SECONDARY V
Week of June 15, 2020

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Food: Other Places, Other Times

Information for Students

When we reflect on all the ways a new place might be different, including how people dress, how they act, and the foods they eat, it's clear there is a lot to learn. How do you stay in touch with the place you came from and the people who lived before you? In this story, a woman moves to Canada from Yemen and discovers all the ways in which the food she grew up with connects her to her family and her culture.

Read and Think

Click on the link to read the story, "Yemeni Soup" by Ayelet Tsabari.

The author refers to many traditional dishes in the story. They are listed below:

Glossary
Ugat Shmarim: Yeasted cake
Babka: Cake made of sweet yeast dough filled with chocolate or cinnamon
Parve: Food that contains neither dairy nor meat
Sheket: Quiet
Jichnoon: Pastry made of layers rolled up with butter between them
Shuk: Open air market
Challah: Braided bread
Malawach: Sweet flaky flatbread or pancake
Bisbas: Spicy condiment
Tsli: Roasted meat

You might also read the food blog post "9 Jewish Yemenite Foods You Must Try". Connect the recipes in the blog to the dishes mentioned in the story.

Annotate the Text and Make Notes

What did you notice as you read the text? Highlight or underline parts of the text that you find interesting, confusing or that are related to what you believe is the author's main idea.

Next, think about what the main idea presented in the text reminds you of (your own experience, that of the world, other texts, etc.). What elements of author's craft did you highlight as particularly interesting or important? How do those elements contribute to your understanding of the text? Make notes of the ideas that came to you as you considered the highlighted elements.

Talk About the Story

Find someone else to read the story and discuss it with you. What are their thoughts on the story? Explain your thoughts and ideas to them.

Discuss what you believe the story might mean, the big idea it is suggesting, and why this big idea matters.

Write About the Story

Respond to “Yemeni Soup”, either in writing or by recording yourself discussing it.

When we respond to a text, either in writing or in another form, we explore what we believe to be the big idea (or theme), the ways we connect (our own lives, other texts, or the world) to that big idea, and what elements of the story helped us to better understand it.

Materials required

- Device with Internet access
- Links:

http://themagazineschool.ca/files/Yemeni%20Soup%20and%20Other%20Recipes.pdf

https://www.myjewishlearning.com/the-nosher/the-9-jewish-yemenite-foods-you-must-try/

Information for parents

Students should:

- read the short story and respond to the text

Parents could:

- encourage their teen to talk about their initial reaction to the story and share their ideas with them

Mes vacances à Balconville

Information for students

Mise en situation

L'heure des vacances est enfin arrivée. Question de faire les choses autrement cet été, tu décides exceptionnellement, d'envoyer une carte postale à tes amis, et ce, pour t'éviter à devoir publier des photos de toi quotidiennement sur les réseaux sociaux. (À faire quoi au juste ? Tu te le demandes bien!) Cet été, tu décroches. Une carte par mois, sans plus, envoyée à tes meilleurs amis sera certainement suffisant, te dis-tu!

Instructions

1. Choisis un site de cartes virtuelles gratuites (ex : Dromadaire) ou utilise le modèle traditionnel proposé à l'adresse ci-dessous: https://www.editionsmagriffe.ca/uploads/4/0/7/6/40767431/carte_postale_mod%C3%A8le.pdf
2. Pour cette carte, exprime-toi sur le sujet suivant :
   - Comment entrevois-tu tes vacances cet été ? Bref, que feras-tu pour qu'elles demeurent mémorables en dépit des mesures de confinement ?
3. Introduis ta carte en présentant le sentiment qui t'anime.
4. Exprime-toi sur tes vacances (ce que tu entrevois/planifies) dans ton paragraphe de développement.
5. Termine ton texte par une phrase de clôture.
6. Inscris l'adresse de ton/tes destinataire/s à l'endroit désigné (selon le type de carte que tu choisiras, virtuelle ou traditionnelle).
7. N'oublie pas les conventions d'écriture propres à la carte postale (la date, la formule d'appel, les salutations et la signature). Consulte le lien suivant au besoin : https://apprendre.tv5monde.com/fr/aides/cultures-les-conventions-de-la-carte-postale
8. Porte finalement une attention toute particulière au vocabulaire et aux conventions linguistiques. Utilise les références (dictionnaire, livre de conjugaison, grammaire) mises à ta disposition pour t'autocorriger. Consulte ton enseignant pour de plus amples informations.

Materials required

- Appareil avec accès à Internet
- Papier et crayons
- Appareil photo au besoin

Information for parents

Children should :

- read the following articles by way of introduction:

https://www.lapresse.ca/actualites/201908/02/01-5236102-les-vacances-des-autres.php
https://www.lapresse.ca/societe/famille/202005/19/01-5274175-lete-en-mode-covid-a-quoi-nos-vacances-ressembleront-elles.php

When Two Functions Meet

Information for students

The following information is given about a square root function and an absolute value function, named f and g respectively, which are represented in the Cartesian plane:

The rule of function f is of the form $f(x) = a\sqrt{b(x - h)} + k$.

In addition:

Dom $f =]-\infty, 4]$

Ran $f =]-\infty, 6]$

$f(3) = 4$

The rule of function g is of the form $g(x) = a\,|x - h| + k$.

In addition:

Dom f = Ran g

The axis of symmetry of function g is $x = -8$

$f(x) = g(x) = -2$

What is the value of $g(-10)$?

Materials required

- Calculator
- Graph paper
- Writing and drawing materials

Information for parents

About the activity

Children could:

- explain the problem-solving steps

Parents should:

- read the instructions to their child, if necessary
- discuss the task with their child
- go over the task with their child once it is completed by using the answer key provided

The solution to the problem is provided in Appendix A.

Appendix A – Answer Key

Solution

- RULE OF FUNCTION *f*

According to the domain and range, the coordinates of the vertex are (4, 6).

Given *f*(3) = 4, the point (3, 4) is part of the function, and the parameter b is negative.

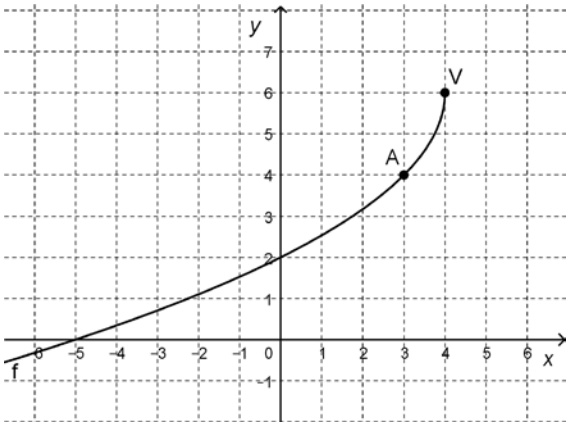
$f(x) = a\sqrt{-(x - 4)} + 6$

Using point A (3, 4)

$4 = a\sqrt{-(3 - 4)} + 6$

$-2 = a\sqrt{1}$

$-2 = a$



The rule of function *f* is

$f(x) = -2\sqrt{-(x - 4)} + 6$.

- POINT COMMON TO FUNCTIONS *f* AND *g*

$f(x) = -2$. So, $-2 = -2\sqrt{-(x - 4)} + 6$

$-8 = -2\sqrt{-(x - 4)}$

$4 = \sqrt{-(x - 4)}$

$16 = -(x - 4)$

$-12 = x$ So point (–12, –2) belongs to functions *f* and *g*.

- RULE OF FUNCTION *g*

According to the range of function *g*, parameter k = 4.

According to the axis of symmetry, parameter h = –8.

So, $g(x) = a\,|x - (-8)| + 4$

$-2 = a\,|-12 + 8)| + 4$ Using point $(-12, -2)$

$-6 = a\,|-4|$

$-6 = a(4)$ $\rightarrow$ $a = -1.5$

The rule of function g is $g(x) = -1.5\,|x + 8| + 4$.

- VALUE OF $g(-10)$

$g(-10) = -1.5\,|-10 + 8| + 4$

$= -1.5\,|-2| + 4$

$= -1.5(2) + 4 = 1$

- CONCLUSION

The value of $g(-10)$ is 1.

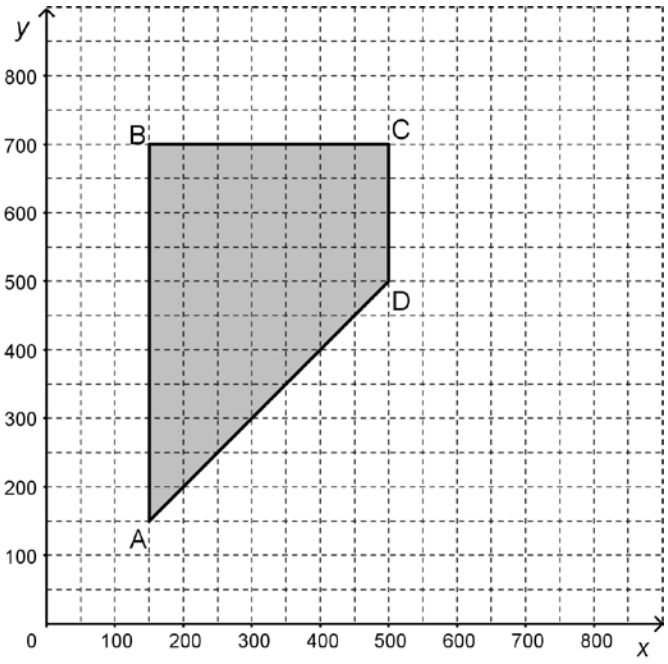
The Food Truck

Information for students

The owner of Lucy's Sea Shack restaurant has invested in a new food truck. The truck will move around to various locations around the city and sell two main dishes: lobster rolls and fish tacos.

Various constraints apply to the amount of food that the truck can sell on a given weekend. The polygon of constraints shown below represents the number of dishes that can be sold on a given weekend by the food truck.

Food Truck Sales



Coordinates of the vertices of the polygon of constraints
A (150, 150)
B (150, 700)
C (500, 700)
D (500, 500)

Where x: the number of lobster rolls sold

y: the number of fish tacos sold

Each lobster roll sells for $12, while the fish tacos sell for $10 each.

For the first weekend, the food truck was parked near an outdoor music festival and maximized its income.

However, on the second weekend, the truck moved to a new location, and its income was down by 30%.

The number of lobster rolls sold during the second weekend was $\frac{3}{4}$ of the number sold on the first weekend.

How many fish tacos were sold on the second weekend?

Materials required

- Calculator
- Writing and drawing materials

Information for parents

About the activity

Children could:

- explain the problem-solving steps

Parents should:

- read the instructions to their child, if necessary
- discuss the task with their child
- go over the task with their child once it is completed by using the answer key provided

The solution to the problem is provided in Appendix A.

Appendix A – The Food Truck

Solution

- DETERMINATION OF THE FUNCTION RULE AND MAXIMUM INCOME EARNED

Function rule: $R = 12x + 10y$

VERTEX	$R = 12x + 10y$	
A (150, 150)	\$3 300	
B (150, 700)	\$8 800	
C (500, 700)	\$13 000	← Maximum
D (500, 500)	\$11 000	

The food truck earned a maximum income of \$13 000 selling 500 lobster rolls and 700 fish tacos.

- INCOME EARNED ON THE SECOND WEEKEND

Loss in income: 30% of \$13 000

$0.30 \times \$13\,000 = \$3\,900$

Income earned on the second weekend: \$13 000 - \$3 9000 = \$9 100

- NUMBER OF LOBSTER ROLLS SOLD ON THE SECOND WEEKEND

Number of lobster rolls sold: $\frac{3}{4} \times 500 = 375$

- NUMBER OF FISH TACOS SOLD ON THE SECOND WEEKEND

$R = 12x + 10y$

$9\,100 = 12\,(375) + 10y$

$9\,100 = 4\,500 + 10y$

$9\,100 – 4\,500 = 10y$

$4\,600 = 10y$

$460 = y$

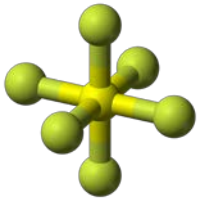
- CONCLUSION

The number of fish tacos sold on the second weekend was 460.

Sulfur Hexafluoride (SF_6): The Wonder Gas[1]

Information for students

Sulfur Hexafluoride (SF_6) was first produced by chemists Henri Moissan and Paul Lebeau in 1901. This gas has some exceptional properties, some of which are very useful and others that are potentially dangerous. SF_6 is colourless, so it cannot be seen, odorless, so it cannot be smelled and very non-reactive, almost like a noble gas.



Because the density of SF (6.12 g/L) is higher than the density of air (1.225 g/L), it will fall to the ground, displacing the air above it. Sulfur Hexafluoride's high density can sometimes have interesting effects. For example, light objects placed in a container of SF_6 will float on the gas, giving the impression that the objects are levitating. Also, breathing in SF_6 has the opposite effect of helium on one's voice. Instead of producing a high-pitched voice, it makes one's voice very deep because heavier molecules slow the speed of sound waves in the vocal chords. The danger is that because the gas is heavy, it can easily fall to the bottom of the lungs and cause suffocation.

Although SF_6 has some useful applications as an insulating gas, it is also the most potent greenhouse gas known to humankind. It is 23 900 times more impactful than CO_2 and can remain in the atmosphere for 800 to 3000 years. However, there are such low quantities in the atmosphere that it does not contribute significantly to climate change.

In this activity, you will determine the enthalpy of reaction of SF_6 production three different ways.

Video showing some of SF_6 properties in action by Steve Splangler

Experimenting with sulfur hexafluoride

Materials required

- Calculator, paper and pencil
- Chemistry notes or text may help

[1] Source: "Sulfur Hexafluoride - PubChem Public Chemical Database". PubChem. National Center for Biotechnology Information. Archived from the original on 3 November 2012. Retrieved 5 June 2020

Information for parents

About the activity

Parents should:

- support students in the Chemistry if needed

Appendix A – SF_6 Activity

In this activity, you will determine the enthalpy of reaction for SF_6 production three different ways: using bond energies, Hess' Law and an enthalpy diagram.

Bond Energies

Sulfur Hexafluoride (SF_6), is a very inert gas with properties similar to those of noble gases.

The reaction to produce SF_6 is shown below.

$$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$$

The average enthalpy associated with the breaking of certain bonds in kJ

H – F	567	F – F	155
H – S	330	S – F	327

Using bond energies, what is the ΔH of this reaction?

Hess' Law

$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$ $\Delta H = ?$

Given:

$\frac{1}{2}H_2(g) + \frac{1}{2}F_2(g) \rightarrow HF(g)$ $\Delta H = -273$ kJ

$S(s) + 3F_2(g) \rightarrow SF_6(g)$ $\Delta H = -1220$ kJ

$H_2(g) + S(s) \rightarrow H_2S(g)$ $\Delta H = -21$ kJ

Using Hess' law, what is the ΔH of this reaction?

Energy Diagram

Sketch and use an enthalpy diagram to determine the enthalpy for the following reaction. Make sure to show the reactants, the products, the enthalpy of the reaction and the activation energy.

Note: This is just a sketch and does not need to be to scale.

$$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$$

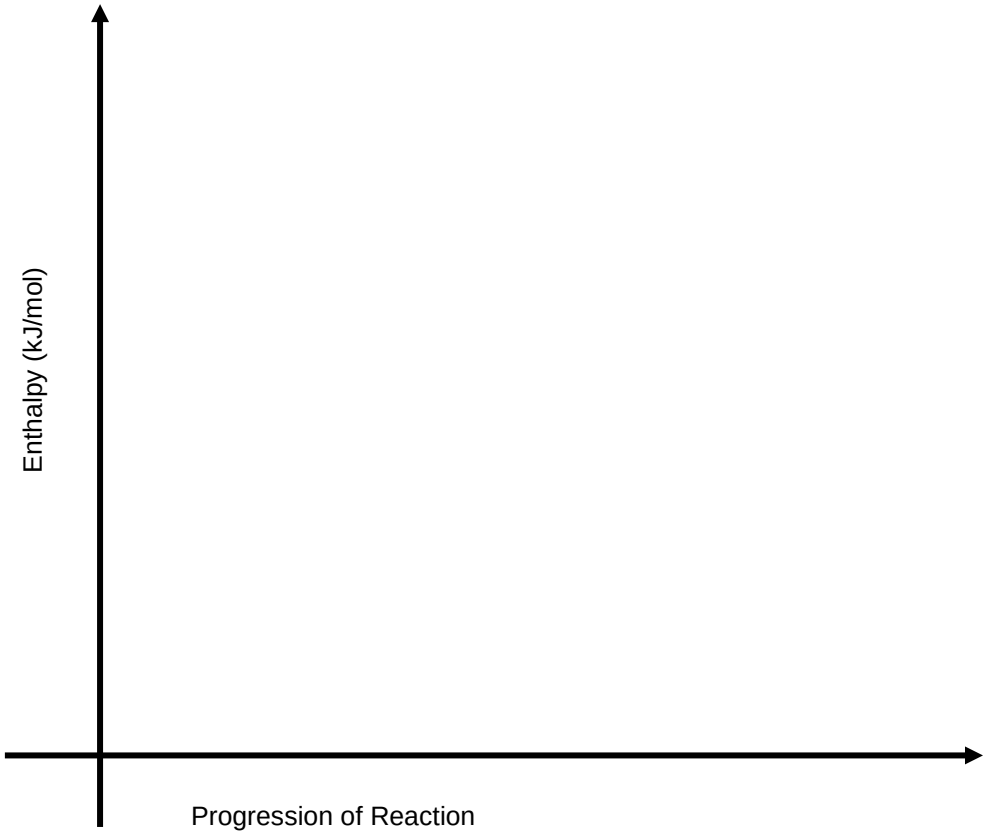
Given:

$\Delta H_{reactants}$ = 1980 kJ/mol

$\Delta H_{products}$ = 258 kJ/mol

E_a = 320 kJ/mol

Sketch the enthalpy diagram and show the ΔH of this reaction



Appendix B – SF_6 Solutions

Bond Energies

$$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$$

$\Delta H = \Delta H_{products} + \Delta H_{products}$

Breaking bonds is positive and creating bonds is negative.

Solution:

Bond energy of products

$\Delta H = 6 \times E_{(S\text{-}F)} + 2 \times E_{(H\text{-}F)}$

$\Delta H = 6 \times (-325\ kJ) + 2 \times (-567\ kJ)$

$\Delta H = -1950\ kJ - 1134\ kJ$

$\Delta H_p = -3084\ kJ$

Bond energy of reactants

$\Delta H = 4 \times E_{(F\text{-}F)} + 2 \times E_{(H\text{-}S)}$

$\Delta H = 4 \times (155\ kJ) + 2 \times (330\ kJ)$

$\Delta H = 620\ kJ + 660\ kJ$

$\Delta H_r = 1280\ kJ$

$\Delta H = \Delta H_p + \Delta H_r$

$\Delta H = -3084\ kJ + 1280\ kJ$

$\Delta H = -1804\ kJ$

Hess' Law

$$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$$

1. $1/2H_2(g) + 1/2F_2(g) \rightarrow HF(g)$ $\Delta H = -273kJ$
2. $S(s) + 3F_2(g) \rightarrow SF_6(g)$ $\Delta H = -1220kJ$
3. $H_2(g) + S(s) \rightarrow H_2S(g)$ $\Delta H = -21kJ$

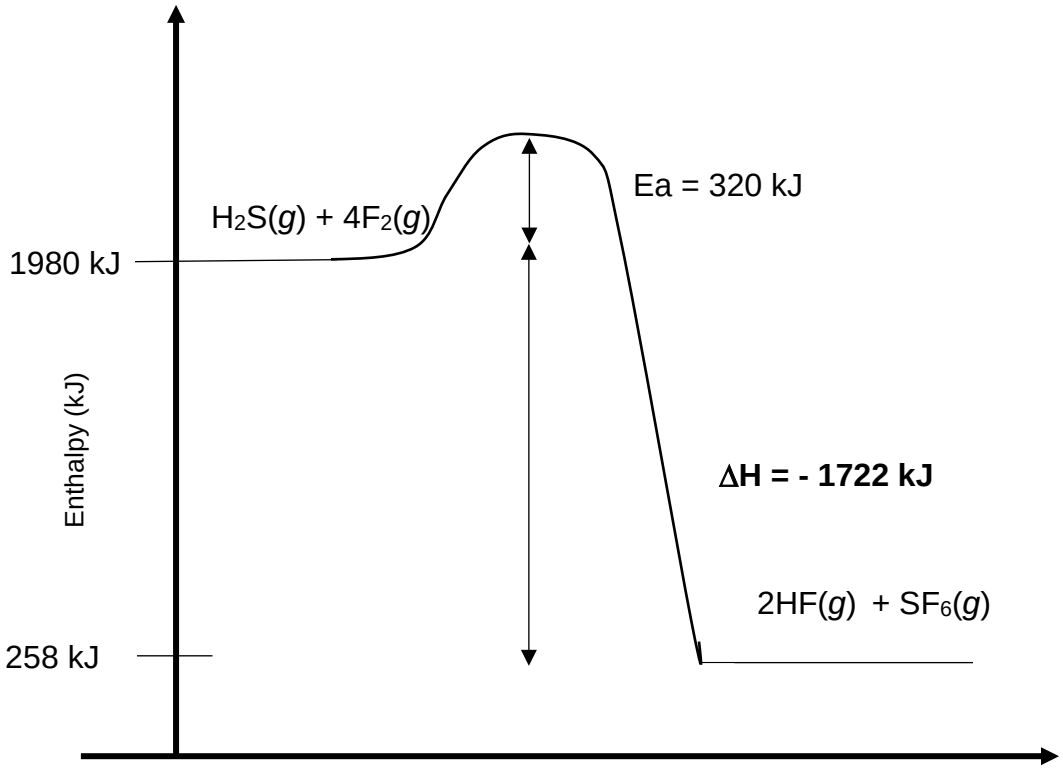
3. $H_2S(g) \rightarrow S(s) + H_2(g)$ - 1 x – 21 kJ *(Reverse reaction)*

2. $S(s) + 3F_2(g) \rightarrow SF_6(g)$ 1 x -1220kJ

1. $H_2(g) + F_2(g) \rightarrow 2HF(g)$ 2 x -273kJ

$H_2S(g) + 4F_2(g) \rightarrow 2HF(g) + SF_6(g)$ $\Delta H = -1745$ kJ

Enthalpy Diagram



Progression of reaction

Fibre Optics

Information for students

The following message was sent from Montreal to Paris.

01001000 01100001 01110110 01100101 00100000 01100001 00100000 01100111 01110010 01100101 01100001 01110100 00100000 01110011 01110101 01101101 01101101 01100101 01110010 0001010

How long did it take for this digital message to travel from Montreal to Paris using fibre optics?

What does the message say?

Research: In order to answer the question, you will need to find out the following information. (The following videos will be very helpful.)

- What is fibre optics, and how is it used to send digital messages?
- What does total internal reflection refer to?
  - Demo: https://www.youtube.com/watch?v=Lic3gCS_bKo)
- What is the speed of light in glass?
- How does digital information travel through fibre optics?
  - https://www.khanacademy.org/computing/ap-computer-science-principles/computers-101/digital-data-representation/v/khan-academy-and-codeorg-binary-data

Materials required

- Clear bottle (plastic or glass)
- Aluminum foil
- Bright flashlight
- Sink
- Water

Information for parents

About the activity

Parents could:

- watch the second video in the research section, as it provides interesting information

Appendix A – Fibre Optics Experiment

Information for Students

This experiment works best in the dark, so wait until after sunset. You will need to be in a dark room with a sink (bathroom or kitchen).

Materials required

- Clear bottle (plastic or glass)
- Aluminum foil
- Bright flashlight
- Sink

Procedure

1. Wrap the clear bottle with aluminum foil (tightly). Leave the opening uncovered.
2. With the aluminum foil, create an opening at the bottom big enough to insert the head of the flashlight.
3. Fill the bottle with water.
4. Turn the light off (it should be dark)
5. Turn the flashlight on and press it tightly against the bottom of the bottle so the light shines up through the water.
6. Over the sink, tilt the bottle so that the water starts to pour out. Keep the light pressed tightly to the bottom of the bottle.

What do you notice about the water flowing from the bottle?

Question:

The following message was sent from Montreal to Paris.

01001000 01100001 01110110 01100101 00100000 01100001 00100000 01100111 01110010 01100101 01100001 01110100 00100000 01110011 01110101 01101101 01101101 01100101 01110010 0001010

1. How long did it take for this digital message to travel from Montreal to Paris using fibre optics?

2. What does the message say?

Decode the message (binary to alphabet) using the table on the next page.

Decimal - Binary - Octal - Hex – ASCII Conversion Chart

Decimal	Binary	Octal	Hex	ASCII	Decimal	Binary	Octal	Hex	ASCII	Decimal	Binary	Octal	Hex	ASCII	Decimal	Binary	Octal	Hex	ASCII
0	00000000	000	00	NUL	32	00100000	040	20	SP	64	01000000	100	40	@	96	01100000	140	60	`
1	00000001	001	01	SOH	33	00100001	041	21	!	65	01000001	101	41	A	97	01100001	141	61	a
2	00000010	002	02	STX	34	00100010	042	22	"	66	01000010	102	42	B	98	01100010	142	62	b
3	00000011	003	03	ETX	35	00100011	043	23	#	67	01000011	103	43	C	99	01100011	143	63	c
4	00000100	004	04	EOT	36	00100100	044	24	$	68	01000100	104	44	D	100	01100100	144	64	d
5	00000101	005	05	ENQ	37	00100101	045	25	%	69	01000101	105	45	E	101	01100101	145	65	e
6	00000110	006	06	ACK	38	00100110	046	26	&	70	01000110	106	46	F	102	01100110	146	66	f
7	00000111	007	07	BEL	39	00100111	047	27	'	71	01000111	107	47	G	103	01100111	147	67	g
8	00001000	010	08	BS	40	00101000	050	28	(	72	01001000	110	48	H	104	01101000	150	68	h
9	00001001	011	09	HT	41	00101001	051	29	)	73	01001001	111	49	I	105	01101001	151	69	i
10	00001010	012	0A	LF	42	00101010	052	2A	*	74	01001010	112	4A	J	106	01101010	152	6A	j
11	00001011	013	0B	VT	43	00101011	053	2B	+	75	01001011	113	4B	K	107	01101011	153	6B	k
12	00001100	014	0C	FF	44	00101100	054	2C	,	76	01001100	114	4C	L	108	01101100	154	6C	l
13	00001101	015	0D	CR	45	00101101	055	2D	-	77	01001101	115	4D	M	109	01101101	155	6D	m
14	00001110	016	0E	SO	46	00101110	056	2E	.	78	01001110	116	4E	N	110	01101110	156	6E	n
15	00001111	017	0F	SI	47	00101111	057	2F	/	79	01001111	117	4F	O	111	01101111	157	6F	o
16	00010000	020	10	DLE	48	00110000	060	30	0	80	01010000	120	50	P	112	01110000	160	70	p
17	00010001	021	11	DC1	49	00110001	061	31	1	81	01010001	121	51	Q	113	01110001	161	71	q
18	00010010	022	12	DC2	50	00110010	062	32	2	82	01010010	122	52	R	114	01110010	162	72	r
19	00010011	023	13	DC3	51	00110011	063	33	3	83	01010011	123	53	S	115	01110011	163	73	s
20	00010100	024	14	DC4	52	00110100	064	34	4	84	01010100	124	54	T	116	01110100	164	74	t
21	00010101	025	15	NAK	53	00110101	065	35	5	85	01010101	125	55	U	117	01110101	165	75	u
22	00010110	026	16	SYN	54	00110110	066	36	6	86	01010110	126	56	V	118	01110110	166	76	v
23	00010111	027	17	ETB	55	00110111	067	37	7	87	01010111	127	57	W	119	01110111	167	77	w
24	00011000	030	18	CAN	56	00111000	070	38	8	88	01011000	130	58	X	120	01111000	170	78	x
25	00011001	031	19	EM	57	00111001	071	39	9	89	01011001	131	59	Y	121	01111001	171	79	y
26	00011010	032	1A	SUB	58	00111010	072	3A	:	90	01011010	132	5A	Z	122	01111010	172	7A	z
27	00011011	033	1B	ESC	59	00111011	073	3B	;	91	01011011	133	5B	[	123	01111011	173	7B	{
28	00011100	034	1C	FS	60	00111100	074	3C	<	92	01011100	134	5C	\	124	01111100	174	7C	|
29	00011101	035	1D	GS	61	00111101	075	3D	=	93	01011101	135	5D	]	125	01111101	175	7D	}
30	00011110	036	1E	RS	62	00111110	076	3E	>	94	01011110	136	5E	^	126	01111110	176	7E	~
31	00011111	037	1F	US	63	00111111	077	3F	?	95	01011111	137	5F	_	127	01111111	177	7F	DEL

Appendix B – Solutions

How long does it take a digital message to travel from one source (for example, a computer) to another (a second computer)?

Messages travel in the form of light; therefore they travel at the speed of light. In fibre optics, light travels through glass, which has a refractive index of approximately 1.5.

The formula for refractive index is $n = \frac{c}{v}$, where:

- n = refractive index of a medium (in this case glass)
- c = the speed of light in a vacuum (approximately 300 000 km/s)
- v = the velocity of the light in the medium (in this case glass)

Solve for v. v = 200 000 km/s

The message would travel at the speed of light in glass, or 200 000 km/s

Distance from Montreal to Paris 5500 km (this is a direct distance, so the actual distance using fibre optics might be longer)

$v = \frac{d}{t}$

$t = d/v$

$= 5500\ km/200\ 000\ km/s$

$= 0.0275\ s$

Summer Safety and Summer Exercises

Information for students

Activity 1: Summer safety reading

- Summer is right around the corner, but before you go outside, start work, or head out for a picnic, get some info first!
- Read the article Summer Safety 101 from the perspective of an older sibling or a camp counselor. Think about what you have learned from the reading and what you could potentially teach others.
    - Answer these questions:
        1. If your younger sibling or camper is looking sluggish and you know they have not been drinking water all day, what would you suggest or offer to entice them to hydrate? OR If your younger sibling is swimming in the pool and you have been asked to watch them, but your phone rings in the house, what should you do?
        2. If your friend decides that helmets are “not cool” and chooses not to wear one, what would you say to convince them to wear a helmet while they ride their bike?
        3. What did you lean about “respecting the environment” during the summer months?
        4. Do you have a first-aid kit in the car or at home? Why do you think it is important to have one?

Activity 2: Summer-time exercises

1. Try one of these workouts:
    - Cardio workout
    - Yoga
    - Full Body HIIT
2. Which one did you do? How did it go? Do you think you could continue to do workouts like this over the summer?
    - Over the past few months, you have learned and tried new exercises at home (restorative, yoga, HIIT), but a healthy lifestyle is one that is continuous and enjoyable.
    - The most important thing is to find an activity, exercise, sport, or movement that you like and stick with it (or switch it up when you find a new enjoyable activity!).
3. What do you think you will do this summer to be physically active? Make a tentative plan for what you will do this summer: 3 exercises a week for 9 weeks (e.g. swim, bike, run, dance, train, play, yoga, online workout videos).

June/July	
August	

Materials required

- None

Information for parents

About the activity

Children should:

- read the article, reflect, and answer the 4 questions
- reflect on the new workouts they learned, try a workout, and think about what they will do over the summer

Parents could:

- encourage their children to read the article and answer the questions, and to stay safe over the summer
- do the workout with their children or help them be more autonomous
- encourage their children to be active over the summer