# Home Learning Activities: Week 9 

## Grade 7M - Mr. Methot

**Here are a variety of home learning opportunities for the week. Pick and choose which activities you'd like to do. I encourage you to engage in at least one math, science, or STEAM activity each day. I would suggest trying a mix of computer activities and hands-on learning activities. Happy learning!
**I haven't seen much photo or video evidence of your home learning lately. Just a reminder that I enjoy seeing what you are up to at home, so I invite you to continue sharing your work and creations on Teams with the class.
**We will continue to explore identifying the location of points on a Cartesian plane and plotting points on a Cartesian plane using all 4 quadrants. The focus this week will be shifted more towards creating and identifying shapes/designs on a Cartesian plane. Before you get started, check out the file titled "Les Plans Cartésiens" and the video below that help explain some important concepts.
https://www.youtube.com/watch?v=pv3_WsZGYNM - Le plan cartésien et les figures géométriques

## Math:

- Netmath - I added 4 new lessons for you to try. Log in at www.netmath.ca. Here is the order I would suggest working on the new lessons in:

1. Situer des points dans un plan cartésien 3
2. Situer des points ou figures géométriques dans un plan cartésien 1
3. Tracer des angles dans un plan cartésien
4. Tracer des figures dans un plan cartésien, connaissant les angles de ces figures

- Dreambox - There are 2 lessons assigned, and they are marked with a blue star. These lessons practice identifying and plotting points on a Cartesian plane. Log in information can be found in the document called "Dreambox 7M".
- Breakout EDU - I have added a third game that you can solve. This one focuses on coordinate points on a Cartesian plane. It is called "Benjamin Lewis and the Confederate Treasure". Log in at https://student.breakoutedu.com/login. Good luck!

Class code: RY71AF

- Problem of the Week - This week's problem: https://cemc.uwaterloo.ca/resources/potw/2019-20/French/POTWC-19-GS-ME-28-P-f.pdf

Solution to last week's problem: https://cemc.uwaterloo.ca/resources/potw/2019-20/English/POTWB-19-GS-17-S.pdf

- Scavenger Hunt - A fun activity to get outside and search for math objects! Check out the file titled "Chasse au Trésor de Maths".
- Creating Designs on a Cartesian Plane - In the document titled "Activités de dessiner avec un plan cartésien" there are a couple of art activities you can do on a Cartesian plane.
- Battleship - Using a Cartesian plane, plot 10 points scattered in the 4 quadrants. With a partner, take turns guessing the coordinates of your partner's plotted points. The winner will be the first player to identify the correct location of all 10 of their partners points. You can use graph paper to create Cartesian planes to add coordinate points. If you do not have graph
paper, you can use the Cartesian plane provided in the document titled "Plan cartésien (4 quadrants)"
- Map Activity - Using a Cartesian plane, you can create a map of an area that you are familiar with. Maybe you want to make a map of your house, or your neighborhood, or the school, or even the entire city of Miramichi. Plot points on your map to represent locations on your map. For example, if you decide to map out your neighborhood, you might have one point that represents your house, other points that represent your neighbors' houses, and even a point that represents a fire hydrant down the street. Once you have plotted all your points, you can add details by sketching buildings, houses, rooms, etc. and even colouring them. Lastly, identify the coordinate points of every point that you've plotted on your map. For example, your house might be plotted as $(-5,3)$ on your map.

You can use graph paper to create your map to add coordinate points. If you do not have graph paper, you can use the Cartesian plane provided in the document titled "Plan cartésien (4 quadrants)"

- Online Cartesian Plane Games - Here are some fun interactive games to enhance your understanding of identifying and plotting points in all four quadrants of a Cartesian plane.
https://www.mathnook.com/math/skill/coordinategridgames.php
- Textbook Questions - pg. 319 \#8,10,11,12,13

The answers are included below. You can use graph paper to create Cartesian planes to add coordinate points. If you do not have graph paper, you can use the Cartesian plane provided in the document titled "Plan cartésien (4 quadrants)"

## Découvre

Une droite numérique verticale et une droite numérique horizontale qui se coupent à angle droit au point ( 0,0 ) forment un plan cartésien.
L'axe horizontal est l'axe des $x$.
L'axe vertical est l'axe des $y$.
Les axes se coupent à l'origine, $(0,0)$.
Les axes divisent le plan en quatre quadrants.
Les quadrants sont numérotés dans le sens inverse des aiguilles d'une montre.


Dans un plan cartésien, on met une pointe de flèche au sommet de l'axe des $y$ et à l'extrémité droite de l'axe des $x$.

Une paire de coordonnées se nomme une paire ordonnée.

Tu n'as pas besoin d'écrire
le signe + pour une coordonnée positive.

Dans le quadrant 1, pour situer le point $A$, pars de 4 sur l'axe des $x$ et monte de 6 unités. Les coordonnées du point $A$ sont $(4,6)$.
Dans le quadrant 2 , pour situer le point $B$, pars de -4 sur l'axe des $x$ et monte de 6 unités. Les coordonnées du point $B$ sont $(-4,6)$.
Dans le quadrant 3 , pour situer le point $C$, pars de -4 sur l'axe des $x$ et descends de 6 unités. Les coordonnées du point $C$ sont $(-4,-6)$.
Dans le quadrant 4, pour situer le point $D$, pars de 4 sur l'axe des $x$ et descends de 6 unités. Les coordonnées du point $D$ sont $(4,-6)$.

8. Utilise du papier quadrillé à 1 cm .
a) Trace les points $A(-3,2)$ et $B(5,2)$. Relie les points afin de former le segment de droite $A B$. Quelle est la distance horizontale entre les points $A$ et $B$ ? Comment as-tu déterminé cette distance?
b) Trace les points $C(3,-4)$ et $D(3,7)$.

Relie les points afin de former le segment de droite CD.
Quelle est la distance verticale entre les points $C$ et $D$ ?
Comment as-tu déterminé cette distance?
9. Utilise la question 8 comme modèle.

Trace deux points sur l'axe horizontal ou vertical.
Échange tes points contre ceux d'une ou d'un camarade.
Détermine la distance horizontale ou verticale entre les points
de ta ou de ton camarade.
10. Objectif d'évaluation Utilise un plan cartésien.

Combien de parallélogrammes différents d'une aire de
12 unités carrées peux-tu construire?
Indique les sommets de chaque parallélogramme que tu construits.
11. a) Trace ces points dans un plan cartésien: $K(-15,20), L(5,20), M(5,-10)$
b) Détermine les coordonnées du point N qui forme le rectangle KLMN.
12. a) Trace ces points dans un plan cartésien: $A(16,-14), B(-6,12)$
et $C(-18,-14)$
Relie les points.
Quelle échelle as-tu utilisée? Explique ta réponse.
b) Détermine l'aire de $\triangle A B C$.
13. Va plus loin Les points $A(-4,4)$ et $B(2,4)$ sont deux sommets $d$ 'un carré.

Trace ces points dans un plan cartésien.
Quelles sont les coordonnées des deux autres sommets?
Écris le plus de réponses possible.

## Rêflechis

Comment tes connaissances sur les nombres entiers t'ont-elles été utiles pour situer des points dans un plan cartésien?

## Science:

- BrainPOP - Search for the topic "Structure Interne de la Terre". There are videos and quiz questions you can check out. Log in at www.fr.brainpop.com.

Username: Mr.Methot Password: Raiders2020

- Research Question of the Week - This week you will explore the $\underline{3}$ main layers that make up the Earth. On page 7 of the file "Earth's Crust" there is information about each of the layers, and you can research them on the Internet also.
- Model of the Earth - You can sketch out a coloured model of the Earth on paper if you want. Be sure to label the layers of your model. You could also find some materials around the house, such as modeling clay or Lego, to create a model of the Earth with its different layers. Some ideas are included in the link below. You can share pictures of your creations on Teams! (2)
https://www.steampoweredfamily.com/activities/10-layers-of-the-earth-projects-for-kids/


## STEAM:

- Week 9 Challenge - Check out the attached files. Feel free to try any of the other cross-curricular activities, including the numeracy activity. Have fun and share on Teams if you want!
- Volcanic Eruption - Here is a pretty cool step by step video that explains how to build your own volcano and the ingredients you can add to make it erupt! It could get messy however, so this would be a good activity to do outside perhaps.


## Videos:

- The Cartesian Plane - https://www.youtube.com/watch?v=25cZIdW3uw\&list=PLrt_BPgnOBnPGUt_eyUW55Qxfh4TJmOth\&index=3
- Plotting Points https://www.youtube.com/watch?v=kvjfxeOgOqU\&list=PLrt_BPgnOBnPGUt_ eyUW55Qxfh4TJmOth\&index=2
- Identifying Points https://www.youtube.com/watch?v=1zlJ9KSI_8U\&list=PLrt_BPgnOBnPGUt_ eyUW55Qxfh4TJmOth\&index=13
- University of Waterloo Lesson Videos - Here are some videos that can help explain this week's concepts. Check out lesson \#3 $\rightarrow$ "The Cartesian Coordinate System".
https://courseware.cemc.uwaterloo.ca/27? gid=85


## Textbook Answers

pg. 319: \#8,10,11,12,13
8. a) distance horizontale $\rightarrow 8 \mathrm{~cm}$ (unités)
b) distance verticale $\rightarrow 11 \mathrm{~cm}$ (unités)
10. Il y a plusieurs parallélogrammes différents que tu peux construire. Un exemple des sommets/points pour un parallélogramme sont:
$A(0,0) \quad B(4,0) \quad C(5,3) \quad D(1,3)$
11. Point $N \rightarrow(-15,-10)$
12. a) L'échelle est votre choix. Peut-être tu as choisi que chaque carré représente 2 unités.
b) L'aire d'un triangle $\rightarrow$ base $\times$ hauteur $\div 2$

L'aire du triangle $A B C \rightarrow 34 \times 26 \div 2 \rightarrow 442$ unités carrées
13. Il y a plusieurs réponses possibles. Voici des réponses possibles:
$C(2,10)$ et $D(-4,10)$
$C(2,-2)$ et $D(-4,-2)$
$C(-1,7)$ et $D(-1,1)$

https://twitter.com/gerritbosma9


Talk to you all Thursday @ 2pm!

