

5.3 How did John Rae's diet compare to modern nutrition guidelines?

Story Extension for This Lesson:

John Rae explored Canada's north at a time when little was known of Aboriginal ways of survival. Rae was an early adopter of many of the Inuit ways, including learning how to hunt, which may have given him survival skills that were lacking in other European explorers from that time. Given the amount of energy an explorer would burn each day, how well adapted is the Inuit diet for survival? How does it compare to modern nutrition guidelines?

Grade: 5

Strand: Human Organ Systems

Big Ideas:

- Systems in the human body work together to meet our basic needs. (Overall expectations 2 and 3)
- Organ structures are linked to their functions. (Overall expectations 2 and 3)
- Choices we make affect our organ systems and, in turn, our overall health. (Overall expectations 1 and 3)

Overall Expectations:

1. analyze the impact of human activities and technological innovations on human health
2. investigate the structure and function of the major organs of various human body systems

Specific Expectations:

1.1 assess the effects of social and environmental factors on human health, and propose ways in which individuals can reduce the harmful effects of these factors and take advantage of those that are beneficial

2.4 use appropriate science and technology vocabulary, including circulation, respiration, digestion, organs, and nutrients, in oral and written communication

3.1 identify major systems in the human body (e.g., musculoskeletal system, digestive system, nervous system, circulatory system) and describe their roles and interrelationships

3.2 describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems

Health and Physical Education:

C2.1 explain how to use nutrition facts tables and ingredient lists on food labels to make healthier personal food choices

Inquiry Skills:

Predicting, Comparing, Contrasting, Reflecting

Instructions:

Part 1:

Review key ideas from the last activity, which looked at the digestive system and how it works. Now this information will be applied to look at nutritional challenges that faced European explorers as they mapped out northern Canada. Re-read the part of the story that talks about John Rae's diet and how he ate. Ask the class opinions about whether or not they think that John's diet would be considered healthy by today's standards. Ask students if they know the various food groups and how many servings are recommended per day, as per Canada's Food Guide:

<https://www.canada.ca/en/health-canada/services/canada-food-guides.html>

Part 2:

Give students a copy of the Canada Food Guide and go over the key information (four food groups, number of servings per group). Also go over the three types of macronutrients and recommended percentages (see attachment, or

<https://www.canada.ca/en/health-canada/services/canada-food-guides.html>

Part 3:

Based on their background knowledge, have students predict what a typical Inuit diet may have consisted of, which would be the diet that John Rae would have followed during much of his expeditions. Then give them a link to information like the one below, or use this as an opportunity for students to do research on Inuit diet.

https://en.wikipedia.org/wiki/Inuit_cuisine

Part 4:

Once students have established what an Inuit diet looked like, have them COMPARE and CONTRAST the two diets (traditional Inuit vs modern guidelines) and analyze the recommendations for macronutrients of traditional Inuit vs Canada Food Guide recommended diet.

Consolidation:

Have students record an Eating Journal for two to three days, and categorize their eating as per the Canada Food Guide. Are students getting the recommended portions of each food category?

Journal Question(s):

- Why is a healthy diet important?
- What are some long term health effects of having too much fat in your diet?

Connections:

Language: Research

Social Studies: First Nations and Europeans in New France and Early Canada

Assessment Strategy:

Have students prepare a meal plan, including snacks, for a regular school day that meets the guidelines of the Canada Food Guide. Next, have them research and develop a meal plan that would be appropriate for a one to three day backpacking trip. This trip can be framed as a training day as the students prepare to journey North to follow the path of John Rae.

Students may need to research backpacking menus and/or the use of freeze-dried foods and other methods to reduce weight while still getting enough calories and nutritional value to maintain a full day of activity.

Handouts/Assessments:

- Macronutrients
- Canada Food Guide

Subject Area:

Health

Connects to:

Grade 5

Acceptable **Macronutrient** Distribution Ranges:

Age group	Percentage of total calories from		
	carbohydrate	protein	fat
1-3 years	45 - 65 %	5 - 20 %	30 - 40 %
4-18 years	45 - 65 %	10 - 30 %	25 - 35 %
19 years and over	45 - 65 %	10 - 35 %	20 - 35 %

What Amount of Food Should People Eat?

Canada's Food Guide recommends how many Food Guide Servings people should eat from each of the four food groups, plus a small amount of added oils and fats. The recommended number of servings is different for people at different stages of life and is different for males and females. The recommended number of Food Guide Servings is an average amount that people should try to eat each day.

Recommended number of Food Guide Servings per day

	Children			Teens		Adults			
	2-3	4-8	9-13	14-18 Years		19-50 Years		51 + Years	
	Girls and Boys			Females	Males	Females	Males	Females	Males
Vegetables and Fruit	4	5	6	7	8	7-8	8-10	7	7
Grain Products	3	4	6	6	7	6-7	8	6	7
Milk and Alternatives	2	2	3-4	3-4	3-4	2	2	3	3
Meat and Alternatives	1	1	1-2	2	3	2	3	2	3

Age in Years Sex	Children			Teens		Adults			
	2-3	4-8	9-13	14-18		19-50		51+	
	Girls and Boys			Females	Males	Females	Males	Females	Males
Vegetables and Fruit	4	5	6	7	8	7-8	8-10	7	7
Grain Products	3	4	6	6	7	6-7	8	6	7
Milk and Alternatives	2	2	3-4	3-4	3-4	2	2	3	3
Meat and Alternatives	1	1	1-2	2	3	2	3	2	3



Fresh, frozen or canned vegetables
125 mL (½ cup)



Leafy vegetables
Cooked: 125 mL (½ cup)
Raw: 250 mL (1 cup)



Bread
1 slice (35g)



Bagel
½ bagel (45 g)



Flat breads
½ pita or ½ tortilla (35 g)



Cooked bulgur
125 mL (½ cup)



Milk or powdered milk (reconstituted)
250 mL (1 cup)



Canned milk (evaporated)
125 mL (½ cup)



Fortified soy beverage
250 mL (1 cup)



Cooked fish, shellfish, poultry, lean meat
75 g (2 ½ oz.)/125 mL (½ cup)



Cooked legumes
175 mL (¾ cup)



Tofu
150 g or 175 mL (¾ cup)

The chart above shows how many Food Guide Servings you need from each of the four food groups every day.

Having the amount and type of food recommended and following the tips in *Canada's Food Guide* will help:

- Meet your needs for vitamins, minerals and other nutrients
- Reduce your risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis
- Contributes to your overall health and vitality



Oils and Fats

† Include a small amount – 30 to 45 mL (2 to 3 tablespoons) each day. This includes oil used for cooking and mayonnaise.

† Use vegetable oils such as canola, olive, and sunflower.

† Choose soft margarine that are low in saturated fat.

Children

MPXJOH *Canada's Food Guide* IFIQT
ESFO HSPX BOE UISJWF.

OH DIJIESFO IBWF TNBM BQFJWJFT BOE
E DBIJSJFT GPS HSPXU BOE
/FMPQNFOU.

WJF TNBM OVUSJUPVT NFBIT BOE TOBDLT
DI EBZ.

OPU SFTUSJOU OVUSJUPVT GPPET CFDBVTF
UIFJS GBU DPOUFOU. OGGFS B WBSJFUZ PG
PET GSPN UIF GPVS GPPE HSPVQT.

U PG BMM... CF B HPPE SPMF NPEFM.



Women of childbearing age

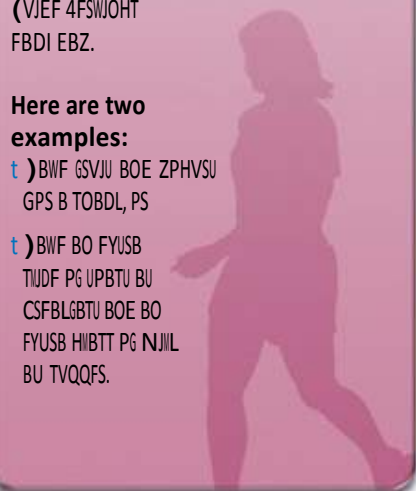
"MXPNO XIP DPVIE CFDPNF QSFHOB
BOE UIPTF XIP BSF QSFHOB PS
CSFBTUGFEJOH OFFE B NVUJWJUBNJO
DPOUBJOH **follic acid** FWFSZ EBZ. 1SFHOB
XPNO OFFE UP FOTVSF UIBU UIFJS
NVUJWJUBNJO BMTP DPOUBJOT **iron**. "
IFBU DBSF QSPGFTTPOB DBO IFIQ ZPV GJOE
UIF NVUJWJUBNJO UIBU'T SJHU GPS ZPV.

1SFHOB BOE CSFBTUGFEJOH XPNO OFFE
NPSF DBIJSJFT. *ODIVEF BO FYUSB 2 UP 3 *PPE
(VJEF 4FSWJOHT
FBDI EBZ.

Here are two examples:

t)BWF GSJU BOE ZPHVSU
GPS B TOBDL, PS

t)BWF BO FYUSB
TJUDF PG UPBTU BU
CSFBLGBTU BOE BO
FYUSB HIIBTT PG NJJIL
BU TVQQFS.



Men and women over 50

5IF OFFE GPS **vitamin D** JODSFBTFT BGUFS
UIF BHF PG 50.

*OBEEJUPO UP GPMMPXJOH *Canada's Food
Guide*, FWFSZPOF PWFS UIF BHF PG 50 TIPVIE
UBLF B EBZJWJUBNJO % TVQQIFNFOU PG 10
H (400*6).



The benefits of eating well and being active include

t #FUUFS PWFSBM IFBU.
t -PXF SJTL PG EJTFBTF.
t " IFBUIZ CPEZ XFJHU.

t *FJIOH BOE IIPLOH CFUUF.
t _ PSF FOFSHZ.
t 4USPOHFS NVTDIFT BOE CPOFT.

Be active

5P CF BDJWF FWFSZ EBZ JT B TUFQ UPXBSET CFUUF IFBU BOE B IFBUIZ CPEZ X

*U JT SFDPNNOEFE UIBU BEVMUT BDDNVNMBUF BU MFTU 2 1/2 IPVST PG NPEFSBUF U
Q1ZTJDBI BDJWJUZ FBDI XFFL BOE UIBU DIJIESFO BOE ZPVU BDDNVNMBUF BU MFTU
QFS EBZ. :PV EPOU IBWF UP EP JU BM BU PDF. \$IPPTF B WBSJFUZ PG BDJWJUZ TQSF
UISPVHI PVU UIF XFFL.

Start slowly and build up

Eat well

"OPUIFS JNQSUBOU TUFQ UPXBSET CFUUF IFBMUI BOE B IFBMUIZ CPEZ XFJHU
Canada's Food Guide CZ,

t &BUJOH UIF SFDPNNOEFE BNPVOU BOE UZQF PG GPPE FBDI EBZ.

t JNUJOH GPPET BOE CFWFSBHFT JHIJO DBMPSJFT, GBU, TVHBS PSTBMU (T
QBTUSJFT, DIPDPMBUF BOE DBOEJFT, DPPLFT BOE HSBOPMB CBST, EPVHIOU
BOE GSPFO EFTTSUT, GSFODI GSJFT, QPUBU DIJQT, OBDIPT BOE PUIFS TBMUZ
GMBWPVSFE ESJOLT, TPGU ESJOLT, TQPSUT BOE FOFSHZ ESJOLT, BOE TXFFUFC

Read the label

t \$PNQBSF UIF /VUSJUPU *BDUT UBCIF PO GPPE
IIBCFIT UP DIPPTF QSPEDUT UIBU DPOUBJO IFTT
GBU, TBUVSBUFE GBU, USBOT GBU, TVHBS
BOE TPEJVN.

t ,FFQ JO NJOE UIBU UIF DBIJSJFT BOE
OVUSJOUT MJTUF BSF GPS UIF BNPVOU PG
GPPE GPVOE BU UIF UPQ PG UIF /VUSJUPU
'BDUT UBCMF.



Limit trans fat

8IFO B /VUSJUPU *BDUT UBCIF JT OPU BWBIBCF, BTL
GPS OVUSJUPU JOGPNBJUPU UP DIPPTF GPPET IIPXFS JO
USBOT BOE TBUVSBUFE GBUT.

How do I count Food Guide Servings in a meal?



Here is an example:

Vegetable and beef stir-fry with rice, a glass of milk and an apple for dessert

250 N- (1 DVQ) NJYFE CSPDDPJ,
DBSSPU BOE TXFFU SFE QFQQFS = 2 **Vegetables and Fruit** *PPE (VJEF 4FSWJOHT

75 H (2 1/2 P[.) IFBO CFFG = 1 **Meat and Alternatives** *PPE (VJEF 4FSWJOH

250 N- (1 DVQ) CSPXO SJDF = 2 **Grain Products** *PPE (VJEF 4FSWJOHT

5 N- (1 UTQ) DBOPMB PJM = QBSU PG ZPVS **Oils and Fats** JOUBLF GPS UIF EBZ

