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21.0.D Materials Readings Biological Adaptations to Temperature

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Reading Materials for Class on Biological Adaptations to Temperature

Some materials were gleaned from various text and on-line sources and assembled such that identifying specific citations to sources was difficult. Instead we note the specific topics used. By looking at student work products from class, the nature of the questions discussed will be clear.

Preclass reading:

Bartholomew, G.A. & Hudson, J. W. (1961) Desert Ground Squirrels. *Scientific American* 204 (5) 107-116.

Irving, L. (1966) Adaptations to Cold. *Scientific American*, 214(1) 94-101.

Excerpts from an appropriate textbook on vertebrate and invertebrate physiology regarding temperature regulation systems and adaptations

In-class reading:

Excerpts involving case studies of how different animal have developed mechanisms or behaviors for adapting to heat regulation. Chem 444 considered the following:

- Fiddler crab carapace color change in response to temperature
- Freezing behavior of fish blood plasma regarding fish survival in freezing waters
- Fennec desert fox vs arctic fox comparative physical and physiological differences
- Snail aggregation in rocky intertidal zones
- Temperature measurements in arterial and venous veins in feet of Antarctic seabird (southern giant petrel)