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# Definitions and Vocabulary

**White Shark:** The largest predatory fish in the ocean. More colloquially called a GREAT white shark but scientists are actively trying to change the sharks’ public image so the ‘great’ part is typically left off.

**Population:** A group of organisms that can interbreed and occupy the same general location. This population does not intermingle with other groups of the same species.

**Activity level:** The amount of activity that an animal undergoes during a given time.

**Biologging Tag:** An electronic on-board computer that scientists put on animals to understand how they move and behave and, in this context, their physiology.

**Energy:** The ability to do work and the amount of calories an animal requires to do this work.

**Metabolism:** The chemical processes in one’s body that convert energy into everything that we do.

**Resting Metabolic Rate:** The amount of energy your body needs to function at rest- this is all the background processes like digestion, circulation, etc.

**Tailbeat Frequency:** How many times the tail of an animal beats from side to side within a given period- typically 1 second. This is used as a proxy for speed/movement similar to footsteps for people.

**Group/class:** a subset of a population that is different than others based on some defining characteristic- like sex, size, color etc.

**Energy expenditure:** The amount of energy expended for a given activity.

**calorie:** The energy needed to raise the temperature of 1 gram of water through 1 °C (now usually defined as 4.1868 joules)

**Calorie:** (Note the large C) Equivalent to a Kcal or 1000 calories. This is typically what we call Calories with food etc. Defined as 4186 joules.

**Joule:** The SI unit of work or energy, equal to the work done by a force of one newton when its point of application moves one meter in the direction of action of the force.

**White shark ecology:** The role that a white shark plays in the ecosystems in which it lives.

**Titles in the Energetic Calculations Spreadsheet**

**Naming Code:** A standardized naming convention that the researchers use to identify key information about a shark.

**Shark Name:** The name the students can provide for each shark. Get creative.

**Location:** The locations (California or South Africa) where the shark was tagged. These groups don’t mix.

**Sex:** Male or female assigned to the shark based on presence or absence of claspers. Claspers are basically modified penis on male sharks that are externally visible.

**Length (cm):** The total length from the snout to the end of the tail of the shark measured in centimeters.

**Weight (k):** The estimated weight of a white shark in Kilograms based on its total length.

**Time for 10 tailbeats:** The length of time it takes to complete 10 tailbeats- comes from spreadsheet (in seconds).

**Tailbeat Frequency (TBF):** Number of tailbeats per second (in Hertz).

**Speed:** How fast an animal goes based on TBF (meters per second).

**Mass Specific Metabolic Rate:** The rate at which an animal burns calories per Kilogram per hour.

**Absolute Metabolic Rate:** The total amount of energy an animal burns per hour. This is dependent on the actual total weight of the animal.

**Energetic Requirements:** Total number of MegaJoules an animal needs to sustain itself for a day.