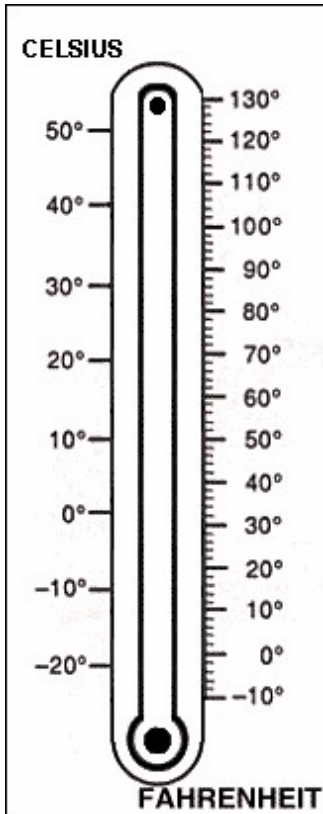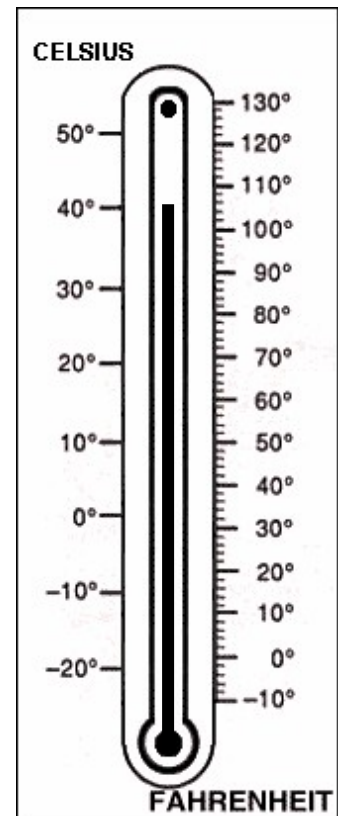Name _____   Date _____

Temperature and Thermometers

1. Mark 45°C on the thermometer.

2. Water freezes at 0°C.
    What temperature is this in Fahrenheit?

3. Tropical fish should be kept at about 78°F.
    What temperature is this in Centigrade (Celsius)?

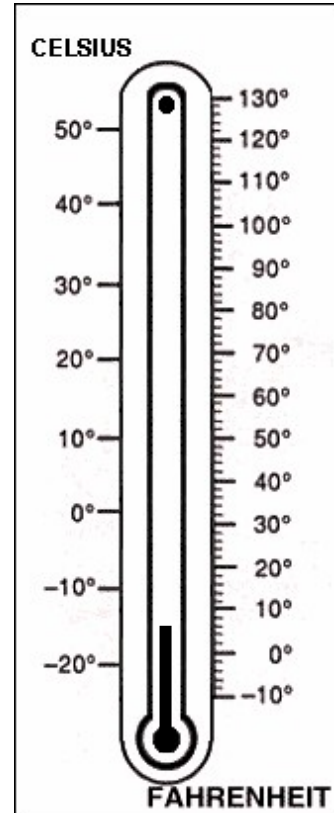4. How many degrees Celsius is 0° Fahrenheit?

5. What temperature, in Celsius, does the
    thermometer on the right show?

6. What does it show in Fahrenheit?

7. A gardener records the temperature in his garden. During the day the
    temperature is 10°C. At night the temperature falls to -4°C. By how many degrees
    does the temperature fall?

8. A patient in hospital has a temperature of 39.8°C. A healthy person's temperature
    is 37.9°C. How many degrees above this is the patient's temperature?

Name _____ Date _____

9. The thermometer on the right is fitted to a freezer.
   The correct legal temperature is no more than -18°C.
   Is the temperature of the freezer too high or too low?

10. About how many degrees does it need to change
    and in which direction?

11. Fridge temperatures need to be between 3°C and 8°C.
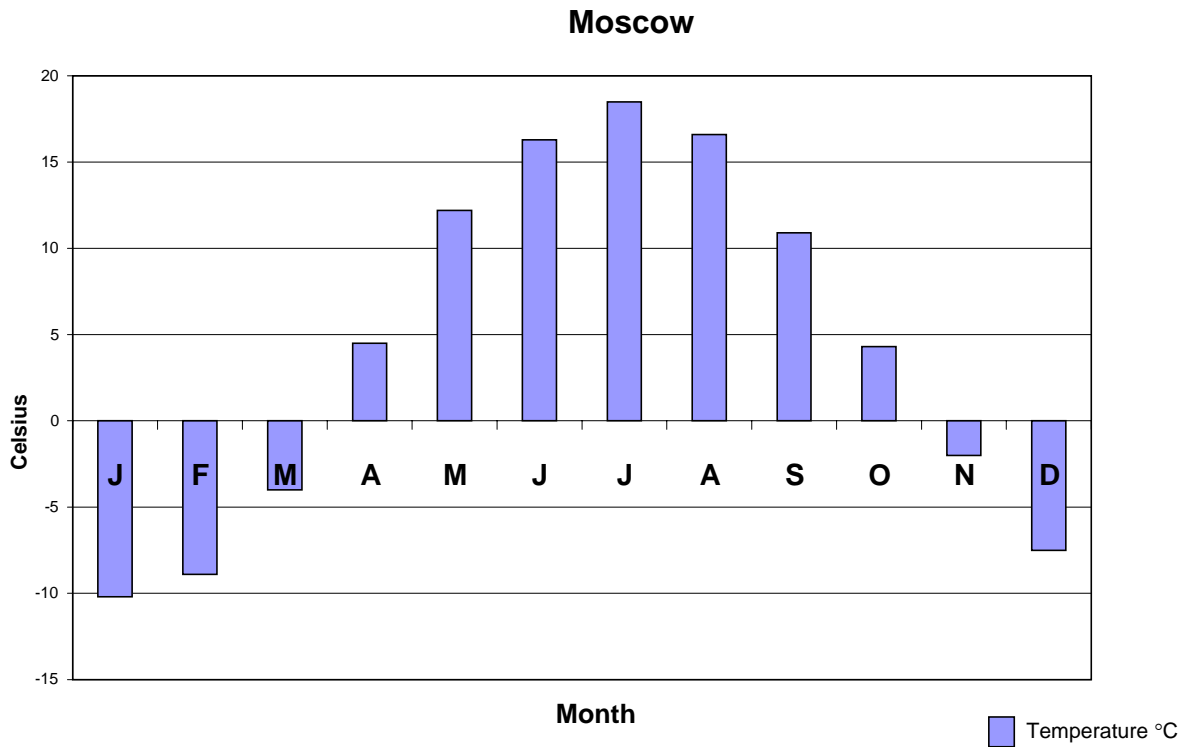   Mark these on the thermometer.

Brampton, Canada temperature data.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	-7.1	-6.4	-2.6	5.6	12.2	17.7	20.4	19.4	15.0	9.2	2.5	-3.8
°F	19.2	20.5	27.3	42.1	54.0	63.9	68.7	66.9	59.0	48.6	36.5	25.2

12. What are the highest and lowest temperatures for the town of Brampton?

13. What is the range of temperature for the town of Brampton?

14. What is the average temperature? (Be careful when adding on the negative
    temperatures).

Name _____ Date _____

Below is a chart showing the temperature for the city of Moscow.

Moscow

15. What is the maximum temperature for Moscow?

16. What is the minimum temperature?

17. What is the range of temperature over the year?

The data below shows the temperatures for London over one year.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	3.9	4.2	5.7	8.5	11.9	15.2	17.0	16.6	14.2	10.3	6.6	4.8

18. What is the average temperature for London for the year? *You may use a calculator for this question.*

19. What is the range of temperature?
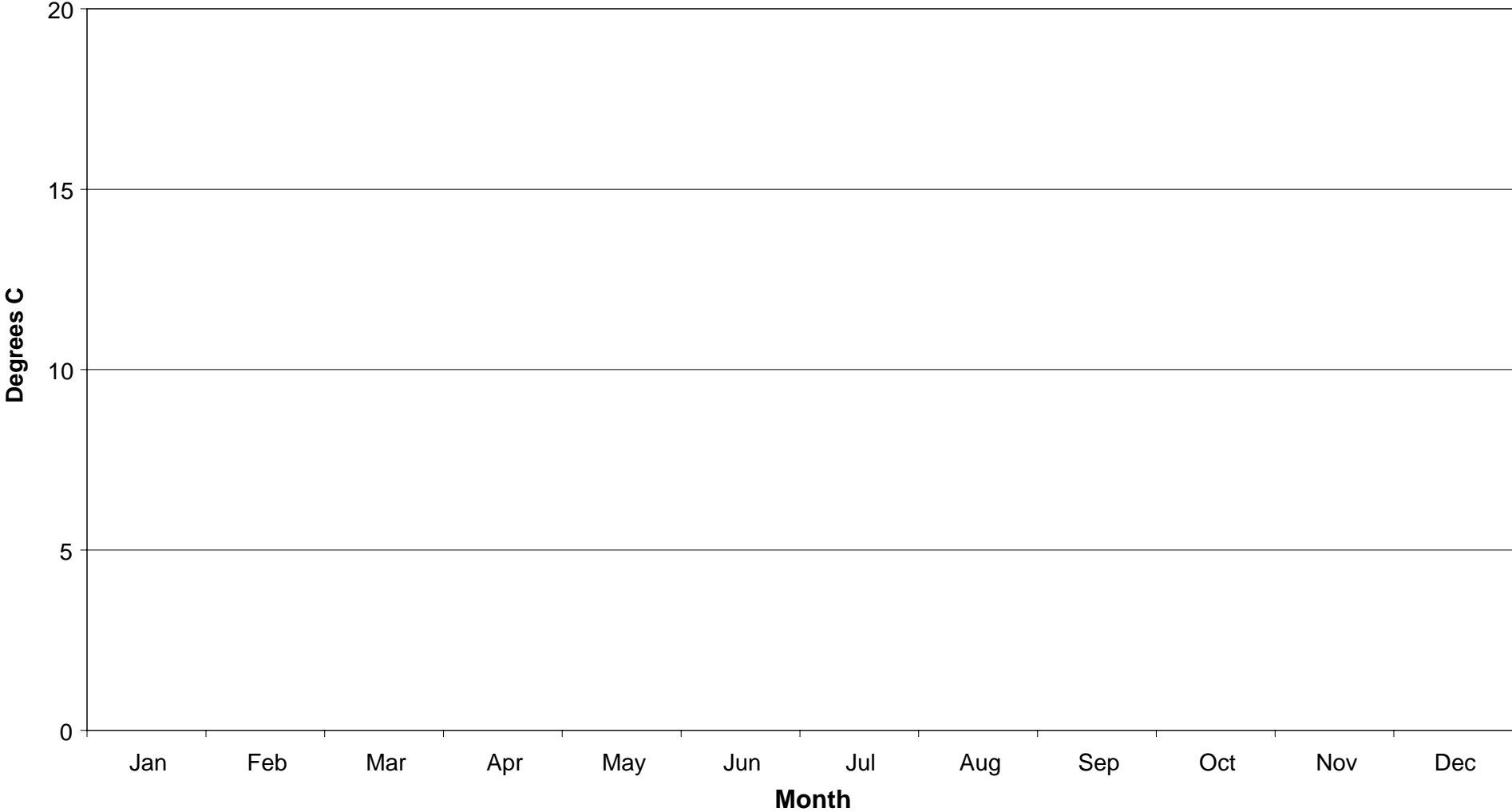
Name _____ Date _____

The table shows temperature data for London.

20. Draw a graph showing the temperature for London.
    Work to the nearest degree.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	3.9	4.2	5.7	8.5	11.9	15.2	17.0	16.6	14.2	10.3	6.6	4.8

London

Degrees C (y-axis: 0, 5, 10, 15, 20)

Month (x-axis: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec)

MSS1/L1.4 L2.4 Temperature, thermometers, scales. HD1/L1.1-L1.4, L2.1-2.4 Extract / represent data. Find mean average and range.
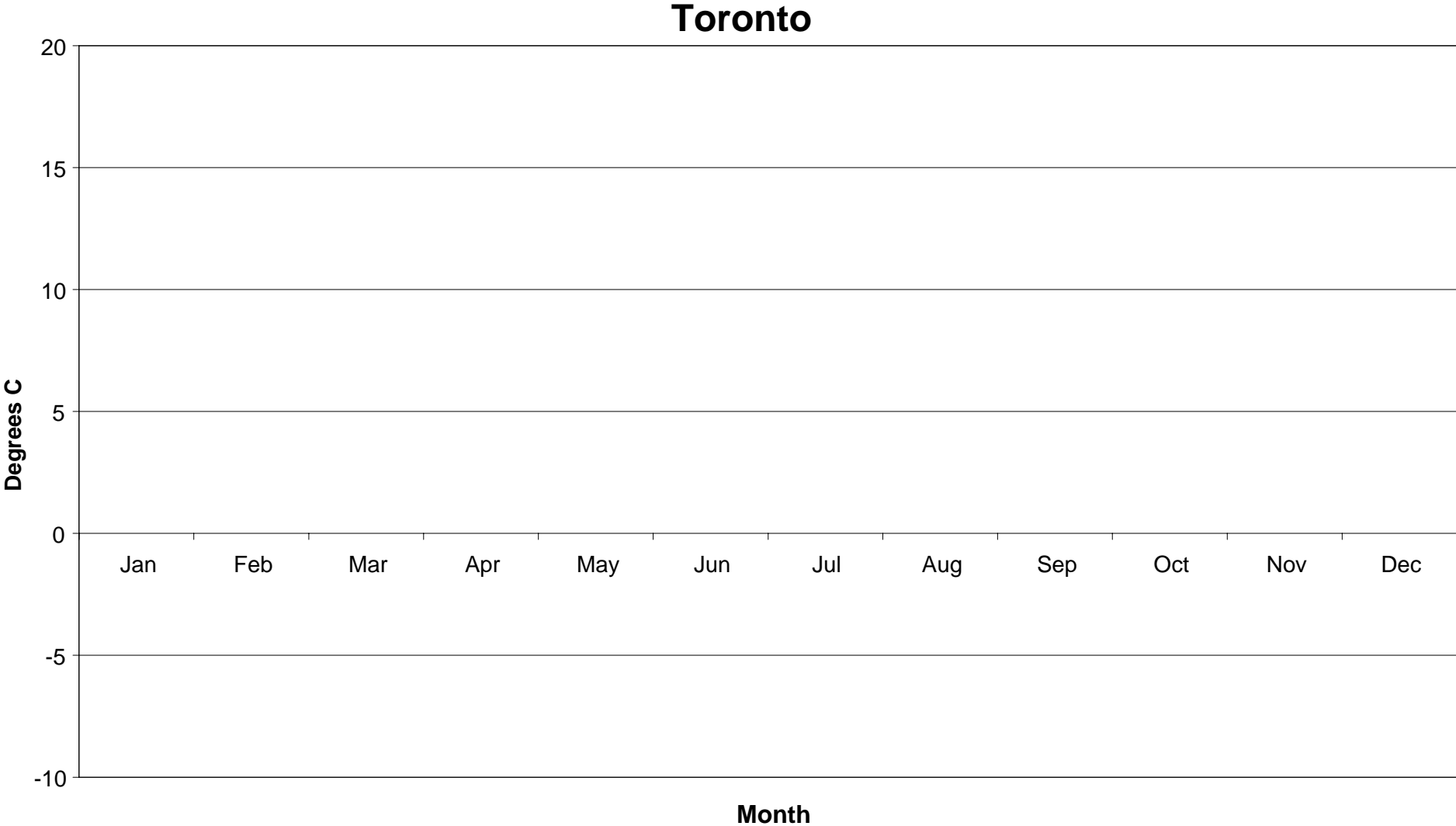
Name _____ Date _____

The chart shows temperature data for Toronto.

21. Draw a chart showing these temperatures.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	-6	-5	-1	6	12	18	21	20	15	9	4	-3

Toronto

Month

MSS1/L1.4 L2.4 Temperature, thermometers, scales. HD1/L1.1-L1.4, L2.1-2.4 Extract / represent data. Find mean average and range.

Name _____ Date _____

Answers

Use professional judgment with answers. For example (depending upon print quality, etc.) it is not always possible to read the given thermometer scales to the nearest degree – especially when reading between marked divisions).

1. Thermometer marked correctly at 45°C

2. Water freezes at 32°F / 0°C

3. Tropical fish are kept at 26°C / 78°F

4. 0°F is -18°C

5. The thermometer shows 40°C

6. The thermometer shows 104°F

7. Temperature falls by 14 degrees Celsius (10 - -4 = 14)

8. 39.8 – 37.9 = 1.9°C

9. Temperature is too high (-15°C)

10. Temperature must be 3 degrees lower to be at -18°C (-15 – 3 = -18)

11. 3°C and 8°C correctly marked on thermometer

12. Lowest temperature on Brampton chart is -7.1°C. Highest is 20.4°C.

13. Range for Brampton is 20.4 - - 7.1 = 27.5 °C (i.e. 20.4 + 7.1 = 27.5)

14. Average temperature for Brampton is 82.1 ÷ 12 = 6.84°C

15. Maximum temperature for Moscow is 18°C

16. Minimum temperature for Moscow is -10°C

17. Moscow temperatures range from -10°C to 18°C = range of 28°C (18 - -10).

18. Average temperature for London is 118.9 ÷ 12 = 9.91°C

19. Range of temperature for London = 17.0 – 3.9 = 13.1°C

20. Correctly drawn chart (this could be a line graph or a bar chart)

21. Correctly drawn chart (this could be a line graph or a bar chart)

References for questions 11, 17, 20.

Hoare R. WorldClimate (2008), http://www.worldclimate.com Viewed 8 April 2008
Brampton Canada weather station 24 hr average temperatures for 323 months between 1878 - 1964.
Viewed 8 April 2008, http://www.worldclimate.com/cgi-bin/data.pl?ref=N43W079+1202+0004435G2
Greenwich Maritime Museum 24 hr average temperatures for 1420 months between 1841 – 1960.
http://www.worldclimate.com/cgi-bin/data.pl?ref=N51W000+1102+0377801G1
*Source of Toronto Data (Q21) unknown.

Main curriculum elements

MSS1/L1.4 Read, estimate, measure and compare temperature using common units and instruments (b) read scales to the nearest labelled and unlabelled division.
MSS1/L2.4 Estimate, measure and compare temperature, including reading scales and conversion tables (a) know how to read a thermometer (b) know that temperature can be measured on Celsius and Fahrenheit scales (read scales to different levels of accuracy, including reading between marked divisions).
HD1/L1.1 Extract and interpret information (e.g. in tables, diagrams, charts and line graphs)
HD1/L1.2 Collect, organise and represent discrete data (e.g. in tables, charts, diagrams and line graphs)
HD1/L1.3 Find the arithmetical average (mean) for a set of data
HD1/L1.4 Find the range for a set of data
HD1/L2.1 Extract discrete and continuous data from tables, diagrams, charts and line graphs
HD1/L2.2 Collect, organise & represent discrete and continuous data in tables, diagrams, charts & line graphs
HD1/L2.3 Find the mean, mode and median, and use as appropriate to compare two sets of data
HD1/L2.4 Find the range and use it to describe the spread within sets of data