**SC20F Earth’s Radiation Budget Name:**

1. Identify the following statements as true or false:
   1. \_\_\_\_\_\_\_\_ Air is a mixture of nitrogen and oxygen only.
   2. \_\_\_\_\_\_\_\_ Most of the air is in the troposphere.
   3. \_\_\_\_\_\_\_\_ Weather mainly occurs in the troposphere.
   4. \_\_\_\_\_\_\_\_ The ozone layer is in the stratosphere
   5. \_\_\_\_\_\_\_\_ The “hole” in the ozone layer is responsible for global warming.
   6. \_\_\_\_\_\_\_\_ Water vapour is not part of the hydrosphere.
   7. \_\_\_\_\_\_\_\_ All of the sun’s radiation makes it to the ground.
   8. \_\_\_\_\_\_\_\_ Climate is the weather that happens in an area over a long time.
2. Why does Florida get more of the sun’s radiation than Manitoba?
3. Define albedo. Give a real life example of where you may have observed objects with different albedos.
4. In recent years scientists have observed significant melting of polar ice caps, major glaciers, and a major reduction of arctic sea ice. They attribute these changes to global warming. Use your knowledge of albedo to explain how the loss of all this ice will affect the earth’s radiation budget and what effect it will have on global temperatures.
5. List the following in order of highest to lowest albedo: Dirty snow, clean snow, ocean water, an evergreen forest.
6. Two clouds are about the same size. One is light in colour, and the other is dark in colour. Which do you think would be a better heat sink (absorb more energy) and why?
7. Why is the ozone layer important? What effect on us does the “hole” in the ozone layer have?
8. Give an example of 2 greenhouse gases.
9. Describe the “greenhouse effect”. How does this affect global temperatures?
10. Give two effects of a rise in global temperatures.
11. Give two ways that we can reduce greenhouse gas emissions.
12. What are the 2 major permanent gases that make up our atmosphere. Give their approximate percentages.
13. Give an example of 2 variable gases found in the atmosphere. What do we mean by variable?
14. About how much of the fresh water on earth is accessible for humans to consume?