Course ID:	Course Title:	Spring 2024
CDPD 400	Strategizing for Numeracy in the Elementary Classroom	Prerequisite:
		Credits: 3

Class Information		Instructor Information		Important Dates	
Days:	Blended Course Tuesdays	**Instructor:**	Dianna Easton, M.Ed	**First day of classes:**	Tues, April 16
Time:	5:00 – 6:00 pm	**Email:**	dianna.easton@ambrose.edu	**Last day to add/drop, or change to audit:**	
Room:	RE110	**Phone:**	(403) 390-7176	**Last day to request revised exam:**	
Lab/ Tutorial:		**Office:**		**Last day to withdraw from course:**	
		Office Hours:	As needed by request	**Last day to apply for coursework extension:**	
Final Exam:				**Last day of classes:**	Tues, May 14

Course Description

For practicing educators and pre-service teachers, an examination of numeracy pedagogy connecting research to present day instruction for educators. Students will build personal and common understandings of how children in schools engage with quantitative or spatial information to create meaning in the K-6 classroom. Instruction will build on a model of co-construction which will culminate in students' development of a numeracy plan for use in their classrooms. Topics include visible numeracy, practices that promote number conservation, problem-solving skills, mathematical relationships, geometrical thinking, differentiation, and assessment.

Expected Learning Outcomes

Students will:

- Design mathematical tasks that comprehensively align the Alberta Program of Studies Curriculum in a meaningful, measurable, differentiated, and constructive manner.

- Develop and sequence spatial reasoning and visible numeracy practices that promote number conservation to problem-solving skills.
- Construct meaningful assessment practices that support student learning within individual classroom contexts.
- Create a comprehensive numeracy plan.
- Consider incorporating Indigenous Ways of Knowing into student learning activities/tasks.

Course Textbook:
Liljedahl, P. (2021). Building thinking classrooms in mathematics, grades K-12: 14 Teaching practices for enhancing learning. Corwin.

Course Schedule:

Week:	Text:	Content Emphasis	Class Requirements
April 17 - 21	***Chapter One:*** What Types Of Tasks We Use In A Thinking Classroom ***Chapter Two:*** How We Form Collaborative Groups In A Thinking Classroom ***Chapter Three:*** Where Students Work In A Thinking Classroom	• Implications for planning for instruction and differentiation • New Alberta Mathematics Curriculum • Curriculum Activity • Reflective Journal Introduction • Discussion Boards and Posting Introduction • Math Stories	-Reflective Journal ideation, format, and considerations -Begin curriculum activity selecting a grade and decoding key curricular language and concepts -Begin recording mathematical language used and found
April 24 - 28	***Chapter Four:*** How we Arrange the Furniture in a Thinking Classroom ***Chapter Five:*** How We Answer Questions In A Thinking Classroom	• Creating opportunities for "failure" and learning • Geometry/Shape & Space • Power of Paper Folding • Spatial Reasoning • Art in Mathematics • Power of 2, 3 and 5	-Complete curricular language and concept investigation -Begin finding interesting problems -Introduce Numeracy Unit Plan
May 1 - 5	***Chapter Six:*** When, Where, and How Tasks are Given in a Thinking Classroom ***Chapter Seven:*** What Homework Looks Like in a Thinking Classroom ***Chapter Eight:***	• Visible mathematics • Use of models • Number: Patterns • Problem Solving Strategies • Number Flexibility/Number Talks • Dot Collections	-Numeracy Unit Plan: ideations of 1-3 numeracy activities -Cross-curricular activity link

	How We Foster Student Autonomy In A Thinking Classroom	• Proportional Thinking	
May 8 - 12	***Chapter Nine:*** How We Use Hints And Extensions In A Thinking Classroom ***Chapter Ten:*** How We Consolidate A Lesson In A Thinking Classroom ***Chapter Eleven:*** How Students Take Notes in a Thinking Classroom	• Number: Relationships • Area Models • Expressions and Equations • Spatial Reasoning: Place Value • Creating mathematical experiences	-Website ideas -Mathematicians to follow -Numeracy Unit Plan: ideation of assessment considerations
May 15 - 19	*Chapter Twelve:* What We Choose To Evaluate In A Thinking Classroom ***Chapter Thirteen:*** How We Use Formative Assessment In A Thinking Classroom ***Chapter Fourteen:*** How We Grade In A Thinking Classroom	• Story Telling Part II • Statistics and Probability • Numeracy Plans • Current Research and implications • Numeracy literacy	-Present numeracy units -Assessment practices in mathematics

***Note: A Moodle shell has been created for this course where there is a listing of all the tasks, readings, video links, Zoom meeting dates and times, discussion board questions/prompts, and considerations for your reflective journals. To access our Moodle shell, please login to your MyAmbrose using your username and password, then find the link to Moodle. You will use your same username and password as you did for your MyAmbrose account. Also, a video and handout will be forth coming before the start of our course with more detailed information for you, from the IT department.**

Requirements:

Assessment #1 – Online Discussions and Posts

Rationale

This is an blended course, and the quality your experience here is largely determined by the degree to which you engage with the content, your instructor, and your peers online. For this reason, your participation is expected for a passing grade. This will also be one of the places where you are held accountable for the reading and viewing tasks. Posts should be between 200 and 300 words in length. Please practice writing succinctly.

Instructions

Complete the assigned reading, viewing and project tasks for that week. You are then required to complete the discussion tasks online as outlined in Moodle. You are expected to post your own response once a week, and respond to another participants post, to support or encourage a deeper level of thinking about a perspective or lens in a respectful and manner becoming of a learning environment.

Protocol for posting and contributing:

- Refer to the readings – please back up opinions and personal experiences with the relevant literature and course materials.
- Be respectful to one another and use each other's names to build online presence.
- Post in a timely manner so that the entire community of learners has access to your ideas and contributions.
- Be aware of grammar and sentence mechanics.
- Stick to the work length.
- Connect to the week's readings and your own experience.

Performance Guidelines and Expectations:

The instructor will engage with you regularly in the forums and provide informal and on-going feedback about the quality of your postings. Final evaluation of your online participation will happen after week 5. This assignment is 30% of your final grade with a maximum of 6% earned respectively between posting (3%) and responding (3%) each week.

Criteria	Exemplary	Acceptable	Needs Improvement (will need to consult with professor and develop a plan for improvement)
Response to and comprehension of content	Provocative, critical, depth of thought and reasoning is obvious, connects theory and practice/opinion/experience.	Posts have personal insights and connections to personal experiences and observations, with some connections to the weeks readings, videos, concepts.	Response is off topic and unconnected to theme of the week or the readings, videos, or concepts of the week.
Engagement with peers	Extends the conversation with an alternative perspective, feedback to further learning, and/or additional ideas and resources to consider moving forward.	Response to a post by a peer, connecting post and response with a personal connection and perspective related to the weeks theme, and/or textbook.	No response to peers or partially crafted responses. Response does not add to the conversation or move thinking forward, providing no insights.
Care (Length, Grammar and Spelling, Clarity, Responsibly cited)	Posts are composed, organized, succinct, with proper grammatical structures and spelling. Citations to reference readings, resources and learning	Posts are complete, using proper grammatical structures and spelling making references to textbook, personal experiences, surfacing of new questions/wonderings.	Posts are incomplete or missing proper grammatical structures, with spelling errors. No citations are used to connect weeks readings, videos, or concepts/themes.

	support ideas and rationale for post/response.		
Completion	All posts are completed as required in a timely manner.	Posts are completed.	Posts are not completed in a timely manner.

Assessment #2 – Reflective Journal

Rationale

This reflective activity will be a way to summarize your readings, classroom experiences and applications, and surface new questions. Schon (1983, 1990) and Surbeck, Han, and Moyer (1991) indicate that reflection develops in a hierarchical manner. Schon suggests that initially, two types of reflection exist: reflection-on-action and reflection-in-action. Both are reactive. A third type of reflection, reflection-for-action, is the desired outcome of both previous types of reflection.

Dweck (2008) indicates that learning happens when we are challenged in our thinking, when we make mistakes, we are stretching ourselves to me more open to deeper ways of knowing and thinking. Dweck (2008) contributes the idea that our Mindsets influence and change the meaning of our experiences. Kahneman (2011) continually points out that we cannot check our intuitive natures if we do not take the time to think slowly, deeply and with effort. By taking the time to think, reflect and ponder on our experiences, observations, and wonderings, we are allowing out minds to slow down and notice different patterns and connections, which our intuitive mind will override (Kahneman, 2011). Said (1978, 1994) illustrates how important it is that we understand how we have oriented ourselves so that we can gain a deeper understanding of what we are noticing and how we think culturally about how we interact with each other.

Writing is a way to process the notions of reflectivity as an essential activity in teaching. The commonplace book allows for a place to record our own experiences and thoughts as we interact with the texts and each other. The purpose of the commonplace book is to better understand ourselves and others as we consider the multiple lenses of leadership. The idea of a commonplace book according to Dr. Hans Smits, (University of Calgary), is an ancient one. Derived originally from the Latin, locus communis—literally what is common in our lived spaces—and from the Greek, koinos topos—"general theme," a commonplace book allows us to record our questions, comments, connections, problems and ideas about what we are reading about and discussing with one another.

Instructions

Participants will be expected to keep a weekly reflective journal documenting their thinking and understanding of topics in class, discussions, readings from the text, lived experiences, questions and wonderings, as they arise. The journey is to help individuals reflectively think and be involved within the process of actively repositioning mental constructs, by interacting with the topics, ideas, conversations and work they are doing within their teaching/learning practices. This is a place to record your comments, problems, connections, and ideas as you plan, play, and consider new ways of looking at

mathematics, your practices, and the thinking processes involved in mathematics. The expectation is for you to be authentic and genuine to your learning, processing and journey, *not to summarize key ideas*, but your connections and understandings as you apply new ways of thinking and seeing into your mathematical experiences. Reflect on how your learning relates to your mathematical teaching practices. This reflective journal can be written, drawn, recorded, or any combination thereof. Please enjoy this reflective experience and become creatively involved in your own reflexive practice.

Consider the following questions:

- What are your ethical responsibilities in your role as a mathematical teacher to teach mathematical understanding?
- How does your mathematical beliefs (or understandings) impact your teaching practices?
- How has your mathematical understanding changed or grown over time?
- What has impacted your understanding from the course materials, discussions, activities, or research?
- How have you noticed your thinking changing? Why? What is the importance of this phenomenon?
- What are the questions that arise as a result of the reading? Videos?
- How do you relate to the readings as a result of your own experiences and understandings?
- What interests you? What challenges your thinking?

This is not an exhaustive list and these are only guidelines. Reflect on your entries and look for connections with what is happening in your school, in the news, on social media, in discussions with colleagues and classmates.

Performance Guidelines and Expectations

The reflective journal will be submitted electronically weekly, no later than Sunday afternoons by 12:00 noon. Weighing: 30% with 6% for each entry.

Criteria	Exemplary	Acceptable	Needs Improvement (will need to consult with professor and develop a plan for improvement)
Competence and Commitment	Consistently prepared entries with appropriate citations of articles, etc. Provides knowledge and insights from group discussions and other experiences. Asks and explores questions beyond classroom discussion. The self-reflection was thoughtful and showed insight and future implementations.	Entries are done but are summaries of articles, discussions rather than new insights. No citations of materials discussed. Some questions asked but not explored.	Entries are not done or partially prepared; few connections to personal or work related examples. Writes only about what is discussed in class with no extensions.

Care	Consistently contributes insightful examples of personal experiences of the relationship of theory to practice.	Contributes some insight from reflection on personal experience related to content of assignment.	Contributes no insight from reflection on personal experience related to content of assignment.

Assessment #3 – Numeracy Unit Plan

Students will develop a comprehensive numeracy plan in their chosen grade that focuses on the development of rich tasks, differentiation and assessment for one of the key content areas of Numeracy, Quantitative Information, and Spatial Information. This will also include a online presentation of the plan, in a group Padlet (only for the members of this course section).

The purpose of this assignment is for you to think about how you would break down your grade mathematics curricula into a meaningful unit that builds depth of understanding, transfers skills and allows students to question, ponder and self-reflect upon what they know and what the students next steps are in their mathematical thinking. Using clear unit goals, outline sequence of activities with rational, strategies and student work, and the incorporation of topics discussed in the course, text, and classes within your unit plan. Include any potential problems within the activities selected and strategies that could work to help students continue to engage in mathematical thinking and sequencing of logical reasoning: demonstrating differentiation and classroom mathematical thinking routines. The unit plan created must also include assessment practices/tools to capture student understandings, the feedback opportunities sought, and the self-assessment tasks students will engage in throughout the unit. Finally, include a reflective piece about how this project has informed your teaching practice and how it may influence your teaching practice in the future, with how this unit can link or connect to other subject areas.

In this formal presentation of your unit plan, think about all the elements needed to help guide your exploration/inquiry: guiding questions, mini-lessons, student prompts and practice, lens of mathematician being asked for/used, assessment (formative and summative) pieces, and anticipated and unanticipated expectations within this lived experience. Within your presentation, highlight your rational for creating the numeracy unit with cross-curricular connections. Please consider that you are leading/teaching/presenting this plan to your fellow colleagues at your school, grade team partner or grade team.

Performance Guidelines and Expectations
This Numeracy Unit Plan will be shared digitally with your colleagues by Friday, May 19th, by midnight. This project is weighted at 40% of your grade.

Criteria	Exemplary	Acceptable	Needs Improvement (will need to consult with

			professor and develop a plan for improvement)
Commitment	All components are present with demonstrated depth in understanding of numeracy ideas. Presentation clearly added to the class's understanding of key numeracy ideas.	Included most components but did not flesh out understandings in any depth of detail. Presentation somewhat added to the class's understanding of key numeracy ideas.	Components missing. Is not thorough in addressing numeracy planning. Presentation did not add to the class's understanding of key numeracy ideas.
Care	Indicates deep reflection and connections from text, class discussions and personal growth in numeracy knowledge. Handout is useful and detailed.	Indicated some reflection to text/personal reflection. Shows limited growth in numeracy knowledge. Handout is limited.	There is little personal reflection or the text in connecting numeracy ideas. Handout was not linked to presentation.
Competence	Written work is comprehensive and shows strong communication skills. The presentation showcased strong understanding of key numeracy ideas and was engaging.	Work is organized with limited numeracy ideas in written communication. The presentation addressed key numeracy ideas and was somewhat engaging.	The written work is incomplete and difficult to understand. The presentation was limited.

Professional Expectations:

- Take ownership of your learning and professional journey, contribute to a positive learning environment by being prepared, helping create a safe place to ask questions, discuss and learn from mistakes, and to honour and respect the diversity represented within the class.
- Treat all class members as professional colleagues.
- Submit assignments on time.
- Address issues, conflicts, and differences of opinion promptly and professionally.
- Attend all required classes and contribute to discussions, activities, and collaborations.
- Conduct personal business (texting, Facebook/Instagram, phone calls, online shopping, hobbies, …etc) outside of the classroom.
- Challenge your own assumptions, identify biases, consider other perspectives, and think creatively.
- Go beyond the resources and requirements of the class to find ways to add value to your cohort and journey.

Technology Literacy:

- Regularly check and access Moodle, word processing software, Internet search applications as appropriate to complete assignments, research and communications.

Attendance:

- Students are expected to inform the instructor in advance if they will be late or miss class.
- Missing class or portions of class will be the responsibility of the learner to learn all of the information that was presented while they were gone. You will be responsible for checking in with the instructor to determine appropriate make-up work.

Grade Summary:

The available letters for course grades are as follows:

Letter Grade	Description
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

Ambrose Academic Policies

Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline;** please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devises in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Note: Students are strongly advised to retain this syllabus for their records.