Home Learning Activities: Week 9

Grade 6J – 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 the types of angles, measuring angles, and estimating their measurements. This week we will also be looking at the angles of a triangle. Before you get started, check out the file titled "Les Angles**" and the videos below about angles and triangles that help explain some important concepts.

https://www.youtube.com/watch?v=ogo-jCiBw3g – Les types d'angles

https://www.youtube.com/watch?v=4ErcvECGWFQ&list=PLrt_BPqnOBnOcdSUQms-ry54RGqBv6072&index=3 – Estimer la mesure des angles

https://www.youtube.com/watch?v=3nuuxN2oOIw&list=PLrt_BPqnOBnOcdSUQms-ry54RGqBv6072&index=5 – Mesurer les angles avec un rapporteur

https://www.youtube.com/watch?v=GkXujDrfaAQ&list=PLrt_BPqnOBnOcdSUQms-ry54RGqBv6072&index=9 – La somme des angles d'un triangle partie 1

https://www.youtube.com/watch?v=eYFv7imvPao&list=PLrt_BPqnOBnOcdSUQms-ry54RGqBv6072&index=10 - La somme des angles d'un triangle partie 2

https://www.youtube.com/watch?v=1mwvswr129k&list=PLrt_BPqnOBnOcdSUQms-ry54RGqBv6072&index=11 - La somme des angles d'un triangle partie 3

Math:

- Netmath – I added 3 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. **Estimer la valeur des angles 1**
  2. **Comparer des angles 2**
  3. **Construire des angles de mesure donnée 2**

- Dreambox - There are 2 lessons assigned, and they are marked with a blue star. These lessons practice estimating the measure of angles and measuring angles using a protractor. Log in information can be found in the document called "Dreambox 6J".

- Breakout EDU – I have added a second game that you can solve. This one focuses on angles and measuring them using a protractor. It is called "Case of the Missing Jewels". Log in at https://student.breakoutedu.com/login. Good luck!

  Class code: P3KS95

- Problem of the Week – This week's problem: https://cemc.uwaterloo.ca/resources/potw/2019-20/French/POTWB-19-GS-23-P-f.pdf

  Solution to last week's problem: https://cemc.uwaterloo.ca/resources/potw/2019-20/French/POTWA-19-GS-11-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".

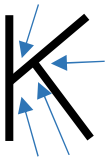
- Angles Found in the Environment – This week I want you to be observant for all the different angles that are surrounding you at home.

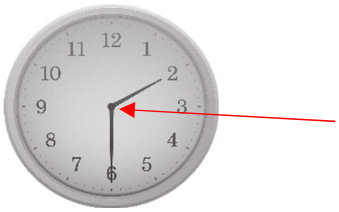
Explore around your house and outside for several examples of each type of angle that you can find. For example, a computer screen has a right angle (90°). You can take pictures of the items if you want and try to estimate the measure of each angle you find. Have fun with it and you will discover that angles are everywhere around you!

A couple of common examples of where angles can be seen and examined are in letters of the alphabet and on the hands on a clock:

- Using the capital letters of the alphabet, you can identify the types of angles in each letter and estimate the measurement of each angle.

- Using the hands on a clock, you can identify an angle at any time of day or night. And once again you can estimate the measurement of each angle.





Angle obtus

Environ 120°

- Online Angles Games – The first game is great for practicing using an interactive protractor to measure angles. The second game is a fun challenge to try and create angles using estimation and visualizing the sizes.

  https://www.mathplayground.com/rocket_angles.html
  https://www.mathplayground.com/alienangles.html

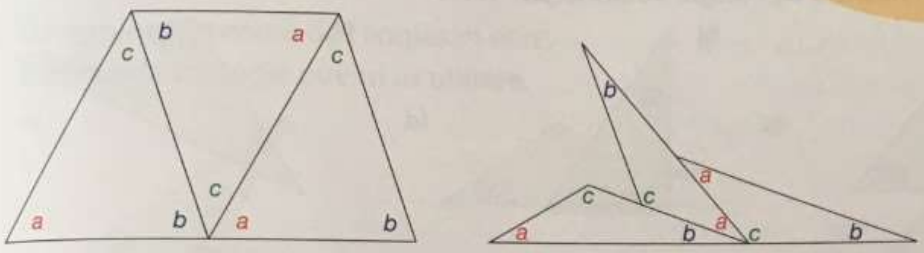
- Textbook Questions – pg. 148-149 #2,3,4,5,6,7,8
  The answers are included below.

Découvre

➤ Tu peux montrer que la somme des **angles intérieurs** d'un triangle est la même pour tous les triangles.

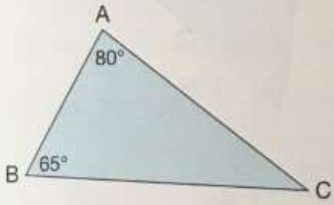
Un angle intérieur est un angle qui se trouve à l'intérieur d'un triangle ou de tout autre polygone.

Dispose 3 triangles congruents de la façon suivante.



Tu vois que les angles a, b et c forment un angle plat.
Donc, $a + b + c = 180°$.
La somme des angles intérieurs d'un triangle est de 180°.

➤ Tu peux utiliser la somme des angles d'un triangle pour déterminer la mesure de l'angle inconnu de ce triangle.



On nomme souvent un angle en utilisant la lettre de son sommet. Par exemple, l'angle de 80° du triangle ABC est ∠A.

La somme des angles d'un triangle est de 180°.
Donc, $\angle A + \angle B + \angle C = 180°$.
Puisque $\angle A = 80°$ et $\angle B = 65°$,
$80° + 65° + \angle C = 180°$ Additionne les angles.
$145° + \angle C = 180°$

Je peux compter pour le découvrir.

Résous l'équation par inspection.
Quel nombre additionnes-tu à 145 pour obtenir 180 ?
La mesure de $\angle C$ est de 35°.

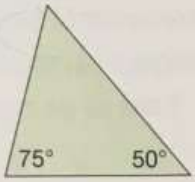
Pour vérifier ta réponse, trouve la somme des 3 angles.
$\angle A + \angle B + \angle C = 80° + 65° + 35°$
$= 180°$
Donc, la réponse est exacte.

À ton tour

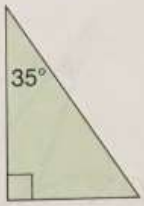
1. Construis 3 triangles sur du papier à points. Mesure et note chaque angle. Trouve la somme des mesures des angles pour chaque triangle.

2. Détermine la mesure de l'angle inconnu par calcul.

a)



b)



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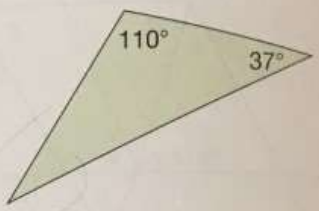
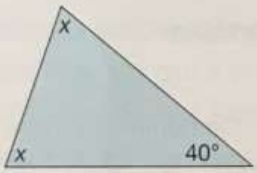
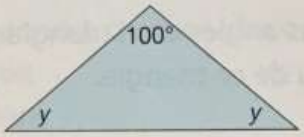


3. Les deux angles inconnus des triangles suivants sont égaux. Détermine la mesure de chaque angle inconnu par calcul. Explique la stratégie que tu as utilisée.

a)



b)



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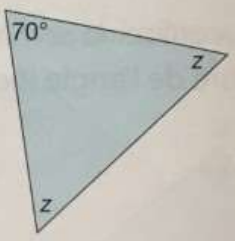
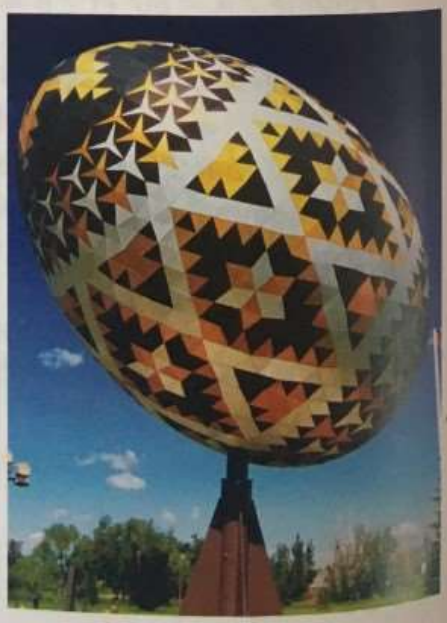


4. Deux angles d'un triangle sont connus. Détermine la mesure du troisième angle.
   a) 55°, 105°
   b) 45°, 90°
   c) 30°, 60°
   d) 25°, 125°

5. Vegreville, en Alberta, possède le plus gros œuf ukrainien du monde. Cet œuf est décoré de 1 108 figures triangulaires à 3 angles de mesure égale. Trouve la mesure de chaque angle. Explique ta stratégie.

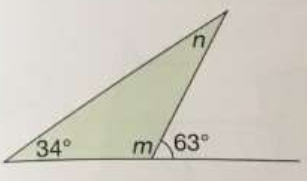


6. Un triangle peut-il posséder :
   a) plusieurs angles obtus ?
   b) 2 angles droits ?
   c) 3 angles aigus ?
   Explique ton raisonnement à l'aide de dessins et de mots.

7. Détermine la mesure de l'angle inconnu de chaque triangle décrit ci-dessous. Dessine ensuite le triangle.
Explique comment tu as déterminé chaque mesure.
   a) Un triangle avec deux angles qui mesurent 65° et 55°
   b) Un triangle avec deux angles égaux qui mesurent chacun 40°
   c) Un triangle rectangle avec un angle de 70°

8. Détermine la mesure des angles m et n.
Explique la stratégie que tu as utilisée.

a)



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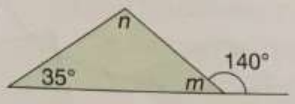

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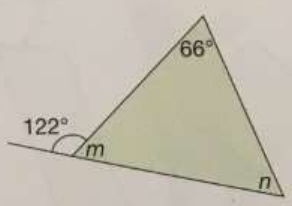
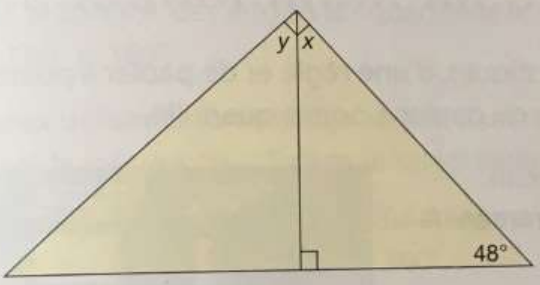
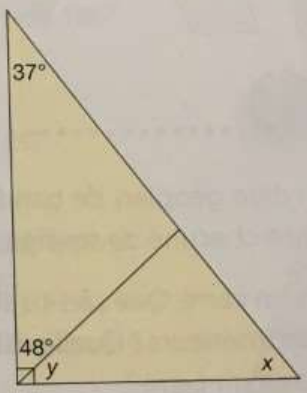


9. Détermine la mesure des angles x et y.
Montre ton travail.
Explique la stratégie que tu as utilisée.

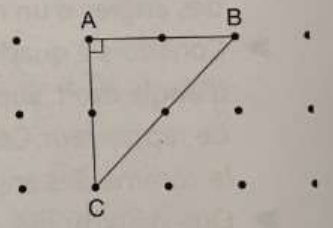
a)



b)



10. Utilise un géoplan et des bandes élastiques ou du papier à points quadrillé. Construis le △ABC.



   a) Trouve la mesure des angles inconnus.
   Vérifie tes réponses en mesurant avec un rapporteur.
   b) Prolonge $\overline{AB}$ de 1 unité vers la droite jusqu'à D.
   Prolonge $\overline{AC}$ de 1 unité vers le bas jusqu'à E. Relie D et E.
   c) Prédis la mesure de chaque angle dans le nouveau triangle. Utilise un rapporteur pour vérifier. Note ton travail.
   d) Répète deux autres fois les étapes b) et c).
   e) Que remarques-tu à propos de tous les triangles que tu as construits ?
   Explique ta réponse.

Réfléchis

Suppose qu'une ou un élève a raté la leçon d'aujourd'hui.
Explique-lui comment tu connais la somme des angles de tout triangle.

Science:

- Research Question of the Week – We will continue looking at flight, the forces of flight, and flying organisms such as birds and insects. **What is Bernoulli's principle? How does this principle impact the flight of insects, birds, or even large airplanes?** If you have researched this already, a pretty cool method of designing and testing aircrafts is through the use of wind tunnels. **How are wind tunnels used to help in the design process and testing process of various aircraft shapes?**

- Exploring Bernoulli's Principle – Here are some hands-on activities and situations that involve this principle. It explains why certain objects move the way they do. Very interesting and fascinating!

  1. Suspend two ping pong balls from a meter stick across two chairs at the same level, about 6–10 cm apart, and predict how the balls will move when you blow between them. Test your prediction to see what happens.

  2. With the fingers of both hands, hold a single sheet of paper just below your lower lip. Allow the paper to bend and hang downward, then blow across the top surface of the paper. What happens?

  3. Some real-life examples of Bernoulli's principle include the movement of a shower curtain after the shower is turned on, the way long hair will fly out an open window of a moving car, and throwing a baseball curveball. If you are curious to learn more, you can research these situations to learn more about why they occur and how they are affected by Bernoulli's principle.

- Insect Investigation – Explore outdoors for insects and see if you can catch a close view of their wing design and shape. You can try to take a picture to zoom in further on the details of the wings. If you want, you can also draw an insect that you believe has wings that are best designed for flying based on their shape. You can share pictures of your discoveries and findings on Teams! 😊

STEAM:

- Week 9 Challenge - Check out the attached files. Feel free to try any of the other cross-curricular activities. Have fun and share on Teams if you want!

Videos:

- How to Use a Protractor to Measure an Angle - https://www.mathplayground.com/mv_using_protractor.html

- How to Make a Homemade Paper Protractor - https://www.youtube.com/watch?v=XSLzcwTOsWk

- Bernoulli's Principle - https://www.youtube.com/watch?v=mgeIWXld9FU

Textbook Answers

pg. 148: #2,3,4,5,6

2. a) 180° - 75° - 50° = 55°

   b) 180° - 90° - 35° = 55°

   c) 180° - 110° - 37° = 33°

3. a) 180° - 40° = 140° ÷ 2 = 70° (x)

   b) 180° - 100° = 80° ÷ 2 = 40° (y)

   c) 180° - 70° = 110° ÷ 2 = 55° (z)

4. a) 180° - 55° - 105° = 20°

   b) 180° - 45° - 90° = 45°

   c) 180° - 30° - 60° = 90°

   d) 180° - 25° - 125° = 30°

5. 3 angles de mesure égale → triangle équilatéral → 60° + 60° + 60° = 180°

6. a) Non, c'est impossible. Plus qu'un angle obtus égale une somme d'angles qui est plus que 180°, alors ce n'est pas un triangle.

   b) Non, c'est impossible. 2 angles droits égalent une somme d'angles qui est 180°, et il faut ensuite ajouter un troisième angle, alors ce n'est pas un triangle.

   c) Oui, c'est possible. 3 angles aigus peuvent être égale à une somme d'angles qui est 180°, alors c'est un triangle. Un triangle équilatéral est un exemple.

pg. 149: #7,8

7. a) 180° - 65° - 55° = 60°

   b) 180° - 40° - 40° = 100°

   c) 180° - 70° - 90° (un triangle rectangle veut dire qu'il y a un angle droit) = 20°

8. a) 180° (angle plat) – 63° = 117° (*m*)

   180° (triangle) - 34° - 117° (*m*) = 29° (*n*)

   b) 180° (angle plat) – 140° = 40° (*m*)

   180° (triangle) – 35° - 40° (*m*) = 105° (*n*)

   c) 180° (angle plat) – 122° = 58° (*m*)

   180° (triangle) – 66° - 58° (*m*) = 56° (*n*)

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Good Luck with Week 2 of the Virtual Olympics!