**Unit 6 Energy Production- cell respiration**

**Knowledge Audit**- follow How To Instructions on the main General Documents page

[www.mskibbio.weebly.com](http://www.mskibbio.weebly.com)

Topic 2.8 Cell Respiration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Objectives:**  Cell respiration is the controlled release of energy from organic compounds to produce ATP  ATP from cell respiration is immediately available as a source of energy in the cell  Anaerobic cell respiration gives a small yield of ATP from glucose  Aerobic cell respiration requires oxygen and gives a large yield of ATP from glucose  **Applications**   |  | | --- | | Use of anaerobic cell respiration in yeasts to produce ethanol and carbon dioxide in baking | | Lactate production in humans when anaerobic respiration is used to maximize the power of muscle contractions |     **Skills**   |  | | --- | | Analysis of results from experiments involving measurement of respiration rates in germinating seeds or invertebrates using a respirometer |     NOS   |  | | --- | | Assessing the ethics of scientific research- the use of invertebrates in respirometers experiments | | **Understandings:**  Organic molecules available for cellular respiration  The steps for glycolysis  The role of ADP and ATP in glycolysis  Identify the location of each step in respiration  Outline the chemical reaction for prokaryotic respiration- anaerobic  Outline the reaction for prokaryotic respiration- aerobic  How ATP allows cellular functions to occur- be able to list them  Explain why a continual source of ATP is required  Explain how bioethanol is produced  Explain the respiration process in bread making  Identify the reactants in beer, wine, bread and biofuels  The role enzymes play in regulating these reactions  Explain the ethics associated with testing respiration on animals  Interpret graphs on cellular respiration  Create graphs from data on cellular respiration  Identify the impact of temp; pH and substrate on respiration  Identify the products and byproducts of cellular respiration  Ethics associated with IBO animal experimentation policy |

**Concept Map:** this should include some topics from first semester and show interconnection of these topics. (enzymes/ biochemistry/ chemical reactions)

**Notecards**: there is a general IB Bio vocabulary list on the main General Documents that should be considered a baseline for vocabulary. It is very important that notecards are clear, have the ability to be read for a quick/flash review and most importantly are original. Diagrams of membrane structures and action potential graphing should be included