

Home Learning Activities: Week 5

Grade 7M – Mr. Methot



*I am really loving our weekly class video calls on Microsoft Teams. It is great to see and hear from everyone together as a virtual class and it is something I look forward to every week. I hope all of you are enjoying our calls and having fun playing the Kahoot games too! 😊

*This week we are moving forward with **probability (la probabilité)**. Our focus is on understanding and identifying the **sample space (l'espace échantillonnal)** of a **probability experiment (expérience de probabilité)** involving **2 independent events (événements indépendants)**. The sample space of a probability experiment is the set of all possible outcomes for that experiment. Last week we examined the sample space for a single-event experiment such as flipping a coin or tossing a dice. If we think about the sample space of flipping a coin, there are just a couple of possible outcomes, so the sample space consists of 'heads' and 'tails'.

Now let's take our learning a step further, using 2 independent events instead of just one. Events are considered to be independent if the result of one does not depend on the result of the other. Let's think about flipping a coin once again, except now we will be flipping 2 coins, which is an example of a probability experiment involving 2 independent events. The coins are independent of each other because the result of the first coin flip has no influence on the result of the second coin flip. Let's say we flip both coins; the first one lands on 'heads' and the second one lands on 'tails'. This means for this trial of the experiment, the outcome would be **(heads, tails) or (h,t)** for short. If we go back to thinking about sample space, **(h,t)** is one of the 4 possible outcomes for this experiment with 2 independent events. The others would be **(h,h), (t,h), and (t,t)**. We can represent and organize the sample space for this experiment in a **tree diagram (diagramme en arbre)** or a **table (tableau)**.

Check out the attached file named "**L'espace Échantillonnal**" where I have shown some examples of both ways to represent the sample space for a probability experiment involving 2 independent events.

Here are some links to videos in French that can help you with understanding probability. The first couple videos relate to concepts we reviewed from last week about **theoretical and experimental probability (probabilité théorique et expérimentale)**. The final video relates to the example I created in the file "**L'espace Échantillonnal**":

<https://www.youtube.com/watch?v=6GMeXQnOvEw> (La Probabilité Théorique)

<https://www.youtube.com/watch?v=9PPgHjHeIMQ> (La Probabilité Expérimentale)

https://www.youtube.com/watch?v=6fQHtkoVxxg&list=PLrt_BPqnOBnNEP6o-RrYTW60Hwd_YKA4_&index=14 (Exprimer la Probabilité)

https://www.youtube.com/watch?v=sUU-x3ghlvA&list=PLrt_BPqnOBnNEP6o-RrYTW60Hwd_YKA4_&index=15 (Exprimer la Probabilité 2)

https://www.youtube.com/watch?v=6EE_J2Wzmkw&list=PLrt_BPqnOBnNEP6o-RrYTW60Hwd_YKA4_&index=6 (Les Diagrammes en Arbre)

Monday

- **Science videos:** Here are some videos you can watch related to earthquakes and volcanoes. There are lots of videos on YouTube as well that show live footage of earthquakes and volcanoes throughout the world caught on camera. They can be a little freaky to watch, but if you are feeling brave you can search for some.

<https://www.youtube.com/watch?v=npZLZ93uOKc> (tremblements de terre)

<https://www.youtube.com/watch?v=RP8QQEMFqps> (volcans)

- **Netmath questions:** Continue with the activities/lessons on www.netmath.ca. Here are the lessons you can focus on this week. If you complete all of these, you can always revisit incomplete lessons from past weeks.

1. Comparer la probabilité théorique ou expérimentale
2. Déterminer la probabilité d'événements 1

3. Comparer des probabilités d'événements

4. Introduction aux probabilités

Bonus: Les défis de Sonya (1)

Tuesday

- **Puzzles + games:** Here are a couple of new ones to try. You can always go back and revisit puzzles and card games from previous weeks that you enjoyed or want to complete.

1. **Breakout EDU game:** This week you can attempt to solve an online puzzle that requires you to use the clues to unlock a series of digital locks. It is lots of fun! The game focuses on the theme of probability.

To access the game, you will need to create a student account and join the class I've created. You will find the instructions to create your account in the file titled "**Breakout EDU Account Instructions**". Here is the class code: **RY71AF**. When you need to create a password, my suggestion is to use the same password that you use for Office 365. Once your account is created, you should see that you have joined Classe 7M. Click on the class, and you will see the game that I have assigned for you to play called "Cat Kid the Super Hero".

If you need some help solving the puzzles, I can provide you with some hints and explanations. I also have access to the combinations for each lock if you are stuck. Once you are finished the game, here are a few reflection questions that you can think about:

- a) Why was the probability of choosing a superhero wearing blue 1?
- b) Why was the probability of choosing a superhero shooting fire 0?
- c) How did you decide on the order to place the spinner discs in if the desired outcome is "Wow"?

2. **Yahtzee:** For this game you will need at least one other player and 5 dice. If you want to play but don't have the dice, you can make them out of paper! Here is a website that explains the rules and scoring process of the game, and also provides score sheets that can be downloaded and printed: <http://templatelab.com/yahtzee-score-sheets/>. There are also videos on YouTube that explain how to play.

You may not realize it, but this dice game allows you to use your probability skills when deciding which dice to roll a second and third time. Good luck!

Wednesday

- **STEAM challenge:** Your challenge this week is to conduct an investigation to determine the fastest way to melt ice cubes without adding heat. Be sure to only change one thing and control your variables! One idea might be to analyze how long it takes an ice cube to melt in a container with the lid on compared to an ice cube in a container without the lid on. There are several possibilities, so be creative! There is some information included in the attached file named "**Défi de STEAM semaine 4**". I have included the English version of the document as well with the name "**STEAM challenge week 4**". Be sure to use the third page for grades 6-8. I'd love to hear about your ideas so feel free to share on Teams with the class!
- **Numeracy activity:** You can also try the numeracy experiment to observe water displacement in a cup. This question is included in the same files as above.

Thursday

- **Netmath questions:** Continue with wherever you left off. If you happened to have completed all the activities/lessons that I've given you so far, then you can explore the website and find a new topic that interests you to try. Click

on "Livres" on the left-hand side of the screen to find all the different math topics.

Friday

- **"Dante's Peak" movie:** Here is a good movie with some live-action science that you can watch with older family members. It features a volcanic eruption from a dormant volcano that has suddenly woken up. The movie also includes an earthquake. Dante's Peak is currently on Netflix. It is an English movie, however one idea is to watch it with French subtitles. I hope you all get a chance to watch it!
- **Identifying sample space activity:** Similarly to the example of the probability experiment of flipping 2 coins, think of your own probability experiment that consists of 2 independent events. Now consider the sample space (all possible outcomes) for your experiment. Using a **tree diagram (diagramme en arbre)** and a **table (tableau)**, organize all the possible outcomes to show the sample space. You can share your experiment idea and sample space on Teams with the class!

Extras

- **Research question of the week:** This week instead of researching a question, I would like you to reflect on the movie Dante's Peak. **What did you think of the movie? What were your reactions to watching it? Did you learn something new?** You can share your thoughts/reflections about the movie on Teams!
- **Math problem of the week:** Each week I will give you a challenging math problem to try created by the University of Waterloo, good luck!
<https://cemc.uwaterloo.ca/resources/potw/2019-20/French/POTWB-19-DP-27-P-f.pdf>

Here is the solution to last week's problem:

<https://cemc.uwaterloo.ca/resources/potw/2019-20/French/POTWB-19-GS-28-S.pdf>

- **Irreducible fractions:** This video explains how you can reduce fractions to their simplest form until they cannot be reduced any further, such as reducing 50/100 to 1/2. <https://www.youtube.com/watch?v=axNfpdWP9J8>



Talk to you all Thursday @ 2pm!
Surprise Kahoot Game!



<https://twitter.com/gerritbosma9>