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7th Grade Integrated Science Tri III Final Exam Study Guide 2018 - 2019

Topic: Intro to Matter (ISN page/s _____) <http://www.batty4science.com/7th-grade-science-blog/monday-31119>

Matter: _____
 Melting Point: _____
 Mass: _____
 Gas: _____
 Condensation: _____
 Volume: _____
 Deposition: _____
 Solid: _____
 Melting: _____
 Freezing Point: _____
 Freezing: _____
 Condensation: _____
 Boiling Point: _____
 Liquid: _____
 Evaporation: _____
 Sublimation: _____

PARTICLE THEORY of MATTER describes both the _____ and _____ of matter.

• All particles have _____ between them. • All particles are in _____
 _____. • All particles have _____ them. • As a particle _____
 _____ energy, it _____ • When particles are _____ to one
 another, the _____ between them _____.

TOPIC: Phase Change, Kinetic/Thermal Energy, Temp (ISN page/s _____) <http://www.batty4science.com/7th-grade-science-blog/wednesday-31319>

Within _____, atoms are _____ in _____. The _____ of _____ depends on the _____ and its current _____ (_____, _____, or _____).

GAS: Particle Motion: molecules are in _____. Molecules have lots of _____. Molecules are spread _____.

Liquid: Particle Motion: molecules _____ or _____ over one another. Molecules have more _____ than a solid but _____ than a gas. Thermal energy is _____ due to _____ movement of particles.

Solid: Particle Motion: molecules are _____ together and _____ in place. Molecules have an _____.

Kinetic Energy: _____
 Particles of _____ are _____ in _____. The _____ of matter depends on the _____ and the _____ of _____.

Thermal Energy: _____
 Thermal _____ causes _____ and _____. We feel _____ when thermal energy is _____. Heat always moves from regions of _____ temp to _____ temp.
 Temperature: _____

Temperature is the _____ of the _____ in a _____.

Topic: Modeling Molecules #12/13 (ISN page/s _____) <http://www.batty4science.com/7th-grade-science-blog/thursday-31419> <http://www.batty4science.com/7th-grade-science-blog/friday-31519>
<http://www.batty4science.com/7th-grade-science-blog/tuesday-31919-113-modeling-molecules-with-candy> <http://www.batty4science.com/7th-grade-science-blog/wednesday-32019-113-modeling-glucose-and-isn-check-10-assigned-and-tri-ii-reflection>

Element: _____
 Atom: _____
 Molecule: _____
 Lewis Dot Structural Model: _____
 Molecular Formula: _____
 Periodic Table of Elements: _____
 Atomic Number: _____
 Element Symbol: _____
 Physical Properties of Metals: • Lustrous: _____
 • Good Conductors of Heat and Electricity: _____
 • High Melting Point: _____
 • High Density: _____
 • Malleable: _____
 • Ductile: _____

WATER: The key to understanding water's (_____) _____ is its _____. A water _____ consists of two _____ atoms _____ to an _____ atom, and the overall _____ is _____. This is because the oxygen atom, in addition to forming _____ with the hydrogen atoms, also carries two _____ of unshared _____. All of the electron _____ (shared and unshared) _____ each other. The most _____ arrangement is the one that puts them _____ apart from each other. This gives the

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_____ end of the water _____ a partial _____ charge, while the _____ end has a partial _____ charge. Water is classified as a _____ molecule because of its polar _____ bonds and its _____ shape. GLUCOSE: Glucose (_____) is a simple _____ sugar, is one of the most important _____ and is used as a source of _____ in animals and plants. Glucose is one of the main products of _____ and starts _____ . The natural form (D-glucose) is also referred to as _____, especially in the food industry.

Ammonia: _____

Methanol: _____

| | | | |
|----------------|------------------|------------------|-------------------|
| Model of Water | Model of Glucose | Model of Ammonia | Model of Methanol |
|----------------|------------------|------------------|-------------------|

TOPIC: Extended Structures - Diamond and Graphite (ISN page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/friday-32219-modeling-molecules-extended-structures-diamond-and-graphite>

DIAMOND: Diamond is an _____ (different form) of _____. The word _____ comes from the Greek word meaning _____. In fact, diamond is the hardest _____ material known and is often used for _____ cutting and polishing _____. This _____ comes from the _____ in diamond being arranged in a strong, _____. Naturally occurring diamonds are formed over _____ of years under intense _____ and _____ deep within the _____. They are often brought closer to the Earth's _____ by deep _____ eruptions. In effect, a _____ is one giant _____ of _____. For this reason, there is no _____ for diamond other than C (s, diamond) where the s means _____. The Carbon _____ bonding _____ repeats itself (and is the only _____ present in _____ Diamonds). It is this bonding pattern that gives _____ its _____.

GRAPHITE: Graphite, also called plumbago or _____, is a _____ composed exclusively of the element _____. Graphite is one of the _____ of carbon. Graphite has the same _____ as Diamond, which is also _____ carbon, but the _____ of Graphite and Diamond is entirely different. This causes almost _____ characteristics in their physical _____. Graphite has a _____ structure that consists of _____ of _____ carbon atoms arranged in widely spaced _____ sheets. Graphite crystallizes in a _____ pattern, in contrast to the diamond where the same element crystallizes in a _____. Graphite is dark gray to black, _____, and very _____, while diamond may be colorless and _____ and is the _____ naturally occurring substance. Graphite has a _____ feel and leaves a black mark. This is how this mineral was given its name, from the Greek verb *graphein*, which means _____.

| | |
|----------------------------------|-----------------------------------|
| Model of Diamond Bonding Pattern | Model of Graphite Bonding Pattern |
|----------------------------------|-----------------------------------|

TOPIC: Properties of Matter - Physical vs Chemical Properties (ISN Page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/monday-32519-properties-of-matter>

Color: _____
 Texture: _____
 Luster: _____
 Density: _____
 Taste: _____
 Electrical Conductivity: _____
 Solubility: _____
 Viscosity: _____
 Odor: _____
 Melting/Freezing Point: _____
 Boiling Point: _____
 Tarnish: _____
 Magnetic Ability: _____
 Flammability: _____
 Thermal Conductivity: _____
 Malleability: _____
 Rust: _____
 Acidity or Basicity (pH): _____
 Physical Property: _____

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Chemical Property: _____

TOPIC: The Periodic Table of Elements (ISN page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/tuesday-40219-periodic-table-of-elements-cornell-notes-and-color-coded-table>

Periodic Table of Elements: _____

Atomic Number: _____

Dmitri Mendeleev: _____

Henry GJ Mosley: _____

Groups: _____

Periods: _____

Electron Dot Diagrams: _____

BE SURE THAT YOUR PERIODIC TABLE OF ELEMENTS IS PROPERLY COLOR CODED!!

TOPIC: Sinking and Floating Soda Pop Phenomenon (ISN page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/tuesday-42319-investigation-16-debrief>

S/F Marshmallows: If _____ stays the _____, and we _____, we can get a _____ object to _____.

D/I Balloon: Forcing air (_____) into the balloon will _____ the _____ and the _____ of the balloon.

S/F Eye Dropper: If _____ stays the _____, and we _____, we can get a _____ object to _____.

If _____ stays the _____, and we _____, we can get a _____ object to _____.

S/F Spheres: Volume is a measure of the _____ of _____ and object _____. Volume of a sphere is _____ but can be taken using the _____ which can be used

to measure the _____ of any object by calculating the amount of _____ it displaces.

S/F Rectangular Prisms: Density is how _____ and object's _____ are. The formula for Density is _____.

More dense objects _____ while less dense objects _____.

To calculate the volume of a rectangular prisms you use the formula _____.

S/F Clay Boats: If _____ stays the _____, and we _____ the _____, we can get a _____ object to _____.

Not every change in _____ results in _____.

M/V/D of Coke and Coke Zero: _____

C: _____

E: _____

E: _____

R: _____

TOPIC: Density Triangle and Sinking/Floating Salt vs Fresh Water (ISN Page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/friday-42619-i-16-salt-water-vs-fresh-water-density-and-density-notes>

DENSITY is a _____ of a _____. It is the _____ between the substance's _____ and how much _____ it takes up (_____). It is usually measured in _____ per _____ or _____ per _____.

MASS is the _____ of _____ or "stuff" that is in a _____. The _____ units of measurement for _____ are _____ or _____.

VOLUME is the amount of _____ that a _____ occupies. The standard _____ of measurement for _____ are _____ or _____.

| Density Formula | Mass Formula | Volume Formula |
|-----------------|--------------|----------------|
|-----------------|--------------|----------------|

TOPIC: Solubility (ISN page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/wednesday-50119-i17-solubility-lab-completion-and-turn-in-and-isn-check-11-assigned>

Matter can be sorted by its _____ which are words that describe the _____ of matter. Solubility is a property of matter that describes how easily a material will _____ in water (or another _____).

High Solubility means that a substance will dissolve _____ and _____.

Low Solubility means that a substance will _____ dissolve, but not _____ or _____.

No Solubility means that a substance does _____ dissolve at _____.

TOPIC: Acids and Bases (ISN page/s _____)

<http://www.batty4science.com/7th-grade-science-blog/thursday-50219-acids-and-bases-notes-and-studentteacher-conferences>

ACIDS: _____

•Have a pH _____ than _____. Substances farther away from _____ on the pH scale are _____ acids •React with _____ and carbonates • Release _____ ions (created when _____ loses an _____ so it has a _____ charge.) • _____ taste • React with _____ to form a _____ and _____ • A

pH change of _____ equals a 10 fold change in the amount of _____. A pH of 4 is _____ more _____ than pH of 5

Acids are substances that _____

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Solute: _____

Solvent: _____