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Micropoems

Information for students

Micropoems take a big idea and make a statement with minimal text. The idea is to make a big impact with a minimum of 6 words and a maximum of 100.

This activity is based on the Very Small Verse Contest held every year by the League of Canadian Poets.

Read some examples here: http://poets.ca/awards/very-small-verse/

Now try it yourself!

- Think of four topics that speak to you. Topics linked to the current situation include social distancing, isolation, homeschooling. Feel free to focus on an entirely different topic as well.
- Write four micropoems.
- Try to paint a picture of each topic with words.
- Cut out any extraneous words.
- Take it to the next level and post your poetry on Instagram!

Materials required

- Device with Internet access.
- Paper, pen or pencil, phone, tablet or computer.

Information for parents

Above all, this activity is designed to be simple. We hope it will appeal to your child whatever their grade level. The best things your child can do are:

- Read every day.
- Write every day.
- Talk every day.

Mai, le mois de l'arbre

Information for students

Cette semaine, on t'invite à réfléchir sur les arbres et le soin qu'on doit en prendre.

- Lire la courte histoire de Marie-France Auger des Éditions M@Griffe: Crime à Buntzen Lake.
- Admire l'œuvre du peintre canadien Tom Thomson Dans le nord
- Pour en apprendre plus sur le sujet : https://safeyoutube.net/w/tEfE Malgré le titre, il s'agit d'un documentaire sur la forêt.
- Tu veux en savoir un peu plus sur la forêt du Québec? Viens voir ici!
- Note dans un cahier tes réactions face au mauvais traitement fait aux arbres.
- Qu'en penses-tu ? En as-tu déjà vu ? Fais des liens avec d'autres textes, toi, le monde.
- Dans un cahier, note tes réactions face à ce que tu as lu, vu ou entendu. Fais des liens entre les différentes œuvres, textes ou vidéos.

Materials required

- Un appareil avec accès à l'internet
- Un dictionnaire bilingue français/anglais
- Papier, du matériel pour écrire et dessiner

Information for parents

- Help your child find the links to the suggested reading, the painting and the video.
- Read the instructions with your child, if necessary.
- Discuss the topic with your child.

Find the Mistake[1]

Information for students

This task will help you strengthen your understanding of the laws of exponents.

Instructions

- Examine the expressions provided in Appendix A – Find the Mistake.
- Identify the four (4) INCORRECT expressions.
- For each INCORRECT expression, identify the mistake and apply the reasoning needed to correct it.
- If the expression is CORRECT, explain (show) why it is correct.

Materials required

- Appendix A – Find the Mistake
- Writing materials
- Calculator

Information for parents

About the activity

Children should:

- complete the activity on their own
- refer to various sources to review the laws of exponents (class notes, textbooks, internet sources, etc.)

Parents could:

- help the children organize the required materials, if necessary
- read the instructions to the children, if necessary
- have the children explain how they went about determining which statements were correct and incorrect and ask them to explain why

[1] Task adapted from Andrew Stadel, "Thank You Math Mistakes," April 16, 2013, http://mr-stadel.blogspot.com/2013/04/thank-you-math-mistakes.html

Appendix A – Find the Mistake

Information for students

This task will help you strengthen your understanding of the laws of exponents.

Instructions

- Examine the expressions below.
- Identify the four (4) INCORRECT expressions.
- For each INCORRECT expression, identify the mistake and apply the reasoning needed to correct it.
- If the expression is CORRECT, explain (show) why it is correct.

1. $z^5 \cdot z \cdot z^7 = z^{12}$

2. $(4g)^{-3} = \frac{1}{64g^3}$

3. $\frac{(-4)^7}{(-4)^4} = 64$

4. $(5pq)^3 = 125pq$

5. $\frac{3^5}{3^9} = \frac{1}{81}$

6. $(-20x^3)^2(x^7) = 400x^{13}$

7. $\left(\frac{x^2}{3y^3}\right)^2 = \frac{x^4}{9y^6}$

8. $(4x^{-2}y^3)^{-3} = \frac{x^6y^9}{64}$

Appendix B – Solutions

Equation	Answer
$z^5 \cdot z \cdot z^7 = z^{12}$	INCORRECT The *Law of Products with the Same Base* states that when multiplying like bases, keep the base the same and add the exponents ($x^a \cdot x^b = x^{a+b}$). According to this law, the equality should be: $z^5 \cdot z \cdot z^7 = z^{5+1+7} = \boldsymbol{z^{13}}$
$(4g)^{-3} = \frac{1}{64g^3}$	CORRECT This equation is based on the *Law of Negative Exponents* as well as the *Law of Product to a Power*. The Law of Negative Exponents states that negative exponents signify division. In particular, find the reciprocal of the base ($x^{-a} = \frac{1}{x^a}$). The Law of Product to a Power states that when raising a product to a power, distribute the power to each factor ($(xy)^a = x^a y^a$). According to these laws, the expression on the left can be simplified as follows: $(4g)^{-3} = \frac{1}{(4g)^3} = \frac{1}{4^3 \cdot g^3} = \frac{1}{64g^3}$
$\frac{(-4)^7}{(-4)^4} = 64$	INCORRECT The *Law of Quotients with the Same Base* states that when dividing like bases, keep the base the same and subtract the exponent of the denominator from the exponent of the numerator ($\frac{x^a}{x^b} = x^{a-b}$). According to this law, the equality should be: $\frac{(-4)^7}{(-4)^4} = (-4)^3 = (-4)(-4)(-4) = -64$

$(5pq)^3 = 125pq$	INCORRECT The *Law of Product to a Power* states that when raising a product to a power, distribute the power to each factor ($(xy)^a = x^a y^a$). According to this law, the equality should be: $(5pq)^3 = 5^3 \cdot p^3 \cdot q^3 = 125p^3q^3$
$\frac{3^5}{3^9} = \frac{1}{81}$	CORRECT The *Law of Quotients with the Same Base* states that when dividing like bases, keep the base the same and subtract the exponent of the denominator from the exponent of the numerator ($\frac{x^a}{x^b} = x^{a-b}$). The *Law of Negative Exponents* states that negative exponents signify division. In particular, find the reciprocal of the base ($x^{-a} = \frac{1}{x^a}$). According to these laws, the expression on the left can be simplified as follows: $\frac{3^5}{3^9} = 3^{5-9} = 3^{-4} = \frac{1}{3^4} = \frac{1}{81}$
$(-20x^3)^2(x^7) = 400x^{13}$	CORRECT This equation is based on the *Law of Products with the Same Base* as well as the *Law of a Power to a Power*. The Law of Products with the Same Base states that when multiplying like bases, keep the base the same and add the exponents ($x^a \cdot x^b = x^{a+b}$). The Law of a Power to a Power states that when raising a base with a power to another power, keep the base the same and multiply the exponents ($(x^b)^a = x^{ab}$). According these laws, the expression on the left can be simplified as follows: $(-20x^3)^2(x^7) = (-20)^2(x^3)^2(x^7) = 400x^{2\cdot3}x^7 = 400x^6x^7 = 400x^{6+7} = 400x^{13}$
$\left(\frac{x^2}{3y^3}\right)^2 = \frac{x^4}{9y^6}$	CORRECT This equation is based on the *Law of a Power to a Power*. The Law of a Power to a Power states that when raising a base with a power to another power, keep the base the same and multiply the exponents ($(x^b)^a = x^{ab}$). According to this law, the expression on the left can be simplified as follows: $\left(\frac{x^2}{3y^3}\right)^2 = \frac{(x^2)^2}{(3)^2(y^3)^2} = \frac{x^{2\cdot2}}{9y^{3\cdot2}} = \frac{x^4}{9y^6}$
$(4x^{-2}y^3)^{-3} = \frac{x^6y^9}{64}$	INCORRECT This equation is based on the *Law of Negative Exponents* as well as the *Law of Product to a Power*. The Law of Negative Exponents states that negative exponents signify division. In particular, find the reciprocal of the base ($x^{-a} = \frac{1}{x^a}$). The Law of Product to a Power states that when raising a product to a power, distribute the power to each factor ($(xy)^a = x^a y^a$). According to these laws, this equality should be:

	$(4x^{-2}y^3)^{-3} = \frac{1}{(4x^{-2}y^3)^3} = \frac{1}{4^3(x^{-2})^3(y^3)^3} = \frac{1}{64(x^{-2\cdot3})(y^{3\cdot3})} = \frac{1}{64x^{-6}y^9} = \frac{x^6}{64y^9}$

At the Heart of it All

Information for students

The pulsing and relentless beating of the heart is critical to human life. The heart's main purpose is to pump blood throughout the body to supply cells and tissues with the nutrients and oxygen they need to survive. Oxygen-poor blood is taken into the heart and pumped to the lungs where it picks up oxygen. It then travels back to the heart before being pumped to cells throughout the body. A great visual of this can be seen on Nova online.

This week we will explore the basics of the circulatory system by looking a little more in-depth at the wonder that is the heart. You will build your own model and then design your own experiment to see how exercise affects your heart rate.

Did you know?

- The aorta is almost the diameter of a garden hose. Capillaries, however, are so small that it takes ten of them to equal the thickness of a human hair.
- Your body has approximately 5.6 L of blood, which travels through your body about 3 times per minute.
- If you are a kid, your heart is about the size of one fist. If you are an adult, it is about the size of two fists.
- Your heart beats about 100,000 times per day and will pump about 160,000,000 L of blood during your lifetime.
- The heart acts as a hydraulic pump. Recently, Swedish researchers demonstrated how important the structure and size of the atria compared to the ventricles is in order for the heart to behave like a hydraulic pump. For a great demonstration, watch KTH Royal institute of Technology

Materials required

Activity 1: Model of Heart

- 3 water bottles
- 2 bottle caps (that fit on the water bottles)
- 4 bendy straws
- 3 cups water
- tape
- playdough
- red dye (optional)

Activity 2: Heart Rate Experiment

- timer
- partner(s)
- exercise activity (of your choice)

Information for parents

About the activity

Children should:

- review some of their notes regarding the workings of the heart prior to starting the activity
- work in an area that is easy to clean up since activity 1 may result in some spills
- work with a sibling/parent to conduct the experiment in activity 2
- make certain to design the entire experiment in activity 2 before conducting it

Parents can:

- be prepared to be asked to act as a “control” for their child’s experiment
- encourage their child to work on extension questions and look at linked videos/information
- discuss the importance of a healthy heart with their child and ways to achieve having one

Appendix A – Building a Heart Model[2]

Information for students

Build your own heart model using the procedure below.

Procedure:

1. Make 1 straw-sized hole and 1 small hole in bottle cap no. 1.
2. Make 2 straw-sized holes in bottle cap no. 2.
3. Add 5 – 8 drops of red dye to the water (optional).
4. Fill two of the water bottles with water. Make sure to fill each bottle ¾ of the way.
5. Put bottle cap no. 1 on the first bottle and bottle cap no. 2. on the second bottle, making sure to leave the 3rd bottle open.
6. Take 2 bendy straws and join them at the shorter ends by inserting one straw into the other. Secure them with tape. Repeat with the other set of bendy straws.
7. Insert the straws into the bottles so that all three bottles are connected.
8. Finally, use the playdough to create a seal and make certain bottle no. 2 is air tight.
9. The first bottle represents the atrium, the second the ventricle and the third represents the body.
10. To pump “blood”, pinch the taped portion on the straws between bottle no. 1 (atrium) and bottle no. 2 (ventricle) and squeeze bottle no. 2 (ventricle). You should see the “blood” rush into the 3rd bottle.

Extension:

a) No model is perfect. How could you modify this model to make it represent a real heart more accurately? (Possible answers are provided in Appendix C)

[2] Activity adapted from Wise Wonders Science & Discovery Museum, “How to Build a Model Heart – Wise Wonders,” YouTube video, 2:28, August 2, 2019 https://www.youtube.com/watch?v=tqMBLWABMAE

Appendix B – Exercise and Heart Rate[3]

Information for students

Design and conduct your own experiment on how exercise affects your heart rate

Procedure:

1. Make sure you know how to check your pulse. (Place two fingers between the bone and the tendon over your radial artery located on the thumb side of your wrist. Count the number of beats in 15 seconds. Multiply this number by four to calculate your beats per minute.)
2. Make a plan of how you will investigate how exercise affects your pulse. What will be your independent variable? Dependent Variable? Control Group?
3. Write out your procedure. Consider what data you will collect. How will you organize this data in a table?
4. Conduct your experiment. Collect your data.
5. Finally, write up a conclusion. Such a conclusion would include confirming or rejecting your hypothesis as well as evidence (data) from the experiment linked to the scientific concepts.

Extension:

a) List some activities that will increase a person's heart rate. Why is it beneficial for the heart to beat faster in response to these stimuli? (Possible answers are provided in Appendix C)

b) Are there times we would want to decrease a person's heart rate? List some activities that can help in decreasing the heart rate. (Possible answers are provided in Appendix C)

[3] Activity adapted from "Heart Rate Lab," NGSS Biology, accessed May 8, 2020, https://www.ngsslifescience.com/science.php?/biology/lessonplans/C404/

Appendix C – Possible Answers

Information for students

Below are some possible answers to the “Extension” sections of activities 1 and 2.

Activity 1

a) Many changes could be made to represent the heart more accurately. First, since the model shows only half of what the heart does (that is, pump blood to the body) it would be necessary to add the second half to the model. This would mean adding the second pump that exists in the heart, which pumps de-oxygenated blood to the lungs. A second change could be made to add the valves that regulate blood flow between the atria, ventricles, aorta, and lungs. (As with any models, many other possible changes can be made besides these.)

Activity 2

a) The heart beats faster during certain activities to allow for an increased cardiac output (i.e. blood flow to the muscles). When muscle activity is increased, more oxygen is consumed so an increased blood delivery (carrying oxygen) is necessary to replace the depleted oxygen. Also, increased muscle activity means the muscles themselves have increased compounds they must get rid of. These waste products need to be carried away from the muscles at the same time and so an increased blood flow will assist in getting rid of the waste.

b) We sometimes get a spike in our heart rate due to stressors we encounter. Stress can send hormones like adrenaline and cortisol racing through our blood, which increases our heart rate. To lower your heart rate so that it goes back to being within normal range, there are a few things that you can do: relax (yoga and meditation), vagal maneuvers (e.g. hold your nose and breathe through your mouth), which are used to treat a heart rate of more than 100 beats/min, and long term activities (e.g. eat more fish, exercise). In essence, it is definitely possible to lower your heart rate.

Reflect on Beauty Standards and Get Moving!

Information for students:

Activity 1: “I’ve had it with . . .”

- Watch this video (58 seconds). While the video is in French, the message is equally relevant in English.
- What are your thoughts after watching the video? What aspects of society’s beauty standards frustrate you? What strategies do you use to navigate the messages that society and mass media often promote about physical appearance?
- Discuss the topic with a friend or family member.

Activity 2: High Intensity Interval Training (HIIT)

- What do you know about High Intensity Interval Training? Watch the first 4 minutes of this video to learn more about HIIT and the proven benefits of this type of exercise.
- Based on your current level of personal fitness, complete one of the following HIIT workouts:
  - Beginner
  - Intermediate
  - Advanced
- Remember that technique comes before intensity. Practise the movement first to make sure you can do them with the proper technique. In addition, stop the repetitions if you feel that you are too tired to complete the movements with proper technique.

To view these activities in a Google Slide format in French, consult the *Reste actif!* website.

Materials required

- None

Information for parents

About the activity

Children should:

- reflect on society's beauty standards
- learn about High Intensity Interval Training (HIIT) and complete a HIIT workout

Parents could:

- discuss stereotypes in sports with their children
- learn how to juggle together with their children

Dialogue: A Chairy Tale

Information for students

A dialogue is usually a conversation between two people... but can it occur between a person and an object?

Watch the award-winning NFB short film by Norman McLaren and Claude Jutra titled *A Chairy Tale* and complete the activity in the appendix!

Materials required

- Device with Internet access
- Paper, writing, and drawing materials
- Art materials (if necessary)
- Music and/or instruments (if necessary)
- Chair (if necessary)
- Space to move and create
- iPod/CD Player/Bluetooth speakers

Information for parents

About the activity

Link to the NFB short film *A Chairy Tale*: https://youtu.be/NSRjRctL8XA

Children should:

- View the video, reflect upon the questions, create their own ending, and interpret the story from the perspective of either character

Parents could:

- Have a discussion with your child about their thoughts throughout the process
- Act as an audience member or be a character for their piece

Appendix: A Chairy Tale

Information for students

In 1957, the National Film Board produced *A Chairy Tale*. This short film combines dance, dramatic arts, music, and visual arts. It was nominated for an Academy Award (Oscar) and won a BAFTA. *A Chairy Tale* was directed by Norman McLaren and Claude Jutra, with music by Ravi Shankar and Chatur Lal.

Part A: Interpret

Watch the first four minutes of *A Chairy Tale*. While watching the film, take a note of the following:

- Identify the characters in the story.
- What is the story about?
- How are the characters feeling?
- What techniques are used to help portray the characters and help convey the plot?
- How did the music help convey the story?
- What are your thoughts on the music that was used?

A Chairy Tale

Part B: Exploring Outcomes

What do you think will happen to the characters? Create your own ending to the story. Here are some possibilities to consider:

What sort of script would you add to the film?

Replace the chair with a dancer. What sort of dance would you create and how would it relate to the man?

Create your own composition or arrangement to the music

Would you keep the piece in black and white? Perhaps add an accent colour? How does this affect the message of the piece?

Would there be changes to the costumes and lighting?

Part C: Conclusion

Watch the ending of *A Chairy Tale*. Did it meet your expectations? Does it change your interpretation?

How does this film relate to interpersonal relations?

1760-1791 – The Conquest and the Change of Empire

Information for students

Following the Conquest of New France, the newly established Province of Quebec was now controlled by the British. The first constitution under the British regime was implemented in 1763. The second constitution under the British regime was implemented in 1774.

- Determine the changes and continuities between the *Royal Proclamation* of 1763 and the *Quebec Act* of 1774.
  - Outline the administrative structure under the *Royal Proclamation* of 1763.
  - Outline the administrative structure under the *Quebec Act* of 1774.
  - Using the documents, complete the table in **Appendix 1**
  - In addition to the documents, you may use your textbook, workbook or the following website as a guide:
  - https://www.thecanadianencyclopedia.ca/en/article/royal-proclamation-of-1763
  - Write a short text that identifies the elements of **continuity** in the space provided in the table in **Appendix 1.**
  - Write a short text that identifies the elements of **change** in the space provided in the table in **Appendix 1.**
- Take it to the next level:
  - Take your analysis further by researching and answering the following questions:
    - What caused the British to replace the *Royal Proclamation* of 1763 with the *Quebec Act* of 1774?
    - What actions, actors or events may have contributed to the implementation of the Quebec Act of 1774?

Materials required

Useful resources, depending on personal preferences and availability:

- Device with Internet access
- Writing materials (paper, pencil, etc.)
- Textbook or workbook

Information for parents

About the activity

Children could:

- Add to their knowledge by doing the extra activity suggested above.
- Learn more about the early history of the Province of Quebec by watching the following video: Canada: A People's History - Episode 4 - Battle for a Continent

Parents should:

- Discuss the ideas presented and review potential answers with their child.

Appendix 1 – Determine Changes and Continuities

Information for students:

Examine the documents and complete the table that follows.

The Royal Proclamation, 1963

Province of Quebec, 1763

Canadian History Project
http://www.canadahistoryproject.ca/1774/index.html

T

The Royal Proclamation, by abolishing French civil laws, put the seigneurial system in jeopardy and eliminated the legal requirement to pay the tithe to the Roman Catholic Church; as a consequence, two important social institutions of Quebec were threatened. The introduction of a legal system foreign to the people of Quebec constituted a major attack on their culture, as legal systems inevitably reflect a vision of the world peculiar to the culture that [has] created them. The reduction of the territory to the St. Lawrence Valley also showed a lack of understanding of local conditions as the economy rested on the fur trade which required a large territory to operate efficiently, and the control of the Great Lakes'-St. Lawrence system was essential to its proper functioning. The introduction of the test oath, and the resulting exclusion of the Canadiens from all positions connected to the government of the colony, rendered efficient government impossible as the Canadiens remained the vast majority of the population for decades.

Royal Proclamation (1763) Claude Bélanger, Department of History, Marianopolis College
http://faculty.marianopolis.edu/c.belanger/quebechistory/readings/royal.htm

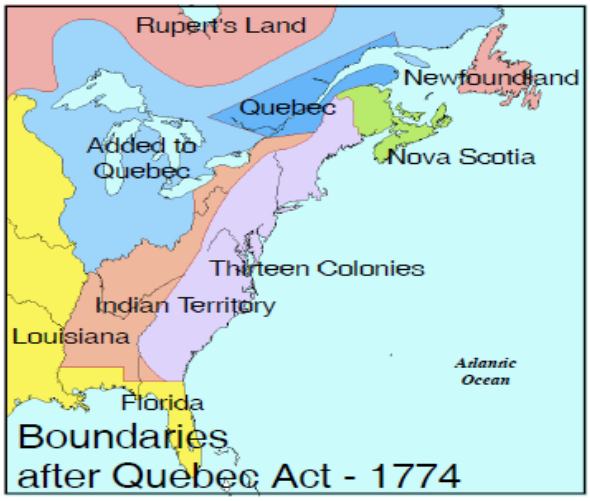
A legislative assembly was not implemented under the *Royal Proclamation*…British civil and criminal laws were applied…The clergy was left without any leadership as the bishop had died and the appointment of a new one was prohibited… English was the sole language to be used by the administration, even though the population spoke only French..

Marie-Andrée Courval, Luc Dujardin, and Guylène Labonté, *Journeys: Origins to 1840*, Secondary III (Anjou: Les Éditions CEC, 2018), Content Workbook, 140.

The Royal Proclamation aimed to assimilate the French-speaking population. English laws, customs and practices were established in the colony. It was hoped that a massive influx of English-speaking Protestant settlers would follow. The local French-speaking population was expected to assimilate in order to survive.

The Canadian Encyclopedia
https://www.thecanadianencyclopedia.ca/en/article/quebec-act

The *Quebec Act*, 1774



Canadian History Project
http://www.canadahistoryproject.ca/1774/index.html

To k

To keep the church happy, Roman Catholics were given political and religious freedoms that they wouldn't have in Great Britain for another 50 years. French language rights were recognized and French civil law continued to apply in local disputes so that the seigneurs could retain their traditional judicial powers. British law would be used only in criminal cases.

Canadian History Project
http://www.canadahistoryproject.ca/1774/index.html

The Quebec Act was intended to appease French Canadians and to gain their loyalty…The Roman Catholic Church could now legally collect tithes. The seigneurial system was also re-established…French-speaking Catholics were no longer barred from running the affairs of the colony. They were only required to swear an oath of allegiance to the king, which made no mention of one's religious affiliation (unlike under the previous Test Act)…An assembly [however] was never created…

The Canadian Encyclopedia
https://www.thecanadianencyclopedia.ca/en/article/quebec-act

Outline the administrative structure under the *Royal Proclamation* of 1763 and the administrative structure under the *Quebec Act* of 1774.

	***ROYAL PROCLAMATION* 1763**	***QUEBEC ACT* 1774**
MAIN GOAL		
TERRITORIAL BOUNDARIES		
DIVISION OF LAND		
RELIGION		
LAWS		
LANGUAGE		
COLONIAL ADMINISTRATION		

Compare the *Royal Proclamation* of 1763 and the *Quebec Act* of 1774. Write a short text that identifies the elements of CONTINUITY and a short text that identifies the elements of CHANGE in the appropriate space below.

Elements of CONTINUITY	
Elements of CHANGE	

Appendix 2 – Answer Key

Outline the administrative structure under the *Royal Proclamation* of 1763 and the administrative structure under the *Quebec Act* of 1774.

- Answers will vary

	***ROYAL PROCLAMATION* 1763**	***QUEBEC ACT* 1774**
MAIN GOAL	To assimilate the *Canadiens*	To appease or gain the loyalty of the *Canadiens*
TERRITORIAL BOUNDARIES	Small Reduced to the area surrounding the St. Lawrence Valley	Enlarged Extended to include the Great Lakes
DIVISION OF LAND	Township system replaced the seigneurial system Seigneurial system was tolerated	Seigneurial system is fully reinstated
RELIGION	Protestantism replaces Catholicism Tithe is abolished Appointment of a new bishop is prohibited	Catholicism regained its privileges Could now collect the tithe
LAWS	British criminal and civil law	French civil law British criminal law
LANGUAGE	Most of the population spoke French but the official language of administration was English	French language rights were recognized
COLONIAL ADMINISTRATION	A legislative assembly was not implemented Had to comply with the *Test Act*	*Canadiens* no longer barred from running the affairs of the colony They were only required to swear an oath of allegiance to the king rather than comply with the *Test Act* A legislative assembly was not implemented

Compare the *Royal Proclamation* of 1763 and the *Quebec Act* of 1774. Write a short text that identifies the elements of CONTINUITY and a short text that identifies the elements of CHANGE in the appropriate space below.

- Answers will vary
- Texts should include the following points:

CONTINUITY	• British Civil law • A legislative assembly was not implemented
CHANGE	• Attempt to gain the loyalty of *Canadiens* rather than assimilate them • Many rights of the *Canadiens were reinstated:* ➢ Seigneurial rights ➢ Rights of the Catholic Church (can collect the tithe) ➢ French civil law ➢ French language rights • *Canadiens* could not run for public office (swear an oath of allegiance to British king rather than the *Test Act*, which was abolished)