

Destreamed Grade 9 Math Leading the Implementation

Professional Learning Network # 2: Supporting teachers to meet students where they are at



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Land Acknowledgement

I acknowledge that I am on the ancestral territory of nations within nations including the Anishnabe, the Ojibwe and the Michi Saagiig, the inherent right-holders of this land which is home to many diverse First Nations, Inuit and Métis peoples. I am grateful to have the opportunity to work and learn on these lands in a community of sharing.

As educators, we have a duty to learn, understand and redress the historical and ongoing impacts of colonialism. We have a responsibility, individually and collectively, to reconcile our relationship with the land and Peoples.

We will read this and each presenter will “say” something briefly specific to their place and invite the participants (while presenters are sharing) to add in the chat window something specific to where they are

De: in udgsb which covers the ancestral and traditional territories of Mississaugas of the Credit, the Six nations of the grand river and Saugeen Ojibway Nation Territories

Today's Plan

1. Dilemmas - what questions are teachers asking you?
1. Ideas and discussion for answering 3 questions
 - How do I help teachers teach and get comfortable with new content?
 - How do I help teachers to focus on all the overall expectations?
 - What suggestions can I give teachers to help them meet the diversity of students' needs in the classroom?
3. Wrap up and PLN # 3

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To get a sense of who our participants are - Raise hand function in Zoom - implemented destreamed already or will be implementing

Types of Dilemmas/Challenges Prompted by Change

- **Conceptual** - struggling with understandings of the conceptual underpinnings of destreaming (Why?)
- **Pedagogical** - issues that arise as teachers create and enact instructional and assessment practices to best address a destreamed class and a new curriculum (How?)
- **Cultural** - focus on changes in classroom and school culture that may threaten existing school, classroom, family practices or expectations
- **Political** - aligning thinking and practice with new provincial, district, and school policies

Windschitl, 2002; Suurtamm & Koch, 2014

Mention that this was also part of Webinar 1

Possible Dilemmas & Challenges

Conceptual

"Can we really address the needs of all students in one class?"

"I can't teach this curriculum without first filling in the gaps."

Cultural

"Will my child be prepared for university if others hold him back?"

"But the Grade 10 teachers want me to focus on algebra and skip the financial literacy."

Pedagogical

"I have never taught coding - where can I find resources?"

"How long should I spend on mathematical modelling?"

"Where can I find examples of low floor-high ceiling tasks?"

Political

"Will there be changes to the Grade 10 course in the future? Why not now?"

"When will the Ministry provide more resources to support the Grade 9 course?"



Possible Dilemmas & Challenges

Conceptual

"Can we teach financial literacy to all students?"
"I can't find time to teach financial literacy without filling my curriculum with other subjects."

Discussions, evidence, reading, video, time

Pedagogical

"I have no idea where I can find examples of low floor-high ceiling tasks?"
"How can I make sure my students are engaged in learning?"
"Where can I find examples of low floor-high ceiling tasks?"

Cultural

"Will my students be interested in learning about financial literacy?"
"But the curriculum says we have to focus on other subjects like science and math." "What does financial literacy have to do with me?"

Communication, dialogue, time

Political

"Will the government support the new financial literacy course?"
"Will the government provide more resources to support the Grade 9 course?"
"Will the government support the new financial literacy course?"
"Will the government provide more resources to support the Grade 9 course?"

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How do I help teachers get comfortable with new content and the rationale for teaching it?

"Is this math modelling about using manipulatives?"

"I am not a computer science teacher - I don't know where to begin with coding!"

"I don't see why they need to learn box plots - what examples can I use?"

"I don't have the background in how other cultures developed math - do I have to do all that research?"

"A lot of that financial stuff is not about math - I'll just do the math parts."

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What are teachers really asking in their curriculum specific questions - these are some things you might hear - they might be telling you they are unfamiliar with the content, out of their comfort zone and nervous to be uncertain in front of students

New content and new approaches to familiar content

Content that may be new to teachers:

- Coding
- Financial Literacy
- Mathematical Modelling
- Culturally relevant pedagogy

Familiar content but “what does this look like in a destreamed Grade 9 math classroom?”

- Characteristics of functions
- Number sets and concepts such as infinity, limits, density
- Geometric relationships - circle and triangle properties

How do I help teachers teach and get comfortable with new content?

Provide

- Provide space for teachers to collaborate to develop a common understanding of the new content

Encourage

- Encourage networking and sharing of resources connected to new content

Discuss

- Discuss ways to integrate new content by intertwining it with other familiar content in a spiral instructional approach

Provide

- Provide concrete examples or resources so that teachers can see how they can address the new content in the curriculum

Enact

- Enact shared leadership with department heads and curriculum specialists



These are some ideas that we brainstormed - go through list
We want to have a conversation with you, so together we can all share ideas/stories about what is working and what we are hearing

How do I help teachers teach and get comfortable with new content?

- Permettre aux enseignants de collaborer ensemble à développer leur compréhension commune des nouveaux contenus
- Favoriser le réseautage et le partage de ressources de ces nouveaux contenus
- Discuter avec eux de comment intégrer ces nouveaux contenus en les entrelaçant avec les autres (en spirale)
- Donner des exemples concrets aux enseignants ou des conversations mathématiques qui abordent ceux-ci

Breakout Session

Break out group:

How do I help teachers teach and get comfortable with new content?

- How have you responded to this question with your implementation?
- What questions/challenges do you still have?

How do I help teachers address all of the curriculum, focusing on all the overall expectations?

"The strands don't connect to grade 10 - I'll just focus on what they need to know for grade 10."

"They never see coding again - if I run out of time, I'll skip that."

"Financial math is in grade 11."

"I only have time for the "real math" parts."

"I might not have time for all those cultural expectations."

"I'll just focus on what's on the EQAO sample questions."

How do I help teachers address all of the curriculum, focusing on all the overall expectations?

- Provide resources and opportunities for teachers to create rich problem-solving tasks that touch big ideas and overall expectations
- Emphasize that rich tasks can combine curriculum expectations and focus on important math ideas (we have an example at the end)
- Reinforce the importance of addressing all of the overall curriculum expectations and that the course is not just to prepare students for Grade 10 mathematics but to give them skills that they need for life (or to be an informed and critical participant in society)

- Emphasize that An addendum coming for grade 10 curriculum to adjust for grade 9 destreamed (don't need to worry about next course) - this is on slide after french - You have this information on slide 14. Should it stay here as a comment or will you address only on slide 14

All the expectations are important and connected

The continuum shows how the Grade 9 curriculum connects to grade 8 curriculum

Upcoming grade 10 addendum will build on the grade 9 destreamed course

Ontario 

2021

Mathematics Grades 7–8–9 Alignment Chart

OVERALL AND SPECIFIC EXPECTATIONS

Below is a chart cross-referencing the 2021 Grade 9 Mathematics course with related learning in Grades 7 and 8.

GRADE 7 (2020)	GRADE 8 (2020)	GRADE 9 (2021)
STRAND A: Social-Emotional Learning (SEL) Skills in Mathematics and the Mathematical Processes	STRAND A: Social-Emotional Learning (SEL) Skills in Mathematics and the Mathematical Processes	STRAND AA: Social-Emotional Learning (SEL) Skills in Mathematics

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Breakout Session

Break out group:

How do I help teachers to address all of the curriculum?

- How have you responded to this question with your implementation?
- What questions/challenges do you still have?

What suggestions can I give teachers to help them meet the diversity of student needs in the classroom?

"I will have to water down the course."

"There is not enough resource support."

"Some students have so many gaps - they don't have the skills to do this course."

"I can't do 30 different lessons!"

"I'll have to create ability groups."

What suggestions can I give teachers to help them meet the diversity of student needs in the classroom?

Use	Integrate	Use	Revisit	Connect	Implement
Use activities that help you to get to know many facets of your students in order to build a class profile and better understand their narratives and address their needs, lived experiences, and interests.	Integrate opportunities for students to 1) develop their ability to self assess and 2) provide feedback to the teacher to adapt instruction	Use a variety of strategies (e.g. interviews, questionnaires, exit cards) to hear individual student's voices.	Revisit differentiated instruction strategies but be careful that we don't stream the destreamed class.	Connect with the Special Education team, review IEPs.	Implement culturally relevant and responsive pedagogy.

What suggestions can I give teachers to help them meet the diversity of student needs in the classroom?

- Provide opportunities for students to develop their skills - activity stations where students choose which activity station to attend based on the skill(s) they need to work on (great way to use resource teacher)

- Think like a coach - Notice, during low floor - high ceiling tasks, skills that still require practice and provide a time-out for direct instruction and to practice skills - this may be differentiated but all should have skills to practice



Breakout Session

Break out group:

What suggestions can I give teachers to help them meet the diversity of student needs in the classroom?

- How have you responded to this question with your implementation?
- What questions/challenges do you still have?

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Resources to support implementation

[OAME/AFEMO](#) webinars, sample lesson plans, sample course plans

[TVO](#) webinars and supports

Elementary curriculum and imbedded teacher supports to see approaches to coding, financial literacy

[Webinars](#) on the curriculum site

Prior [Differentiated Instruction materials](#) for math

[Ébauche du guide sur le décloisonnement à l'intention des leaders des conseils scolaires](#)

[Document](#) du Conseil ontarien de la qualité de l'enseignement supérieur (COQES) - 20 pages

[Webinaire](#) CFORP - Les mathématiques, l'équité et vous

[Courte vidéo](#) sur le décloisonnement en Ontario (2 minutes)

Sample Task



Now we would like to share an example that touches on multiple strands and is low floor, high ceiling, with wide walls to show what this might look like.

Borrowing
money...
at what
cost?

“What do you
notice?”

“What do you
wonder?”



OAME, Math Curriculum Resource Project:

<https://docs.google.com/document/d/1sPL1aMBmKGnVZ7bKwg3Rlc9SBmda7wp0JSKKL6gBxvQ/edit#>

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Let's look at this problem that could be used by a teacher to teach new content, mathematical modeling, coding, financial literacy, and social emotional learning skills.

Teacher begins with a picture and asks students “What do you notice?” and “What do you wonder?”

Learning Goal: Making financial decisions about borrowing based on facts and data.

Sub-goals: Learning to solve problems involving percentages and decimals in a financial literacy context. Learning to use financial literacy vocabulary appropriately in context. Learning to collaborate with peers to create mathematical models, draw valid conclusions related to student's mathematical thinking.

Use Financial Literacy Vocabulary Appropriately in Context

Vocabulary Chart	
Sale price	
Tax rate	The sales taxes that will be applied to the cost of the car, expressed as a percentage
Tax amount	
Initial down payment	The payment to be made at the time of purchase
Amount of financing	
Duration of financing	The expected length of time to pay the amount borrowed, expressed in months or years.
Interest rate	
Interest amount	The portion of the total cost that reflects the interest on the loan.
Monthly payments	The amount of money to be paid per month.
Total cost	The total amount the car will cost, including the down payment, taxes and interest

Students can work in pairs or small groups. Teacher might review financial vocabulary with students beforehand. Teacher hand out a vocabulary and definitions chart. Students work collaboratively to develop the missing definitions. Students return to the large group to share the answers.

Predicting the Effect of the Change

Car buying situation		
Sale price	\$15,000	\$15,000
Tax rate	13 %	13 %
Initial down payment	\$1,500	\$3 ,000
Number of months	48	48
Interest rate	2.5 %	2.5 %

Car buying situation		
Sale price	\$15,000	\$15,000
Tax rate	13 %	13 %
Initial down payment	\$1,500	\$1,500
Number of months	48	96
Interest rate	2.5 %	2.5 %

Car buying situation		
Sale price	\$15,000	\$15,000
Tax rate	13 %	13 %
Initial down payment	\$1,500	\$1,500
Number of months	48	48
Interest rate	2.5 %	5.0 %

Car buying situation		
Sale price	\$15,000	\$30,000
Tax rate	13 %	13 %
Initial down payment	\$1,500	\$3,000
Number of months	48	48
Interest rate	2.5 %	2.5 %

Auto Loan Calculator	
Vehicle Sale Price (\$)	\$15,000.00
Tax Rate (%)	13.00
Down Payment (\$)	\$1,500.00
Financed amount (\$)	\$15,450.00
Number of Months	\$48.00
Interest Rate (%)	2.50
Total Cost	\$16,251.45
Monthly Payment	\$338.57

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Teacher gives each group a situation card and explain that each card has two sets of data, a baseline (2nd column), and a situation in which a variable was changed (3rd column). **The main goal** is to compare the effects that different interest rates, lengths of borrowing time, ways in which interest is calculated, and amounts of down payments have on the overall costs, using appropriate tools

Students might be asked to:

1. Predict the effect the change will have on the monthly car payment. (Students have to apply the critical thinking process)
2. Calculate monthly payment using the Auto Loan Calculator (for coding extension, students could use a spreadsheet or block coding software to create a new version of the problem)
3. Record how they feel about the results and the validity of their prediction
4. Compile their findings in a common table

What Changes? What Stays the Same



	Initial	1	2	3	4	5	6
Sale price	\$15,000						
Tax rate	13%						
Initial down payment	\$1,500						
Number of months	48						
Interest rate	2.5 %						
Amount of financing	\$15,450						
Payment per month	\$338.57						
Total cost	\$16,251.45						

Questions to ask:

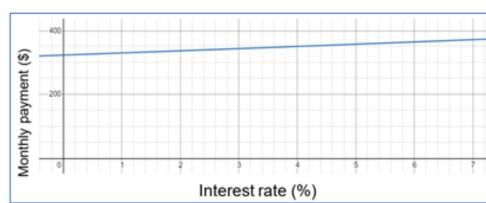
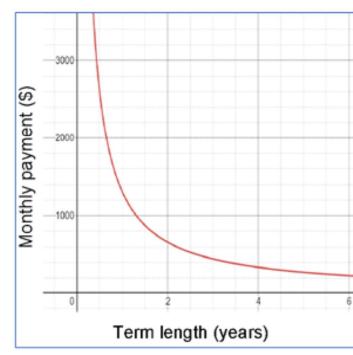
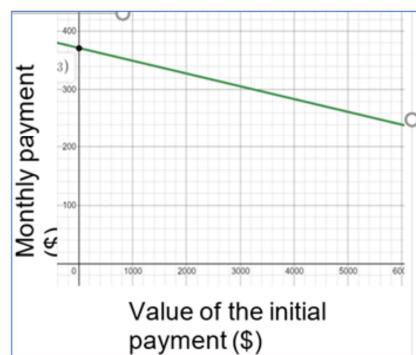
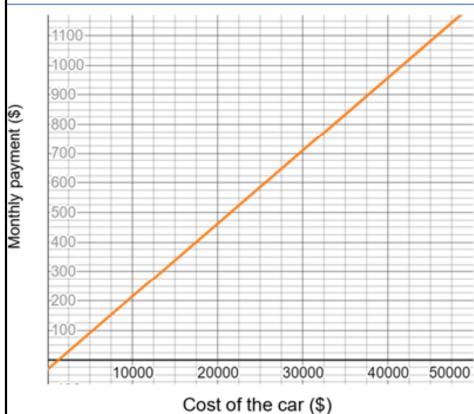
- What changes?
- What stays the same?
- What did you notice that surprised you?

Graph the relationship between the value of the monthly payment and each of the variables.

Students transfer their findings into the compilation table. Teacher remind students to observe what changes and what stays the same in each situation? What did you notice that surprised you?

Observe the relationship between the monthly payment and a variable, e.g., monthly payment and initial payment, or monthly payment and the interest rate, etc. Using a graphing software, (e.g., Desmos) graph the relationship between the value of the monthly payment and each of the variables.

Linear or Non-Linear?



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Questions to ask: Based on your observations, describe the effect of the interest rate on the monthly payment. Is it a significant or negligible effect?

According to the chart, what would be the advantage of choosing a 4-year term instead of a 6-year term?

What value is represented by the point of intersection between the line and the x axis?

How do you know this?

What do the points where the line intersects the x-axis and the y-axis mean?

As a large group, teacher could ask the following questions: What variable has the greatest impact on the monthly payment? What situation surprised you the most?

What questions should you ask the sales representative about costs when buying a car?

Curriculum Connections

AA1. develop and explore a variety of social-emotional learning skills in a context that supports and reflects their learning in connection with the expectations across all other strands

A2. make connections between mathematics and various knowledge systems, their lived experiences, and various real-life applications of mathematics, including careers.

B3.5 pose and solve problems involving rates, percentages, and proportions in various contexts, including contexts connected to real-life applications of data, measurement, geometry, linear relations, and financial literacy

C3.1 compare the shapes of graphs of linear and non-linear relations to describe their rates of change, to make connections to growing and shrinking patterns, and to make predictions

C4.1 compare characteristics of graphs, tables of values, and equations of linear and non-linear relations

D2.1 describe the value of mathematical modelling and how it is used in real life to inform decisions

F1.1 identify a past or current financial situation and explain how it can inform financial decisions, by applying an understanding of the context of the situation and related mathematical knowledge

F1.3 compare the effects that different interest rates, lengths of borrowing time, ways in which interest is calculated, and amounts of down payments have on the overall costs associated with purchasing goods or services, using appropriate tools



This lesson covers overall and specific expectations across 6 strands. i.e.,

Overall expectations by Strands

AA1. Social-Emotional Learning Skills

- A. Mathematical Thinking and Making Connections (**A2.** make connections between mathematics and various knowledge systems, their lived experiences, and various real-life applications of mathematics, including careers.)
- B. Number (**B3.5** pose and solve problems involving rates, percentages, and proportions in various contexts, including contexts connected to real-life applications of data, measurement, geometry, linear relations, and financial literacy)
- C. Algebra (**C4.1** compare characteristics of graphs, tables of values, and equations of linear and non-linear relations)
- D. Data (**D2.1** describe the value of mathematical modelling and how it is used in real life to inform decisions)
- E. Financial Literacy (**F1.1** identify a past or current financial situation and explain how it can inform financial decisions, by applying an understanding of the context of the situation and related mathematical knowledge)

Leçon - Emprunter de l'argent... à quel prix?



« Que remarquez-vous? »
« Que vous demandez-vous? »

AFEMO: Projet de Ressources Curriculaires Mathématiques:
<https://docs.google.com/document/d/1O6kERGDUG8xpea84FLQkUyvPqLVIBOPznl-58edOyk/edit>

ÉTUDES
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Examinons ce problème qui pourrait être utilisé par un enseignant pour enseigner de nouveaux contenus, la modélisation mathématique, le codage, la littératie financière et les compétences d'apprentissage socio-émotionnel.

L'enseignant commence par une photo et demande aux élèves : « Que remarquez-vous? » et « Que vous demandez-vous ? »

Objectif d'apprentissage : Prendre des décisions financières concernant l'emprunt en fonction de faits et de données.

Sous-objectifs : Apprendre à résoudre les problèmes liés aux pourcentages et aux décimales dans un contexte de littératie financière. Apprendre à utiliser le vocabulaire de la littératie financière de façon appropriée dans son contexte. Apprendre à collaborer avec des pairs pour créer des modèles mathématiques, tirer des conclusions valides liées à la pensée mathématique de l'élève.

Use Financial Literacy Vocabulary Appropriately in Context

Tableau du vocabulaire à l'étude	
Prix de vente	
Taux de taxes	Les taxes de vente qui seront appliquées sur le coût de la voiture, exprimé en pourcentage
Montant de taxes	
Paiement initial	Le paiement qui sera versé au moment de l'achat
Montant du financement	
Durée du financement	La durée prévue pour payer la somme empruntée, exprimée en mois ou en années.
Taux d'intérêt	
Montant d'intérêt	La portion du coût total qui reflète l'intérêt sur le prêt.
Paiement mensuel	La somme d'argent qui sera à remettre par mois
Coût total	Le montant total que coûtera la voiture, y compris le paiement initial, le montant des taxes et le montant de l'intérêt

Les élèves peuvent travailler en paires ou en petits groupes. L'enseignant peut revoir le vocabulaire financier avec les étudiants au préalable. L'enseignant remet un tableau de vocabulaire et de définitions. Les élèves travaillent en collaboration pour élaborer les définitions manquantes. Les élèves retournent dans le grand groupe pour partager les réponses.

Prédire l'effet du changement

Situation d'achat de voiture		
Prix de vente	15 000 \$	15 000 \$
Taux de taxe	13 %	13 %
Paiement initial	1 500 \$	3 000 \$
Nombre de mois	48	48
Taux d'intérêt	2,5 %	2,5 %

Situation d'achat de voiture		
Prix de vente	15 000 \$	15 000 \$
Taux de taxe	13 %	13 %
Paiement initial	1 500 \$	1 500 \$
Nombre de mois	48	96
Taux d'intérêt	2,5 %	2,5 %

Calculateur de prêt automobile	
Prix de vente du véhicule (\$)	\$15,000.00
Taux d'imposition (%)	13.00
Acompte (\$)	\$1,500.00
Montant financé (\$)	\$15,450.00
Nombre de mois	\$48.00
Taux d'intérêt (%)	2.50
Coût total	\$16,251.45
Paiement mensuel	\$338.57

Situation d'achat de voiture		
Prix de vente	15 000 \$	15 000 \$
Taux de taxe	13 %	13 %
Paiement initial	1 500 \$	1 500 \$
Nombre de mois	48	48
Taux d'intérêt	2,5 %	5,0 %

Situation d'achat de voiture		
Prix de vente	15 000 \$	30 000 \$
Taux de taxe	13 %	13 %
Paiement initial	1 500 \$	3 000 \$
Nombre de mois	48	48
Taux d'intérêt	2,5 %	2,5 %

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L'enseignant donne à chaque groupe une carte de situation et explique que chaque carte a deux ensembles de données, une ligne de base (2e colonne) et une situation dans laquelle une variable a été modifiée (3e colonne). L'objectif principal est de comparer les effets des différents taux d'intérêt, de la durée d'emprunt, des façons dont les intérêts sont calculés et des montants des acomptes sur les coûts globaux, à l'aide d'outils appropriés

On pourrait demander aux élèves de :

Prévoyez l'effet que le changement aura sur le paiement mensuel de la voiture. (Les élèves doivent appliquer le processus de pensée critique)

Calculer le paiement mensuel à l'aide du calculateur de

prêt auto (pour coder l'extension, les étudiants pourraient utiliser une feuille de calcul ou un logiciel de codage de bloc pour créer une nouvelle version du problème)

Notez ce qu'ils pensent des résultats et de la validité de leur prédiction

Compiler leurs résultats dans un tableau commun

Qu'Est-Ce Qui Change? Ce qui reste le même

Tableau de compilation						
	Initiale	1	2	3	4	5
Prix de vente	\$15,000					
Taux d'imposition	13%					
Acompte initial	\$1,500					
Nombre de mois	48					
Taux d'intérêt	2,5 %					
Montant du financement	\$15,450					
Paiement par mois	\$338.57					
Coût total	\$16,251.45					

Questions à poser:

- Qu'est-ce qui change?
- Qu'est-ce qui reste le même?
- Qu'avez-vous remarqué qui vous a surpris?

Représentez en graphique la relation entre la valeur du paiement mensuel et chacune des variables.

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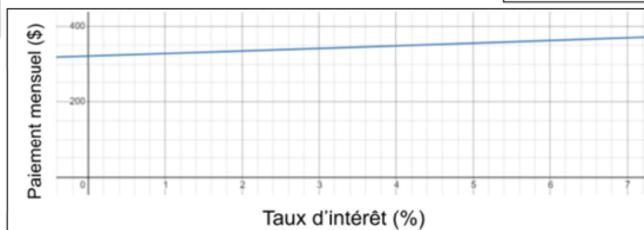
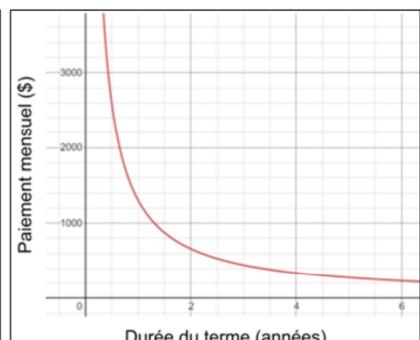
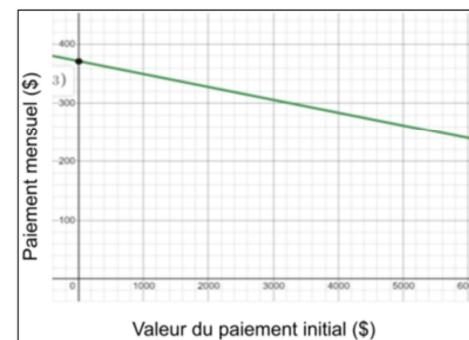
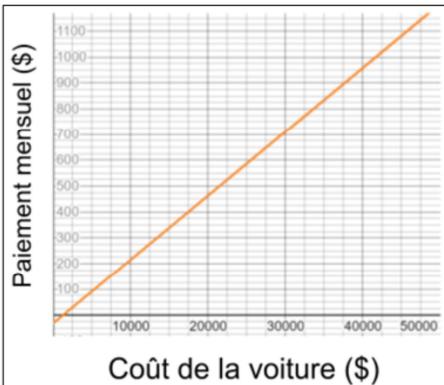
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Les étudiants transfèrent leurs résultats dans le tableau de compilation. L'enseignant rappelle aux élèves d'observer ce qui change et ce qui reste le même dans chaque situation?

Qu'avez-vous remarqué qui vous a surpris?

Observez la relation entre le paiement mensuel et une variable, p. ex., le paiement mensuel et le paiement initial, ou le paiement mensuel et le taux d'intérêt, etc. À l'aide d'un logiciel de graphiques (p. ex., Desmos), tracez la relation entre la valeur du paiement mensuel et chacune des variables.

Linéaire ou non linéaire?



Questions à poser : D'après vos observations, décrivez l'effet du taux d'intérêt sur le paiement mensuel. S'agit-il d'un effet significatif ou négligeable?

Selon le graphique, quel serait l'avantage de choisir un terme de 4 ans au lieu d'un terme de 6 ans?

Quelle valeur est représentée par le point d'intersection entre la ligne et l'axe des x ?

Comment le savez-vous?

Que signifient les points où la ligne coupe l'axe des x et l'axe des y ?

En tant que grand groupe, l'enseignant pourrait poser les questions suivantes : Quelle variable a le plus d'impact sur le paiement mensuel? Quelle situation vous a le plus surpris? Quelles questions devriez-vous poser au représentant commercial sur les coûts lors de l'achat d'une voiture?

Liens avec les programmes d'études

AA1. développer et explorer une variété de compétences d'apprentissage socio-émotionnel dans un contexte qui soutient et reflète leur apprentissage en relation avec les attentes dans tous les autres volets

R2. établir des liens entre les mathématiques et divers systèmes de connaissances, leurs expériences vécues et diverses applications réelles des mathématiques, y compris les carrières.

B3.5 pose et résout des problèmes liés aux taux, aux pourcentages et aux proportions dans divers contextes, y compris les contextes liés aux applications réelles des données, de la mesure, de la géométrie, des relations linéaires et de la littératie financière

C3.1 comparer les formes des graphiques des relations linéaires et non linéaires pour décrire leurs taux de changement, pour établir des liens avec les modèles de croissance et de rétrécissement, et pour faire des prédictions

C4.1 comparer les caractéristiques des graphiques, des tableaux de valeurs et des équations des relations linéaires et non linéaires

D2.1 décrire la valeur de la modélisation mathématique et la façon dont elle est utilisée dans la vie réelle pour éclairer les décisions

F1.1 identifier une situation financière passée ou actuelle et expliquer comment elle peut éclairer les décisions financières, en appliquant une compréhension du contexte de la situation et des connaissances mathématiques connexes

F1.3 comparer les effets des différents taux d'intérêt, de la durée d'emprunt, de la façon dont les intérêts sont calculés et des montants des acomptes sur les coûts globaux associés à l'achat de biens ou de services, à l'aide d'outils appropriés

Cette leçon couvre les attentes globales et spécifiques à travers 6 volets. c.-à-d.

Attentes globales de Strands

AA1. Compétences d'apprentissage socio-émotionnel

Pensée mathématique et établissement de liens (A2. établir des liens entre les mathématiques et divers systèmes de connaissances, leurs expériences vécues et diverses applications réelles des mathématiques, y compris les carrières.)

Nombre (B3.5 pose et résout des problèmes impliquant des taux, des pourcentages et des proportions dans divers contextes, y compris des contextes liés à des applications réelles des données, de la mesure, de la géométrie, des relations linéaires et de la littératie financière)

Algèbre (C4.1 comparer les caractéristiques des graphiques, des tableaux de valeurs et des équations de relations linéaires et non linéaires)

Données (D2.1 décrivent la valeur de la modélisation mathématique et la façon dont elle est utilisée dans la vie réelle pour éclairer les décisions)

Littératie financière (F1.1 cerner une situation financière passée ou actuelle et expliquer comment elle peut éclairer les décisions financières, en appliquant une compréhension du contexte de la situation et des connaissances mathématiques connexes)



Leadership Moves

Co-learning through sample lessons and assignments during math team meetings

Employing an exit ticket that asks teachers “what is one thing you will do differently as a result of today’s learning?”

Frequent check-ins with teachers and students (during and after the lesson)

Use as a lesson study (co-teacher, observe, debrief)

Debrief and discuss student work after the lesson is taught

Discuss how the lesson engages students in math processes

EDUCATIONAL LEADERSHIP PROJECT
LEADERSHIP IN ACTION
PRINCIPAL ASSOCIATION PROJECTS

Wrap Up

Professional Learning Network # 3

Date: February 17, 2022.

Time: 10:00 am – 11:00 am (English)
3:00 pm – 4:00 pm (français)

The focus will be on ***Assessment***

Please take a moment to give us
[feedback](#) - link will be in chat
window



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Thank you....