CGC1P

Climate Research and Presentation

Each student will be assigned a different climate factor. Upon completing the activities that accompany the factor, your group will present the information to the class in a 5-10 minute presentation.

Your assigned climate factor is **Latitude**

1. Construct climate graphs for the following cities.

Houston, Texas: masl=8m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	10.5	12.2	16	20.3	23.6	26.5	27.7	27.7	25.5	20.9	16.6	12.3
Precip (mm)	96.2	87.5	74.7	78.7	112.2	118.7	130.1	110.1	151.9	94.7	95.2	99.9

Windsor, Ontario: masl=190m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-5	-3.9	1.7	8.1	14.4	19.7	22.4	21.3	17.4	10.9	4.7	-1.9
Precip (mm)	50.3	53.7	72	80.3	75.7	97	85.3	85.7	86.7	57.9	75.4	81.6

Kenora, Ontario: masl=411m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-17.5	-14.3	-6.7	2.9	10.7	16	19.4	17.9	11.7	5.6	-4.7	-13.9
Precip (mm)	28.2	24	31.3	37.2	54.7	91.6	88.4	80.4	71.4	42.6	41	30.3

Resolute, Nunavut: masl=64m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-32	-33	-31.2	-23.5	-11	-0.6	4	1.9	-5	-15.2	-24.3	-29
Precip (mm)	3.5	3.2	4.7	6.2	8.3	12.7	23.4	31.5	22.8	13.1	5.7	4.6

2. Locate and label each of the cities on a map.

3. Construct a graph to represent the effect of Latitude on temperature and precipitation. Write a paragraph to explain the effect of latitude on temperature and precipitation. (Use the data from your graphs.

4. a. Draw a diagram to illustrate why it is colder at higher latitudes.
   b. Write a paragraph explaining the diagram.

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Your assigned climate factor is **Ocean Currents**

1. Construct climate graphs for the following cities.

Yarmouth, Nova Scotia: masl=43m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-2.8	-3	0.2	4.7	9.4	13.3	16.3	16.5	13.7	9.4	5.2	-0.3
Precip (mm)	140.7	110.5	101.1	99.9	100.1	94	78.6	84.1	88.6	107.3	136.9	135.2

Port Alberni, British Columbia: masl=2m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	1.9	3.4	5.6	8.1	11.4	14.4	17.1	17.8	14.5	9.8	5	2.4
Precip (mm)	179.1	125.9	108.2	57.2	40.1	38.1	27.9	37.3	48.2	126	192.2	197.3

Masset, British Columbia: masl=5m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	2	2.9	3.9	5.9	8.9	11.7	13.6	14.5	12.2	8.5	5.1	3.2
Precip (mm)	147.1	114.5	105.5	106.9	86.2	64.6	70.5	71.5	109.9	183.9	184.5	177.1

Cartwright, Newfoundland: masl=24m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-13.7	-13	-8.5	-2.5	2.9	8.3	12.7	12.1	8.5	3.2	-2.1	-9.2
Precip (mm)	88.4	75.1	93.1	78.7	62.4	79.8	81.5	82.2	89.6	72.5	78.5	84.4

2. Locate and label each of the cities on a map.

3. Construct a graph to represent how the ocean currents affect the temperature and precipitation. Write a paragraph to explain the effect of ocean currents. (Use the data)

4. a. Draw and label the ocean currents that affect North America.
   b. Write a paragraph that explains the effect of the warm and cold ocean currents on the different regions.

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Your assigned climate factor is **Elevation**

1. Construct climate graphs for the following cities.

Kamloops, BC: masl=290m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-5.3	-2	3.7	9.5	14.3	17.9	21	19.9	14.8	8.5	1.8	-2.5
Precip (mm)	26.1	16.2	9.4	12.1	21.3	33.1	24.9	27.6	21.7	16.4	21.9	27.8

Golden, British Columbia: 51.3N, 116.9W; masl=785m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-10.9	-6.6	-0.4	5.7	10.8	14.6	17.4	16	11.1	5.2	-2.4	-8.3
Precip (mm)	31.5	23.8	24.3	31.2	51.9	65.7	45.8	51.9	39.6	31.5	32	33.7

Powell River, BC: 49.9N, 124.5W; masl=52m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	3.3	4.6	6.2	9.2	12.8	15.9	18.2	18.1	15.1	10.8	6.6	4.4
Precip (mm)	126.8	92.9	81	57	52	52.3	37.7	45.2	58.8	115	139.3	146.6

Glacier NP Rogers Pass: 51.3N. 117.5W; masl=1323m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-10.3	-6.7	-2.6	1.5	5.3	10	12.8	12.7	7.6	1.7	-4.9	-9.5
Precip (mm)	60.1	34.2	22.2	21.5	29.9	42.9	38.2	38.7	37.5	36.9	47.7	61.6

2. Locate and label each of the cities on a map.

3. Construct a graph to represent how elevation affects the temperature and precipitation. Write a paragraph to explain the effect of elevation. (Use the data)

4. a. Draw a diagram to describe the difference between the change in temperature when it is raining (wet adiabatic lapse rate) and when it is dry (dry adiabatic lapse rate).
   b. Write a description for the diagram.

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Your assigned climate factor is **Relief**

1. Construct climate graphs for the following cities.

Vancouver, BC: masl=3m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	3	4.7	6.3	8.8	12.1	15.2	17.2	17.4	14.3	10	6	3.5
Precip (mm)	149.8	123.6	108.8	75.4	61.7	45.7	36.1	38.1	64.4	115.3	169.9	178.5

Prince Rupert, BC: masl=52m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	.8	2.5	3.7	5.5	8.4	10.9	12.9	13.3	11.3	8	3.8	1.7
Precip (mm)	250.8	216.5	188.2	181	142	119.5	112.9	162.8	244.7	378.9	284.4	269.8

Prince George, BC: masl=676m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-10.3	-6.5	-1.1	4.5	9.5	13.1	15.2	14.4	9.5	4.8	-2.3	-7.8
Precip (mm)	57	39	37	27	47	67	60	68	59	59	51	57

Calgary, Alberta: masl=1077m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-9.6	-6.3	-2.5	4.1	9.7	14	16.4	15.7	10.6	5.7	-3	-8.3
Precip (mm)	12.2	9.9	14.7	25.1	52.9	76.9	69.9	48.7	48.1	15.5	11.6	13.2

2. Locate and label each of the cities on a map.

3. Construct a graph to show how precipitation changes as you move from Vancouver to Calgary? Write a paragraph to explain the effect of mountains. (Use the data)

4. a. Draw a diagram to illustrate relief precipitation (include leeward, windward, rain shadow, and the names of the mountain ranges).
   b. Write a description for your diagram.

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Your assigned climate factor is **Near Water**

1. Construct climate graphs for the following cities.

Halifax, Nova Scotia: masl=126m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-5.8	-6	-1.7	3.6	9.4	14.7	18.3	18.1	13.8	8.5	3.2	-3
Precip (mm)	146.1	119.1	122.6	124.4	110.5	98.4	96.8	109.6	94.9	128.9	154.4	167

Saskatoon, Saskatchewan: masl=501m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-17.5	-13.9	-7	3.9	11.5	16.2	18.6	17.4	11.2	4.8	-6	-14.7
Precip (mm)	15.9	12.9	16	19.7	44.2	63.4	58	36.8	32.1	16.9	14.1	17.2

Winnipeg, Manitoba: masl=239m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	-18.3	-15.1	-7	3.8	11.6	16.9	19.8	18.3	12.4	5.7	-4.7	-14.6
Precip (mm)	19.3	14.8	23.1	35.9	59.8	83.8	72	75.3	51.3	29.5	21.2	18.6

Vancouver, BC: masl=3m

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	3	4.7	6.3	8.8	12.1	15.2	17.2	17.4	14.3	10	6	3.5
Precip (mm)	149.8	123.6	108.8	75.4	61.7	45.7	36.1	38.1	64.4	115.3	169.9	178.5

2. Locate and label the cities on a map.

3. Construct a graph to represent the differences between cities located near the water and the cities located inland? (Winter and summer temperatures-RANGE; precipitation). Write a paragraph to explain the effect of water. (Use the data)

4. a. Draw diagrams to illustrate the cooling-warming effect of water; and for the effect on precipitation.
   b. Write a paragraph describing the diagrams.