**Science 2200 Study Guide**

***STSE 2-3, 4.5 and 4.6***

**STSE 2-3 Extreme Weather (1 worksheet)**

1. Draw a diagram of the layers of air that caused the Ice Storm of 98. Remember, a layer of warm air was wedged between two layers of cold air.
2. Why was the winter of 98 so unusually warm in Eastern Canada?
3. How many people were without electricity in Canada and the USA? What was the longest duration?
4. Estimate the total Canadian economic losses.
5. How many deaths in Canada were directly related to the storm?
6. What is an ice jam? How can it occur?
7. How quickly did the Badger flood of 2003 occur?
8. Why is Badger prone to flooding? How many times has flooding occurred?
9. Describe some of the damage suffered by residents and the town.\*
10. What were some environmental concerns? \*
11. What made the flooding event significantly worst?\*
12. Where did people go during the full evacuation? How long did it last?

**4.5 Regional Weather (2 worksheets)**

Thermals

Land breeze

Sea breeze

1. In which direction does the wind on a lakeshore usually blow on a sunny day? Why? \*
2. Use the particle theory of matter to explain why air becomes less dense as it is warmed.
3. Under what weather conditions (sunny or cloudy, warm or cool) would you expect the strongest thermals? Explain why.
4. Hang gliders and hot-air balloonists share a common interest with birds. What is it?
5. Describe the formation of a convection current on land. Use a diagram.\*
6. When is the best time of day for hot air ballooning? Why? When is it unsafe?\*
7. How do birds use thermals?
8. Use a diagram to explain the formation of a sea breeze.\*
9. Use a diagram to explain the formation of a land breeze.\*
10. What is lake-effect snow? How does it form?
11. What are Chinook winds? How are they formed?

**4.6 Water and Weather (2 worksheets)**

Sublimation

Hail

Dew

Frost

Drizzle

Rain

Freezing rain

Wet snow

Snow

Dry snow

Ice pellets (sleet)

1. How much of the earth is covered by water?
2. How much of the earth’s water is salt water?
3. Where is most of the earth’s freshwater found?
4. What is the hydrosphere?
5. What is the water cycle?
6. Draw the water cycle. \*
7. Starting with evaporation at or near Earth’s surface, list the changes of state that occur to form

(a) dew

(b) frost

(c) drizzle

(d) snow

(e) ice pellets

1. Compare and contrast

(a) drizzle to rain

(b) wet snow and dry snow

1. Of the types of precipitation described in this section, which type do you think would create the most dangerous situation at an airport? Explain your answer.\*
2. In several regions in Canada, salt is spread on roads when they are snowy or icy. Why do you think salt is spread?\*
3. Make a chart comparing the advantages and disadvantages of spreading salt on roads.\*