group performing one complete job, the job is reduce component steps to allow separate individuals to perform each step. Early proponents of a multi-step process say efficiencies in production, training of personnel, types of machinery needed, and the basic skill level required by the worker. Inefficiencies in the human equation began to surface as the concept was carried too far. Boredom, fatigue, high absenteeism, poor quality, and high turnover began to exceed the economic advantages. The more contemporary view now sees an increase in productivity through an increase in job scope. Increased responsibility and increased skill variety generates an increase in productivity and individual motivation.

Unity of Command – Original philosophies dictated a “unity of command” that had a subordinate report to one and only one supervisor. This is a sound philosophy and still adhered to today in many organizations. Circumstances, however, are evolving where reporting to more than one supervisor is not only necessary but also an effective construct.

Authority and Responsibility – the classical theorists believed that authority over workers was inherent in the title of the manager and that that position was the single source of
influence in the department. Reality and a valued work force have altered that type of thinking. The organization itself has turned to worker participation, teams, and decentralized decision-making in order to decrease the hierarchical structure, recognize the strengths of the workforce, and raise motivation to an intrinsic level within each member of the organization.

Span of control – the same theorists that believed in the inherent authority in a title believed in small ratios of workers to supervisors. This narrow span of control was (in their minds) necessary to maintain control, however, supporting that type of hierarchy was costly. Wider spans of control became efficient in terms of administrative salary but had the effect of lessening the effectiveness of the organization. To compensate for the potential loss, other aspects of the workforce were examined in order to establish an appropriate worker-manager ratio. Contingency variables such as worker training, education, experience, complexity of task, and preferred leadership style of the manager helped to determine an appropriate ratio.

Departmentalization – the consideration for departments within an organization have not changed significantly from forty years ago to today. Departmentalization by function, product, geography, or process is still valid depending on the needs of the organization. What is changing is the focus of the organization from a concern for the product to a concern for customer needs. Refocusing has lead to the integration of some existing designs and, in some instances, the establishment of dual leadership models.

The structure of an organization is the formal system of working relationships that both divide and coordinate the tasks of multiple people and groups to serve a common purpose. Typically, the structure of an organization is represented in the form of an organizational chart. From the chart, pertinent information can be extrapolated pertaining to the organization’s basic structure and mode of operation.

Basic Organizational Information (form and organizational chart)
- The division of work
- The type of work performed
- Supervisor-subordinate relationships
- Sub-unit groups or components
- The levels of management
- Communication channels
COMPUTER NETWORK TECHNOLOGY CONCEPTS 1

As more and more people use the Internet and the World Wide Web, it is necessary to have a background of information about computer networking. We must look at the computer as part of a network rather than as a self-contained appliance.

Network Topologies

Go to the following links and answer the questions that follow:

http://compnetworking.about.com/library/weekly/aa041601a.htm

1. What does the word topology mean with regard to networking?

2. Design considerations for computer networks cover a wide range of topics: Identify at least three considerations and state why they are important.

3. Using a table format, compare the five main network topologies.

4. Which topology does our school network use? Do you think this is a good choice?
As more and more people use the Internet and the World Wide Web, it is necessary to have a background of information about computer networking. We must look at the computer as part of a network rather than as a self-contained appliance.

Network Hardware

Go to the following links and answer the questions that follow:


http://www-chi.nearnorth.edu.on.ca/Online%20Students/BTA/Unit%201/Networking/Networ1.gif

1. What is a gateway?
2. What is a hub's major function?
3. How are differences possible between hubs?
4. How does a modem convert analog signals to digital?
5. What is a repeater? When is it used and why?
6. What is a bridge? When is it used?
7. What is a definition for a router? What are a router's two main functions?
8. What is the difference between a bridge and a router?
9. Find an image of a router perhaps at the Google image site.
10. Tour the computer office to identify the hardware on our schools Network.
11. Draw the symbols which reflect a hub, router, bridge, repeater, switch.
As more and more people use the Internet and the World Wide Web, it is necessary to have a background of information about computer networking. We must look at the computer as part of a network rather than as a self-contained appliance.

Network Protocols

Go to the following links and answer the questions that follow:

http://www.sdnp.org.mw/webwshp/networking-protocols-software/sld001.htm

http://dir.yahoo.com/Computers_and_Internet/Communications_and_Networking/Protocols/

1. How would you describe Internet protocols. What do they do?
2. Describe the following protocols: IP, TCP, SMTP, HTTP, Telnet, ARP, FTP
3. Which protocols do we use at our school?
As more and more people use the Internet and the World Wide Web, it is necessary to have a background of information about computer networking. We must look at the computer as part of a network rather than as a self-contained appliance.

Types of Networks

Go to the following links and answer the questions that follow:

The following link will describe LAN, WAN, PAN, MAN, and SAN. http://compnetworking.about.com/library/weekly/aa040801a.htm

1. Create a table which will compare LAN, WAN, PAN, MAN, and SAN. Remember to format attractively with appropriate headings.
Case study Scenario's:

You have been hired by your local school board to find a solution to their I.T. infrastructure problem. The board is frustrated with their current situation. 5 years ago, they changed their computer system to one big mainframe computer. However, the school board has increased its size by 25% and they are having a huge problem because the current system cannot handle the load of information and the number of users. Knowing that school board must stay on budget, they have allocated 100,000 dollars over the next 10 years to upgrade their I.T. infrastructure.
What can they do?
How can they do it?
Can they stay under budget, or if not, how much over budget will it cost them to upgrade.
The board only has shared terminal computers (computer without harddrives, only a monitor, connection to the mainframe, and RAM.).

The banking industry has been recently experiencing security problems with their networks. There have been five attempted break-ins, 2 Trojan horse programs, and a plethora of virus attacks. They currently run a distributed network of LAN’s with remote access via the web so head office can view what is going on at the branch level.
What can they do to secure their systems?
What recommendations can you make to them to help them solve their problems?
What type of costs would be involved in your recommendations?

An insurance company has an old mainframe that is still used to calculate the life insurance policy of 100 clients. Maintenance of the mainframe costs 100,000 dollars a year. Each year the cost of maintaining the system increases by 50%. However, the insurance policy of the 100 clients brings in revenue of about 150,000 per year with an increase of about 10% per year.
What problem exists for this insurance company?
What recommendations do you have for them?
**note the company does not want to lose its customers.**
Technology Infrastructures
A Case Study
By: Miss Goldik

The Customer
- Background Information
- Company Size (Number of employees)
- Physical layout (Number of buildings/cities)

The Customer's Needs
- Networking
- Internet access
- Security

The Customer's Wants
- Anything above what they may need
- Extra software/hardware to prepare for future expansions

The Recommendation
- What hardware will they need
- What software will they need
- What network topology will be best for them
## Technology Infrastructures
Technology infrastructures, workplaces and

### The Impact of Information Technology on Business

<table>
<thead>
<tr>
<th>Overall Expectations</th>
<th>IIV.01</th>
<th>IIV.02</th>
<th>IIV.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology Infrastructures</td>
<td>II1.01</td>
<td>II1.02</td>
<td>II1.03</td>
</tr>
<tr>
<td>The Information Technology Work Environment</td>
<td>II2.01</td>
<td>II2.02</td>
<td>II2.03</td>
</tr>
<tr>
<td>Information Technology Issues</td>
<td>II3.01</td>
<td>II3.02</td>
<td>II3.03</td>
</tr>
</tbody>
</table>

### Software Applications and Information Management

<table>
<thead>
<tr>
<th>Overall Expectations</th>
<th>SIV.01</th>
<th>SIV.02</th>
<th>SIV.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Applications</td>
<td>SI1.01</td>
<td>SI1.02</td>
<td>SI1.03</td>
</tr>
<tr>
<td>Creation and Use of Business Documents</td>
<td>SI2.01</td>
<td>SI2.02</td>
<td>SI2.03</td>
</tr>
<tr>
<td>Electronic File Management</td>
<td>SI3.01</td>
<td>SI3.02</td>
<td>SI3.03</td>
</tr>
</tbody>
</table>

### Electronic Research and Communication

<table>
<thead>
<tr>
<th>Overall Expectations</th>
<th>ERV.01</th>
<th>ERV.02</th>
<th>ERV.03</th>
</tr>
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<tr>
<td>Electronic Research</td>
<td>ER1.01</td>
<td>ER1.02</td>
<td>ER1.03</td>
</tr>
<tr>
<td>Information Validation</td>
<td>ER2.01</td>
<td>ER2.02</td>
<td>ER2.03</td>
</tr>
<tr>
<td>Electronic Communication</td>
<td>ER3.01</td>
<td>ER3.02</td>
<td>ER3.03</td>
</tr>
</tbody>
</table>

### Electronic Business

<table>
<thead>
<tr>
<th>Overall Expectations</th>
<th>EBV.01</th>
<th>EBV.02</th>
<th>EBV.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Concept and Operations of Electronic Business</td>
<td>EB1.01</td>
<td>EB1.02</td>
<td>EB1.03</td>
</tr>
<tr>
<td>Electronic Business Security Issues</td>
<td>EB2.01</td>
<td>EB2.02</td>
<td>EB2.03</td>
</tr>
<tr>
<td>The Impact of Electronic Business</td>
<td>EB3.01</td>
<td>EB3.02</td>
<td>EB3.03</td>
</tr>
</tbody>
</table>

### Preparation for Employment

<table>
<thead>
<tr>
<th>Overall Expectations</th>
<th>PEV.01</th>
<th>PEV.02</th>
<th>PEV.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postsecondary Opportunities</td>
<td>PE1.01</td>
<td>PE1.02</td>
<td>PE1.03</td>
</tr>
<tr>
<td>Assessment of Skills and Competencies</td>
<td>PE2.01</td>
<td>PE2.02</td>
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</tr>
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</table>
# Technology Infrastructures

**Technology infrastructures, workplaces and A Unit for Grade 11**

## Introduction to Information Technology in Business---Information Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM2.02</td>
<td>explain how a variety of operating systems work</td>
<td>1</td>
</tr>
<tr>
<td>IM2.04</td>
<td>differentiate between stand-alone and networked environments</td>
<td>2</td>
</tr>
<tr>
<td>IM2.05</td>
<td>describe the environments to which stand-alone systems and networks are best suited (e.g., home office, school, multinational company)</td>
<td>3</td>
</tr>
</tbody>
</table>

## Information Technology Applications in Business---The Impact of Information Technology on Business

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IIIV.01</td>
<td>identify and describe a variety of information technology infrastructures in business;</td>
<td>1</td>
</tr>
<tr>
<td>IIIV.02</td>
<td>describe an information technology work environment;</td>
<td>1</td>
</tr>
<tr>
<td>II1.02</td>
<td>describe appropriate workplace settings (e.g., home office, school, small enterprise, multinational company) for the use of stand-alone, LAN, and WAN environments;</td>
<td>3</td>
</tr>
<tr>
<td>II1.04</td>
<td>summarize the features (e.g., desktop interface, shut-down, start-up) and uses of a variety of operating systems (e.g., Windows 2000, UNIX, Linux, Mac OS);</td>
<td>1 2</td>
</tr>
</tbody>
</table>

## Information Technology Applications in Business---Electronic Business

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>EB1.01</td>
<td>define the concept of electronic business;</td>
<td>2</td>
</tr>
<tr>
<td>EB1.02</td>
<td>explain how electronic business works;</td>
<td>2</td>
</tr>
<tr>
<td>EB3.01</td>
<td>explain the impact of electronic business on competition;</td>
<td>2</td>
</tr>
<tr>
<td>EB3.02</td>
<td>describe how electronic business has affected aspects of the organizational structure of businesses (e.g., the sales department, customer service, inventory handling, and marketing departments);</td>
<td>2 1</td>
</tr>
<tr>
<td>EB3.03</td>
<td>identify and describe ways in which electronic business has changed conditions of employment (e.g., hours of work, interpersonal relationships, equipment);</td>
<td>2 1</td>
</tr>
</tbody>
</table>

## Information Technology in Business---The Electronic Business Environment

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>EBV.01</td>
<td>identify and describe a variety of workplace settings and organizational structures from an information technology perspective;</td>
<td>4 1</td>
</tr>
<tr>
<td>EBV.02</td>
<td>assess the impact of information technology on business operations such as the growth of e-business, virtual enterprise, data warehousing;</td>
<td>2 1</td>
</tr>
</tbody>
</table>
Analysis Of Unit Components

6 Subtasks
39 Expectations
19 Resources
35 Strategies & Groupings

-- Unique Expectations --
14 Business Studies

Resource Types

0 Rubrics
10 Blackline Masters
3 Licensed Software
1 Print Resources
0 Media Resources
1 Websites
0 Material Resources
4 Equipment / Manipulatives
0 Sample Graphics
0 Other Resources
0 Parent / Community
0 Companion Bookmarks

Groupings

3 Students Working As A Whole Class
2 Students Working In Pairs
1 Students Working In Small Groups
1 Students Working Individually

Assessment Recording Devices

2 Anecdotal Record
2 Checklist
1 Rubric

Assessment Strategies

1 Classroom Presentation
3 Performance Task

Teaching / Learning Strategies

1 Brainstorming
1 Conferencing
1 Demonstration
3 Discussion
1 Ideal Problem-solving
1 Inquiry Process
3 Internet Technologies
2 Lecture
1 Multimedia Applications
3 Note Making
1 Oral Presentation
1 Textbook

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