

Name: _____

Date: _____

Class: _____ Period: _____

Mr. Calder

IST9 FINAL ASSESSMENT OUTLINE 2014 - 2015

I. How do we know what we know?

A. Observation

Qualitative Observation:

Quantitative Observation:

Inference:

Guess:

B. Ancient Measurements

Examples:

Why they were used:

Why most are not used anymore:

Some are still used:

C. SI (Metric) System

3 Advantages:

Units, abbreviations and measuring tools:

distance:

mass:

liquid volume:

solid volume:

temperature:

time:

Prefixes and abbreviations:

one billion:

one million:

one thousand:

one hundredth:

one thousandth:

one millionth:

one billionth:

How to use measuring tools correctly (and avoid parallax):

electronic balance:

meter stick:

graduated cylinder:

Celsius thermometer:

D. Graphs

“How to Lie with Graphs”:

5 Things all graphs should have:

3 Types of data:

3 Types of graphs:

Evaluating Graphs:

Graphing/Drawing Graphs:

Line of Best Fit:

Extrapolating and Interpolating:

E. Cause and Effect

Experimental Design

Hypothesis:

Independent Variable:

Dependent Variable:

Constants:

Experimental Group:

Control Group:

Induction:

Deduction:

Procedure in “Passive Voice”:

F. Science vs. Pseudoscience

Science:

Pseudoscience:

Superstition:

Trickery:

Magic Tricks:

II. What in the World is Energy?

A. Forms of Energy

The Universe explained (three things the Universe is made up of):

Definition of Energy:

The 5 Forms of Energy:

Mechanical:

Chemical:

Electromagnetic:

Heat:

Nuclear:

B. Conservation and Conversion of Energy

1st Law of Thermodynamics (Conservation of Matter):

Examples of Energy Conversion:

2nd Law of Thermodynamics:

Perpetual Motion:

C. Mechanical Energy

Gravitational Potential Energy:

Elastic:

Plastic:

Elastic Potential Energy:

Kinetic Energy:

Wave:

Amplitude:

Wavelength

Wave Speed:

Frequency:

Doppler Shift / Doppler Effect:

H. Chemical Energy

Reactant:

Product:

Chemical Reaction:

Chemical Equation:

Energy Change Graph:

Exothermic:

Endothermic:

Stable/Unstable:

Reversible/Not Reversible:

Activation Energy:

D. Charge Imbalance

Electron:

Proton:

Conductor:

Insulator:

Surface Peeling:

Electrophorus:

Van de Graff Generator:

E. Current and Circuits

simple circuit:

parallel circuit:

series circuit:

resistance:

Lamp:

Switch:

Resistor:

Variable resistor:

Fuse:

F. Magnets

direction finding without a compass:

magnetic field:

smallest magnet / largest magnet:

north seeking pole/south seeking pole:

magnetization / demagnetization:

permanent magnet:

temporary magnet:

G. Electromagnetism

Electromagnet:

Speaker:

Solenoid:

III. Matter

A. Classes of Matter

Kinetic Molecular Theory:

solid:

liquid:

gas:

mixture:

pure substance:

heterogeneous mixture:

homogeneous mixture:

element:

compound:

B. Physical and Chemical Properties

solubility:

flammability:

C. Models of Matter

neutron:

Atomic Number:

Mass Number:

Bohr Model:

Nucleus:

Electron Cloud/orbit/energy Level:

Valence Electrons:

Electron Dot Diagram:

D. Periodic Table Patterns

Period:

Group:

Metal/Nonmetal/Metalloid:

Alkali Metal/Alkaline Earth Metal/Transition Metal:

Boron/Carbon/Oxygen/Nitrogen Groups:

Halogen:

Noble Gas:

E. Bonding: Ionic and Covalent

Ion:

Ionic Bond:

Covalent Bond:

IV. Cycles of Matter and Flow of Energy in Living Systems

A. Chemical Reactions

6 Types of Chemical Reactions

Combustion:

Synthesis:

Decomposition:

Single Replacement:

Double Replacement:

Acid-Base Reaction:

Balancing Equations

Coefficient:

Subscript:

B. Chemical Energy in Food

calorie:

Kilocalorie (Food Calorie):

calorimetry:

C. Matter and Energy in living Organisms: Cellular Respiration & Photosynthesis

Digestion:

Breathing:

Starch:

Ptyalin:

Glucose:

Aerobic Respiration:

Anaerobic Respiration:

Lactic Acid:

ATP:

Mitochondria:

Chloroplasts:

D. Matter and Energy in Ecosystems

Food Chain:

Trophic Levels:

Water Cycle:

Carbon Cycle:

Nitrogen Cycle:

Phosphorus Cycle: