

ATC Program Essential Skills Package

NEW MEDIA DESIGN Program



ARTS & TECHNOLOGY
CENTRE

Instructional Methods: Classroom Lectures, Discussions, Demonstrations and Practical Lab Activities

Course Format: Classroom: Individual and group work
Practical Application – Project-Based Learning

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:

Click on each heading to take you directly to the information pages.

1. [Reading](#)
2. [Writing](#)
3. [Numeracy](#)
4. [Document Use](#)
5. [Oral Communication](#)
6. [Working With Others](#)
7. [Problem Solving/Thinking](#)
8. [Digital Technology](#)
9. [Continuous Learning](#)

9 Essential Skill Areas

10. [Answer Key to Example Questions](#)
11. [References](#)

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 *New Media Design*. 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.

Material in this document has been developed around the Workplace Education Manitoba 9 Essential Skills which can be found here: <http://www.wem.mb.ca/>

New Media Design Program Description



[The New Media Design program exposes students to the New Media industry. Students are provided with a solid foundation for careers as Interactive Digital Media Designers and Developers. This program builds a strong base for students wishing to pursue further post-secondary education in related fields including computer science, business information technology, digital media design and computer graphics at University or College. Find out more at <http://www.lrsd.net/Schools/ATC/N3/1300.asp>](http://www.lrsd.net/Schools/ATC/N3/1300.asp)

1. Reading

Interactive digital media designers and developers read project proposals, plans, online tutorials, trade publications and manuals. They also read e-mails for problems, feedback on designs, meeting arrangements for ongoing projects from supervisors, clients and graphic artists.

Read the email correspondence below and answer the questions following it.

Re: Website client

 mjones@mymts.net

 This message is part of a tracked conversation. [Click here to find all related messages or to open the original flagged message.](#)

Sent: Tue 1/22/2013 9:30 AM

To:  smith, sarah

Hi Sarah

Thank you for your response. Yes the timeline works for me. I am starting a new film project next week. Friday will be a good day for the call. It could be 10:00 or 1:00 o'clock. Let me know. Hope I get chosen as a client.

Sincerely

Mark Jones

On 2013-01-22, at 9:22 AM, < sarah.smith@webdesign.net > wrote:

Hi Mark :

Your work looks very interesting and I am sure that the students could design a website that meets your needs. We begin working on clients sites in second semester which begins next week on Thursday the 31st. A group of 2 or 3 students would work on your site. They would start by meeting with you to gather information and requirements. This would take place about the middle of February as we first need to decide on clients, divide into groups and assign projects.

After the initial meeting, communication can mostly take place through email or phone. There may be times when a face-to-face meeting is required. The site would be completed in early June at which time the students do a presentation, 'unveiling' the sites they have created. You would be invited to attend this celebration.

Does this timeline work for you? What is a good time to call you? I have a pretty open schedule this Friday and can call you then to discuss this further.

Sarah Smith
555-5555



- a. When should Sarah call Mark?

- b. How many students are assigned to work on a project?

- c. When do students divide into groups and get their project?

- d. When will the site be completed?

- e. Does Mark want the students to work on his website?

Follow the link to the online HTML tutorial page, read the information and then answer the following questions:

http://w3schools.com/html/html_basic.asp

- f. What is the tag used to create paragraphs? _____
- g. Given the following text, which tag should you use to markup the line “Skills Needed”?

Website Designers

Website designers and developers read software and programming manuals, textbooks and on-line tutorials to learn new programs, technologies or languages.

Skills Needed

- Creativity
- Understanding of the Principles and Elements of Design
- Ability to use the principles and elements in a purposeful way in their work

Coders often must find errors in their code needing to pay attention to small differences in text, including periods and semicolons.

- h. Below are 6 rows that are supposed to contain two identical sets of characters, but in some rows, one character in the two sets is different. Which rows have the difference? Circle them.

wyesdsdxvc
jkoaspfkasfk
jasbhuhoqhwlk
poanksdnuqwb
iqtgiwegasdio
qwjedasjasnbn

wyesdsdxvc
jkoaspfaskasfk
jasbhuhoqhwlk
poanksdnuqwb
iqtgiyegasdio
qwjedasjasnbn

2. Writing



Interactive digital media designers and developers use their writing skills in a variety of ways:

- writing emails for communicating with clients and team members
- preparing training and support materials for clients and co-workers
- writing and editing content for web pages
- writing reports and project plans
- creating presentations
- summarizing technical information or main ideas from articles

Read the following article about creativity taken from the Creating Minds website. Write a short paragraph that summarizes the main idea and pertinent information into a paragraph in the space provided.

Myths about Creativity

Creativity is not magic, although it can sometimes seem this way, and there are a surprising number of myths about it, including the following chestnuts, most of which are excuses, rather than real reasons.

Creativity is stupid

Fluffy stuff

Creativity is often seen as fluffy, insubstantial and unscientific, especially by people who prefer data-oriented, logical and structured approaches to life. Whilst creative approaches are not always empirically proven, it is still a deeply-researched and well-understood science. And as the source of all new value creation, it has very serious business benefits.

Just ideas

Creativity can be seen as just about coming up with ideas. You know, the brainstorming thing about sitting around and having strange ideas. In fact this is just the beginning of a long and difficult process that includes developing the ideas, marketing them and generally getting them accepted in the wider world.

I'm not that sort of person

I am not creative

This is a common cry of people who have spent most of their lives avoiding being creative. Yet they did not start out that way. At the age of two they were very creative - guaranteed. The thing is, much education and parenting is designed to help the child conform, and it is easy for the child to repress all creative tendencies in an adaptive response to this situation. Before long, they forget even this event and enjoy the benefits that conforming can bring. And then, when they are asked to be creative, their weak and distant memories of discouragement stop them from even thinking that it is possible that they could be creative in any circumstance.

I am not a creative type

Creativity is something done by 'creative types' who are somehow in a different world to the rest of us. We are all creative types. It's just that some people put it in their job definition. Creativity is a natural birthright of everyone. The principle of generativity says that we are constantly being creative. Almost everything you do and say are things you have not done or said before, perhaps just in the exact way this time.

I'm not clever enough

Creativity is difficult

Allied with 'I am not creative' is the idea that creativity is somehow difficult. Well it is true that it is not easy, especially when you get past the initial ideation stage. The difficult part of creativity for many is the state of uncertainty that they find themselves in during the divergent activities. It is easy to retreat from this and not offer ideas and hence blame it as being too difficult.

You can't learn to be creative

Some people seem naturally creative and some seem naturally uncreative. Yet this is nowhere as widespread as it may seem and most people are actually far more capable of being creative than they think, and a little gentle training can go a long way to reawakening their creative capabilities.

Of course, you can never solve every creative problem to order, but you can bend the numbers by understanding how creativity really works and learning to use creativity-enhancing methods.



a. _____

3. Numeracy

Interactive digital media designers and developers use their numeracy skills in a variety of ways:

- Creating invoices for web services
- Scheduling and budgeting
- Cost analysis like comparing costs of web site hosting packages
- Calculating heights, lengths and widths of web page design features and elements such as graphics, text and advertisement boxes. They need to convert between various units of measures, such as inches, centimeters, and pixels to scale designs to fit a range of standard screens
- Math expressions in program code

Try out the following numeracy questions:

The math operators are as follows:

*	multiplication
/	division
+	addition
-	subtraction
()	parenthesis
^	power

- a) $5 - 1 * 6/2 =$ _____
- b) $1260/3 - 20 =$ _____
- c) $(10 + 400 + 10) * 3 =$ _____
- d) $(3 * 330) + (3 * 10) + (2 * 20) =$ _____
- e) $(27/3) * (24/8) * (16/8) - 7 * (26/2-13) =$ _____
- f) $768 - 80/4 + 15 =$ _____
- g) 315 is what percentage of 1260?
- h) 60% of 1260 = _____
- i) 25% of 1420 = _____



- j) Digital photograph sizes are measured in pixels. You have a photograph whose original size is 3872 x 2592. You want to make it 10% of its original size. What will be the final measurements of the reduced photograph?
- k) You have a digital image whose original size is 2592 x 3872 and you want to make it 25% of its original size. What will be the final size?
- l) $54 = a + 5$
What is the value of a? _____
- m) $22 = (-14) + y$
What is the value of y? _____

4. Document Use

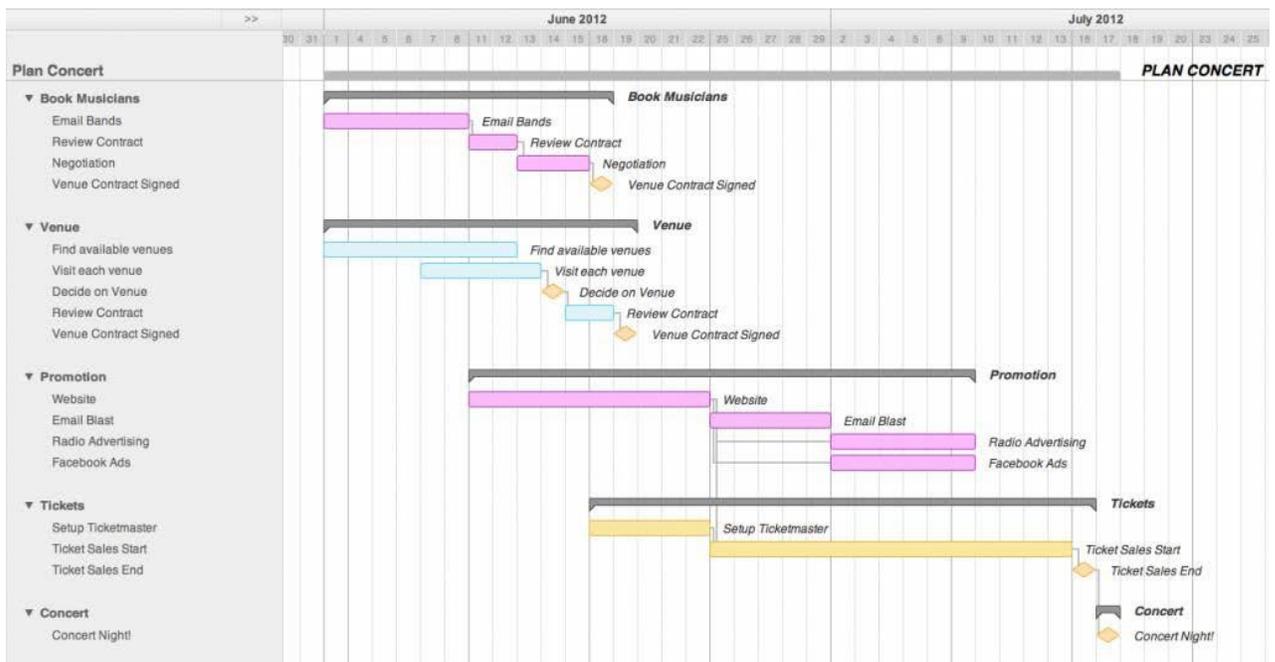
Interactive digital media designers and developers need to locate and use information in many different types of documents. For example, they scan spreadsheets or charts to locate the number of hours spent on projects and project deadlines when setting job priorities and assigning tasks.

Using the Gantt chart below, answer the following questions:

- a. What day is the concert on?

- b. What are the 4 methods used to promote the concert?

- c. What is the deadline for setting up Ticketmaster?



5. Oral Communication



Interactive digital media designers and developers use oral communication extensively in their jobs and in a variety of situations as follows:

- They discuss the suitability of designs with clients and co-workers. They interact with clients for the duration of projects to keep them informed and seek approval on designs
- They may lead meetings with co-workers, colleagues and clients to discuss project details such as web design features, links, structures, and equipment requirements.
- They present research summaries, discuss options and advise clients on web design and development
- They negotiate contracts with clients, consultants and suppliers. For example, they negotiate terms for purchasing data storage space from suppliers, development time from consultants, and prices, terms and conditions for web development projects with clients.
- They facilitate training sessions for co-workers and clients' staff. For example, they provide one-on-one and group training sessions on topics such as maintaining and updating information on web sites.

In the New Media Design Program, you will be expected to discuss topics in both large or small group settings. You will also be expected to do presentations in class.

Exercise:

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!

6. Working with Others

Designers and developers spend much of their time working independently when designing and developing web sites. On larger projects, they coordinate tasks and exchange information with other team members. They may work as team members or leaders depending on their organizations' structures, project designs and personal experience. They may demonstrate, train and assign tasks to junior media designers.

Read the information about teamwork and answer the questions.

Companies look for individuals who can get along well with other people – bosses, co-workers, clients. Most job postings usually have a line stating, “ability to work well with others” or “ability to work well in a team environment”. Developing good teamwork skills comes from experience in teams and an understanding of what is expected.



Team work requires:

- Each team member contributing their knowledge and skills
- Roles and responsibilities that are clear
- Positive attitudes
- Strong relationships
- Being accepting of others
- Embracing diversity
- An understanding of the common goal
- Good time management
- Clear communication
- The ability to give and receive feedback
- The ability to resolve conflicts
- Sharing successes and failures

In a team it is important to know what the expectations are, ask questions, manage time well, and work hard. Being professional and a good team player also requires employees to embrace diversity and work with all different types of people.

a. What do you think is important when working on a team?

b. What do you think it means to be a good team player?

c. Describe a poor team player.



d. Explain the effect the following can have on a team environment:

a. Negative attitude _____

b. Gossip _____

c. Laziness _____

d. Getting mad about feedback/criticism _____

e. Absenteeism and/or tardiness _____

7. Problem Solving/Thinking

Interactive media designers and developers use a variety of thinking skills. Here are a few examples:

Problem solving

- Encounter delays in Internet development projects. For example, they find that consultants and co-workers fail to meet deadlines, and required graphics, text and other electronic deliverables are unavailable. They reorganize schedules and tasks to counter the delays. They may also discipline unreliable employees and seek different suppliers.

Decision making

- Decide which initial design features of Internet and intranet sites to present to clients and supervisors. They consider the purposes of the web sites, anticipated users and the budgets available. They may carry out research into clients' companies and develop profiles of anticipated users to make informed design decisions.
- Decide and choose graphics and text which they think will be effective and yet conform to clients' policies and corporate brand identities. They select only graphics and text for which they have or can obtain reproduction rights.
- Make web site design and development decisions. For example, they decide how to structure web site databases and their levels of access, link web pages and the pop-ups

embedded in them to promote further browsing within the web sites, and where to place graphics, text and other design elements.



Critical thinking

- Judge the suitability and effectiveness of web site content. They use established criteria such as logical flow, interesting content and good overall design. Failure to think critically about the key topics and links often results in disjointed web sites.
- Evaluate the quality and suitability of graphics and design features for web sites by consulting web design publications and standards, research studies, competitors' sites and their sites. They also consider web sites' purpose and intended audiences, clients' budgets and software capabilities.
- Conduct user experience testing using prototypes, analyze results and make decisions based on results

Job task planning and organizing

- Interactive digital media designers and developers schedule their own job tasks to meet multiple project deadlines. They have many competing demands for their time, including responding to queries from clients, providing support to co-workers, completing design and development tasks, preparing reports and troubleshooting web site malfunctions, so their job task planning must be flexible. In addition, they coordinate and integrate job tasks with programmers, system analysts, network technicians and other staff.
- Interactive digital media designers and developers may be responsible for planning the timelines and task requirements for project and scheduling job tasks for co-workers and contractors.

Significant use of memory

- Remember keyboard shortcuts for a variety of software programs.
- Remember where to locate information on Internet and intranet sites, and which content expert to call for technical guidance and advice.
- Remember web designs they envisioned while talking with clients until they can draw or create the designs.
- Remember policies, style guides and standards for clients' web sites.

Finding Information

- Seek opinions and information from co-workers and colleagues to solve problems. For example, they may phone network managers for information on slow web page loading problems.
- Draw on information from resource materials, colleagues and clients when troubleshooting coding and software errors. They may need to seek opinions and advice from several technical resources and integrate them for the correct information.

Try out the following problem-solving activities:



You can look at the alphabet listing below as you answer the next 4 questions.

a b c d e f g h i j k l m n o p q r s t u v w x y z

a. What is the missing letter in this series?

a c e ? i
| f Δg Δh Δj Δk

b. What is the missing letter in this series:

a a b b ? c
Δa Δb Δc Δd

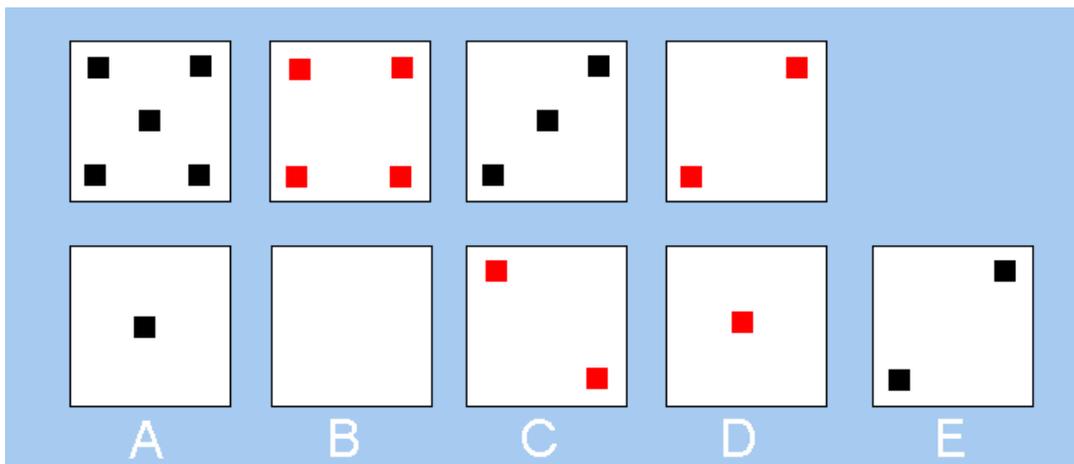
c. What is the missing letter in this series:

a z b ? c x
Δa Δd Δy Δz Δb

d. What is the missing letter in this series:

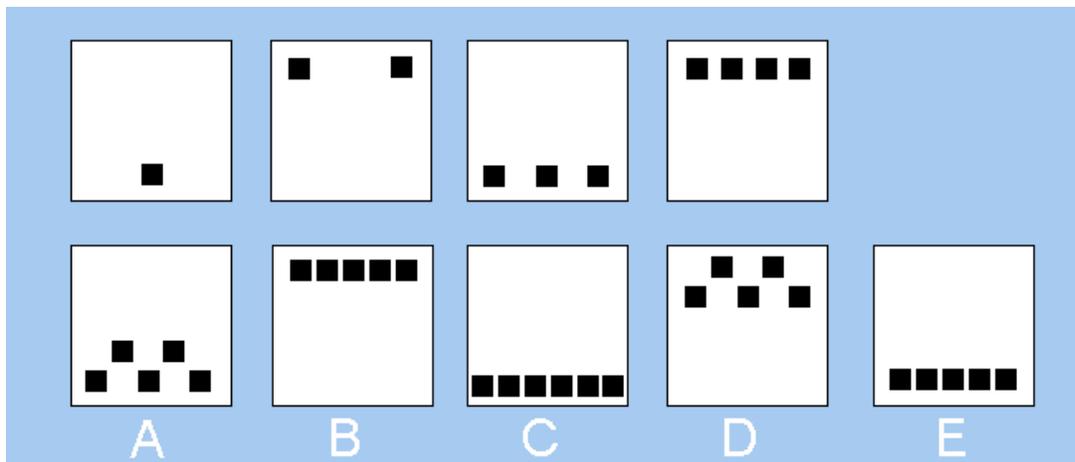
c c d ? e f g g h
Δc Δd Δe Δf Δh

e. Look at the picture below. Which block comes next?

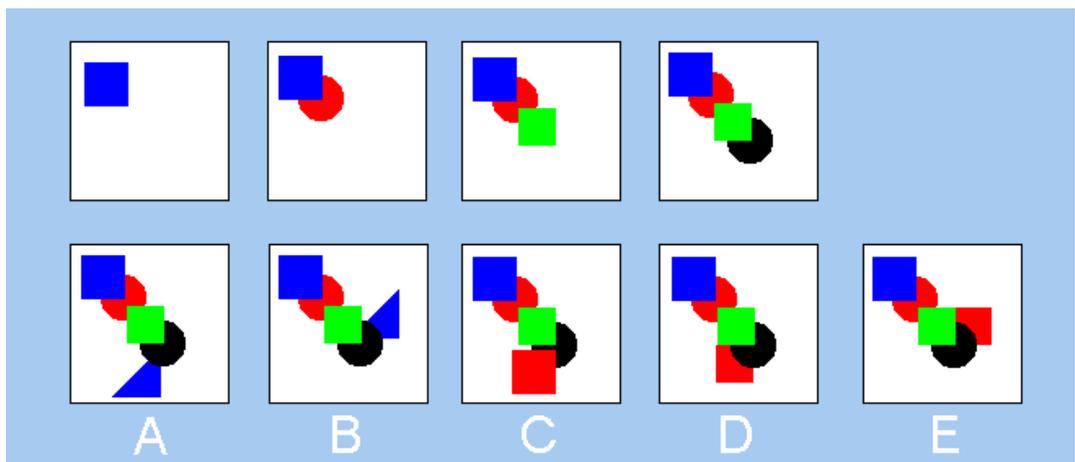




f. Look at the picture below. Which block comes next?



g. Look at the picture below. Which block comes next?



h. Grace thought of a number, added 7, multiplied by 3, took away 5 and divided by 4 to give an answer of 7.

What was her starting number? Circle it.

2 3 4 5 6 7

i. Alan thinks of a number. He squares it, then takes away 5, next multiplies it by 4, takes away 7, divides it by 3 and finally adds 6. His answer is 9. What number did he start with? _____

8. Digital Technology:



Interactive digital media designers and developers:

- Use word processing, communication software, graphics software, spreadsheets and hardware and system skills.
- Do programming and software design and development, by modifying codes using a variety of utility programs. For example, they assemble web site layouts using programming languages such as HTML, CSS, PHP and JavaScript. They make use of frameworks and libraries. They also scan codes to locate faulty programming when troubleshooting interfacing and linking problems between application programs and web pages and select programming languages appropriate for different applications.
- Use the Internet. For example, they read on-line web design and development textbooks using a browser. They create, upload and produce interactive digital media using programs such as Dreamweaver and Animate.
- Test and edit software code to ensure compatibility and consistency between different browsers and devices and publish and test the functioning of interactive digital media on host servers before making them active on the web. They may maintain the sites for durations of project contracts.
- Use and/or create databases. For example, they design and create on-line catalogues using programs such as Access, setting structures, and designing filtering and sorting processes to extract data.

Try out the following digital technology activity with Database Design:

Introduction:

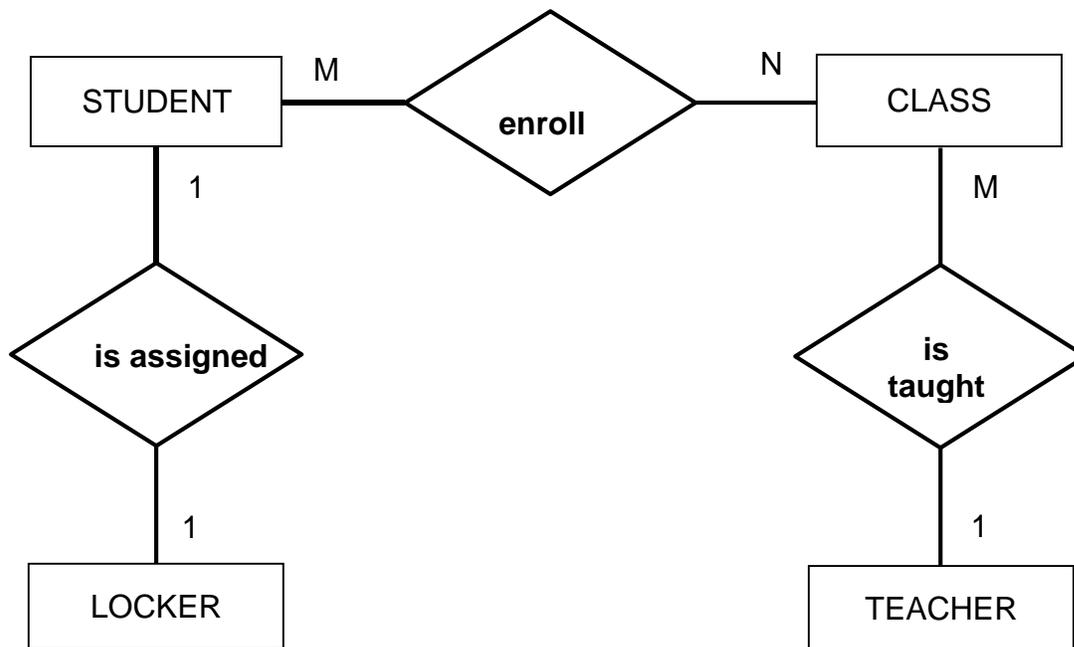
Most websites and online applications access a database to store and retrieve data. For example, online registrations, reservations, purchases and login to restricted areas require interaction with a database. Databases must be carefully designed in order to function well and preserve the integrity of the data stored in them. **Database modeling** is an essential skill for anyone working with a database. A model is graphical representation of something. For example, city planners build models of buildings and green spaces, car manufacturers build models of cars. Database designers build models of databases using a graphical modeling tool called the **Entity Relationship Diagram (ERD)**. Below is a brief introduction to database modelling using the ERD.



Business Case:

The ABC School uses a database to keep track of students, teachers, classes and lockers. The following business rules are followed:

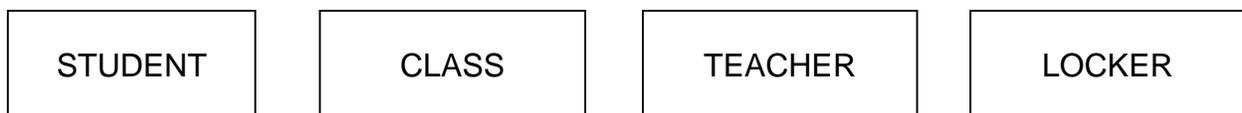
One student may enroll in many classes and one class has many students enrolled in it. One class is taught by one teacher, but one teacher can teach many classes. One student is assigned one locker and one locker is assigned to one student. An Entity Relationship Diagram for ABC School looks like this:



Explanation:

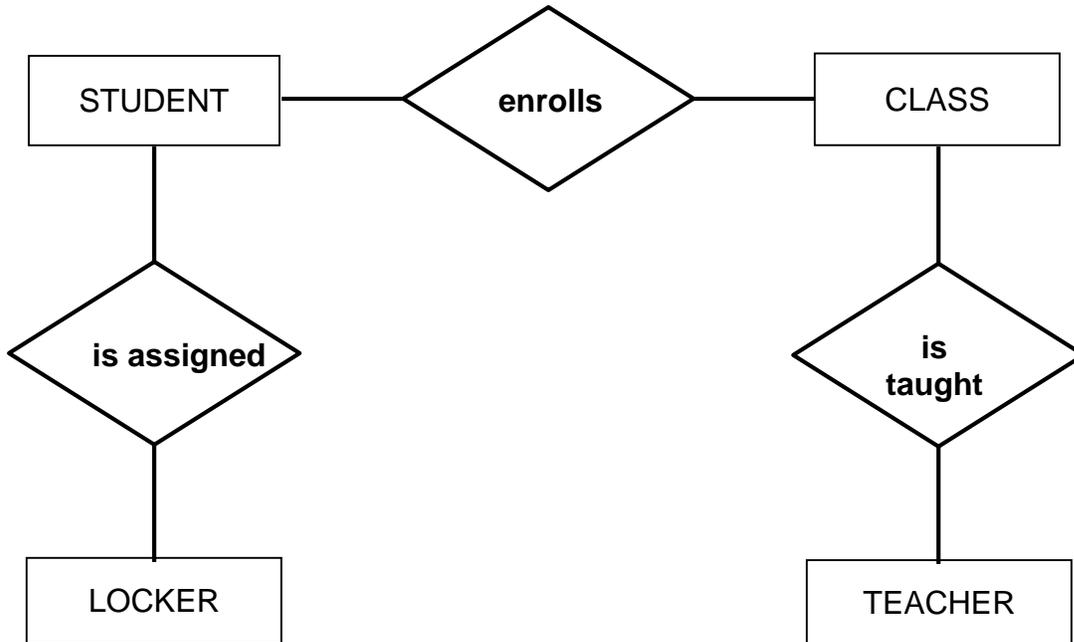
The Entity Relationship Diagram for ABC School uses the following **building blocks** to model the requirements for the ABC School database:

Entity – represents the thing, idea, or event about which you store data about. In this case, the entities are: **STUDENT, CLASS, TEACHER, LOCKER**. A **rectangle** is used to represent the **entity** in an ERD. The entity name appears inside the rectangle.

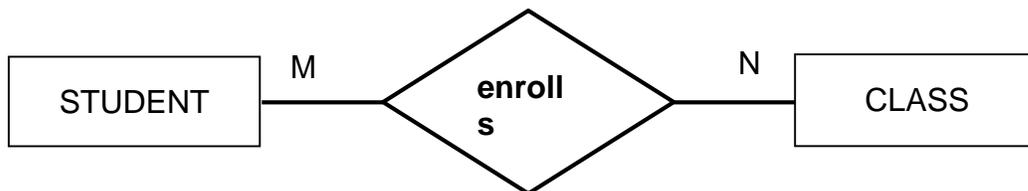




Relationship – is a logical connection between two entities that reflects how the two entities relate to each other in accordance with the business rules. In the ABC School database, a STUDENT **enrolls** in a CLASS, a CLASS is **taught by** a TEACHER, a STUDENT **is assigned** a LOCKER. In an ERD, a **relationship** is represented with a **diamond** and **connecting lines**. The relationship label is placed inside the diamond.



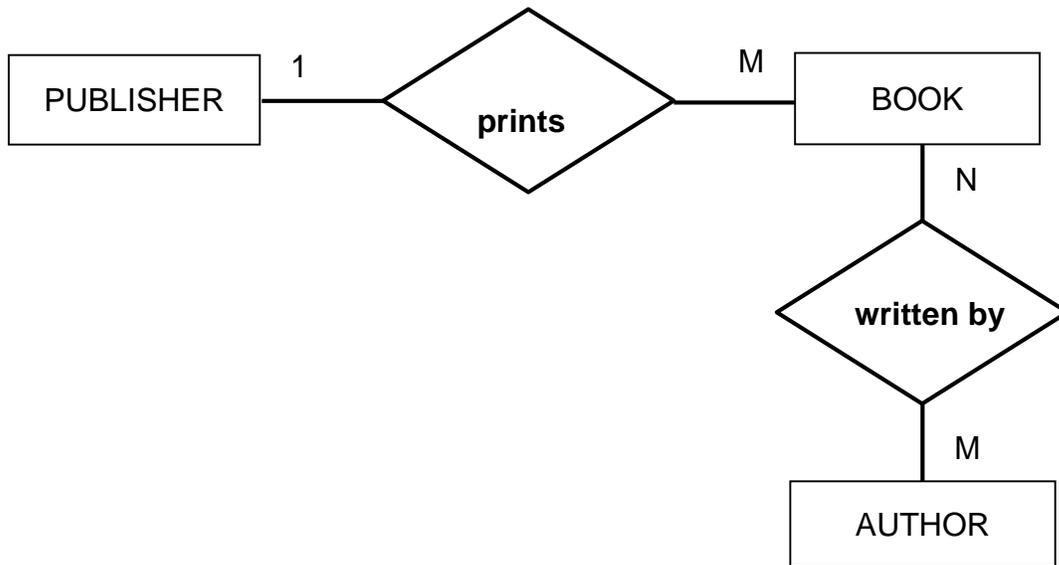
Connectivity Symbol – describes the relationship between two entities by specifying the degree of participation. In the ABC School database, a student may enroll in **many** courses, and a course can have **many** students enrolled in it. This is a **many-to-many relationship** (M:N). A class is taught by **one** teacher, and a teacher may teach **many** courses. This is a **one-to-many relationship** (1:M). A student is assigned **one** locker and a locker has **one** student assigned to it. This is a **one-to-one relationship** (1:1). In an ERD, connectivity symbols are placed near the entities using the appropriate label 1:1, 1:M, or M:N.





Activity:

Given the following ERD for the PUBLISHING COMPANY, answer the following questions:



- a. What does the PUBLISHING COMPANY database keep track of:

- b. How many entities are present in the ERD: _____
- c. What is the connectivity symbol that describes the relationship between PUBLISHER and BOOK?

- d. Complete the business rules followed at PUBLISHING COMPANY by filling in the blanks:
One _____ prints _____ books and one book is printed by _____ publishers.

One book is _____ many _____ and one author writes _____ books.

9. Continuous Learning



Interactive digital media designers and developers need to learn continuously because their field is changing constantly and rapidly. Their learning is often motivated by demands of current projects and they spend lots of time updating their knowledge on the latest technologies and trends.

- They are expected to identify their own learning needs and resources, decide which conferences and seminars to attend and which books to read.
- They identify relevant learning resources such as reference manuals, forums, on-line chat rooms, social media and industry publications.
- They also draw on their background knowledge to apply new learning to particular situations and their continuous learning ability is directly linked to their effectiveness in designing, developing and creating quality products.

Exercise:

List some of the places or sources of information you use other than the classroom to learn new things and stay up to date. Please be as specific as possible.

Ex. Magazines (list the name of the magazine) or websites (give the addresses)



Answer Key

Reading:

- a) Friday at 10:00am or at 1:00pm
- b) 2 – 3 students
- c) Middle of February
- d) In early June
- e) Yes. Mark hopes to get chosen as a client
- f) <p>
- g) <h2>Skills Needed</h2>
- h)

wyesdsdlxvc	wyesdsdlxvc
jkojaspfskasfk	jkojaspfskasfk
jasbhuhoqhwlk	jasbhuhoqhwlk
poanksdnuqwb	poanksdnuqwb
iqtgiwegasdio	iqtgiwegasdio
qwjedasjasnbm	qwjedasjasnbm

Writing:

This is a personal response and answers will vary. It could look something like the following:

*There are many myths surrounding the concept of creativity.
The truth is we can all be creative; we just need to work at it.
With practice and, if we allow ourselves to feel some uncertainty
in the process, we can all become more creative people.*

Numeracy:

- a) 2
- b) 400
- c) 1260
- d) 1060
- e) 54
- f) 763
- g) 25%
- h) 756
- i) 355
- j) 387.2×259.2
- k) 648×968
- l) 49
- m) 36

Document Use:

- a) July 17, 2012
- b) Website, email blast, radio advertising and facebook ads
- c) June 22, 2012

Oral Communication:

What was your experience like helping your friend or family member?



Working with Others:

These are personal responses and answers will vary.

- a. Being able and willing to compromise when you can. To accept what others think; be able to agree to disagree when necessary, yet still arrive at agreed upon decisions.
- b. Being responsible, contributing. Being helpful and non-judgmental. Encouraging team-spirit.
- c. Discourages others, is judgmental, doesn't take feedback well, is argumentative.
- d.
 - a. Negative attitude brings down the overall spirit of the team and can lower productivity
 - b. Gossip leads to mistrust among members who will feel less like contributing for fear of being talked about or judged.
 - c. Laziness affects productivity of team and causes other team members to feel resentful
 - d. Getting mad about feedback/criticism – anger shuts down discussion and halts progress towards producing the best results
 - e. Absenteeism and/or tardiness upset schedules, tasks and productivity. It causes feelings of resentment as members can begin to feel overburdened making up for what the absent person does not do.

Problem Solving / Thinking

- a) g
- b) c
- c) y
- d) e
- e) a
- f) e
- g) c
- h) 4
- i) 3

Digital Technology

Database Design Activity:

- a) The PUBLISHING COMPANY keeps track of PUBLISHERS< BOOKS, and AUTHORS.
- b) There are 3 entities present in the ERD.
- c) 1:M is the connectivity symbol between PUBLISHER and BOOK.
- d) One **publisher** prints **many** books and one book is printed by **one** publisher. One book is **written by** many **authors** and one author writes **many** books.

Continuous Learning

- Website magazine
- w3schools.com
- tv.adobe.com
- any preferred websites, magazines, blogs etc.

References.

Workplace Education Manitoba Website

<http://www.wem.mb.ca/>

Creating Minds Website

<http://creatingminds.org/articles/myths.htm?ModPagespeed=noscript>

teamgantt Website

<http://teamgantt.com/blog/2012/05/09/gantt-chart-example/>

Interactive Media Designer in Manitoba Summary

<https://www.jobbank.gc.ca/marketreport/summary-occupation/5744/MB>

Interactive Media Developer in Manitoba Summary

<https://www.jobbank.gc.ca/marketreport/summary-occupation/22536/MB>

<http://www.kent.ac.uk/careers/tests/sequences.htm>