

Videos for Units 1 & 2 (By popular request!)

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Oxidation Reduction Reactions

- Introduction to Redox (13 min)
<https://www.youtube.com/watch?v=5rtJdjas-mY>
- Determining Oxidation Numbers (13 min)
<https://www.youtube.com/watch?v=-a2ckxhfDjQ>
- Practice Determining Oxidation Numbers (15 min)
<https://www.youtube.com/watch?v=zpCy7KwqD08>

Net Ionic Equations

- Introduction to Net Ionic Equations (5 min)
<https://www.youtube.com/watch?v=EQIqcT9a7DY>
- Net Ionic equations Practice (34 min)
<https://www.youtube.com/watch?v=8nVy1NvspMY>

Solubility

- Ways to remember the solubility rules (3 min)
<https://www.youtube.com/watch?v=AsCLuLS-yZY>
- Solubility Explained (9 min)
<https://www.youtube.com/watch?v=E7lXJ5F8zIw>

Titration

- Introduction to Titration (9 min)
<https://www.youtube.com/watch?v=d1XTOsnNlgg>
- Titration Practice (8 min)
<https://www.youtube.com/watch?v=aj34f2Bg9Vw>

Acids and Bases

- Introduction to Bronsted-Lowry Acids and Bases (9 min)
<https://www.youtube.com/watch?v=XVOU9c3crbc&t=1s>
- Acids and Bases (11 min)
<https://www.youtube.com/watch?v=OP6RKqSp1Xw&t=24s>

Molarity

- Finding Molarity (9 min)
<https://www.youtube.com/watch?v=SXf9rDnVFao>
- Using Molarity in Calculations (11 min)
<https://www.youtube.com/watch?v=sWfn8hbXRp8>

Empirical & Molecular Formulas

- Finding Empirical and Molecular Formulas from **Percentages** (8 min)
<https://www.youtube.com/watch?v=AFqwtY7m2PI>
- Empirical Formulas from **Combustion Analysis** (17 min)
<https://www.youtube.com/watch?v=uvR7zNJ1Kol>

Balancing Chemical Reactions

- Balancing Reactions Practice (15 min)
<https://www.youtube.com/watch?v=eNsVaUCzvLA&t=733s>

Chemical Reactions

- Double Replacement Reactions - This includes precipitation reactions (11 min)
<https://www.youtube.com/watch?v=7hVKb4ROjZw>
- Balancing Chemical Reactions (8 min)
<https://www.youtube.com/watch?v=zmdxMlb88Fs>

Stoichiometry

- Dimensional Analysis (5 min)
<https://www.youtube.com/watch?v=jGS5k5EFuUE&t=4s>
- Moles & Molar Mass (watch the first 8 min)
<https://www.youtube.com/watch?v=o7JeKIS9RSQ>
- Moles to Particles Conversions (14 min)
<https://www.youtube.com/watch?v=HMAOrGpkTsQ>
- Grams to Moles Conversions (11 min)
<https://www.youtube.com/watch?v=CMnkSb2YsXI>
- Grams to Moles Part 2 (6 min)
<https://www.youtube.com/watch?v=0RXB8xNmJNM>
- Grams to Molecules (2 min)
[https://www.youtube.com/watch?v=jtbegc8n\]30](https://www.youtube.com/watch?v=jtbegc8n]30)
- Stoichiometry (7 min)
<https://www.youtube.com/watch?v=Gle1bPAZsgg>
- Stoichiometry – Grams to Grams conversions (7 min)
<https://www.youtube.com/watch?v=-1xfnq8yGk8>

Limiting Reactants & Percent Yield

- Limiting Reactants & Excess Reactants (17 min)
<https://www.youtube.com/watch?v=nZOVR8EMwRU>
- Limiting Reactants & Excess Reactants Practice (11 min)
https://www.youtube.com/watch?v=Mlu_v8rE1TY
- Percent Yield (6 min)
<https://www.youtube.com/watch?v=jtAj0s203CI>

Average Atomic Mass

- Average atomic mass (6 min)
<https://www.youtube.com/watch?v=ULRsJYhQmlo>

Naming Chemical Compounds and Writing Chemical Formulas

- Writing Ionic Formulas (11 min)
<https://www.youtube.com/watch?v=URc75hoKGLY>
- Writing Ionic Formulas – Cross Over Method (6 min)
<https://www.youtube.com/watch?v=QYB1VqS0064>
- Writing Formulas with Polyatomic Ions (11 min)
<https://www.youtube.com/watch?v=p9iQ5Qn42DM>
- Naming Ionic Formulas with Transition Metals (10 min)
<https://www.youtube.com/watch?v=Rq0A-AHdB74>
- Naming Molecular Formulas (11 min)
<https://www.youtube.com/watch?v=DejkrR4pvRw&t=37s>
- Naming Acids (13 min)
<https://www.youtube.com/watch?v=5Jb2u9ihfm4>
- Naming Acids Practice (8 min)
<https://www.youtube.com/watch?v=VyjnMk-Ta10>

Unit Conversions

- Dimensional Analysis (5 min)
<https://www.youtube.com/watch?v=jGS5k5EFuUE&t=4s>
- Unit Conversions and Dimensional Analysis (12.5 minutes)
<https://www.youtube.com/watch?v=7N0IRJLwpPI>
- Part 2 Unit Conversions with Multiple Conversion Factors (10 min)
<https://www.youtube.com/watch?v=LdZ000FAfaQ>
- Part 3 Unit Conversions with Combined Units (12 min)
<https://www.youtube.com/watch?v=BKsPi-VXp5U>

Significant Figures & Scientific Notation

- Sig Figs with multiplication and division Part I (7 min)
<https://www.youtube.com/watch?v=5UjwJ9PIUvE&t=46s>
- Sig Figs with multiplication and division Part 2 (5 min)
https://www.youtube.com/watch?v=PNH7_nDE6SQ
- Part 3 – zeros (7 min)
<https://www.youtube.com/watch?v=7b60RZqut0U>
- Sig figs with addition and subtraction (5 min)
<https://www.youtube.com/watch?v=2eXC6s9X6Wc&t=9s>
- Scientific Notation (13 min)
<https://www.youtube.com/watch?v=Dme-G4rc6NI&t=7s>

Heating and cooling curves

- Overview (13:45)
<https://www.youtube.com/watch?v=ys2RHRIc88>
- Turning ice into steam
https://www.youtube.com/watch?v=AhKRUA4_vY

Finding the Enthalpy from Stoichiometry (12:24)

https://www.youtube.com/watch?v=8m_FCe5aCqY

Hess' Law (11:22)

<https://www.youtube.com/watch?v=iETCSFit-zA>

Using Enthalpy of Formation to find the Enthalpy of Reaction (6:26)

https://www.youtube.com/watch?v=PJweE3F_mPY

Using Bond Enthalpy to find the Enthalpy of Reaction (7:48)

<https://www.youtube.com/watch?v=0mLFSDId6pQ>

Specific Heat

- Finding the specific heat of a metal (3:18)
<https://www.youtube.com/watch?v=k0ysK07b0tc>
- Finding the specific heat of a metal with a calorimetry experiment (8:50)
<https://www.youtube.com/watch?v=qASX1L4xalw>

Overview of Thermochemistry (Thermodynamics) (21:17)

<https://www.youtube.com/watch?v=LsqKL3pBVMA&t=11s>

Unit 4 Videos

Chapter 7

Quantum Theory (11:15)

<https://www.youtube.com/watch?v=Jiq3Cf8Mbew>

Quantum Numbers (14:56)

https://www.youtube.com/watch?v=Ej_Zdk04xjg

Quantum Numbers Continued (3:49)

<https://www.youtube.com/watch?v=FsfexX5ULy4>

Electron Configuration (6:12)

<https://www.youtube.com/watch?v=igxUYzbQO7s>

Electron Configurations Part 2 (6:37)

<https://www.youtube.com/watch?v=Uj1hdwTYyAI>

I Heart Electron Config. Song (3:23)

<https://www.youtube.com/watch?v=Vb6kAxwSWgU&t=3s>

Orbital Diagrams (14:30)

<https://www.youtube.com/watch?v=j6AUVMODNKM>

Paramagnetism & Diamagnetism(4:30)

<https://www.youtube.com/watch?v=u36QpPvEh2c>

Absorption and Emission of Energy (10:29)

<https://www.youtube.com/watch?v=AznXSVx2xX0>

Emission Spectrum of Hydrogen (10:49)

<https://www.youtube.com/watch?v=Kv-hRvEOjuA>

Heisenberg Uncertainty Principle (4:43)

<https://www.youtube.com/watch?v=TQKELOE9eY4>

Atomic Orbitals (14:27)

<https://www.youtube.com/watch?v=Ewf7RIVNBSA>

Chapter 8

Atomic Size (18:54)

<https://www.youtube.com/watch?v=DWPRNDKZzd0>

Net Effective Nuclear Charge (4:46)

<https://www.youtube.com/watch?v=IvSmfgxCsNQ>

Atomic Size, Ionic Size, and Net Effective Nuclear Size (17:20)

<https://www.youtube.com/watch?v=kFvEo1qZdNw>

Isoelectronic Series (5:09)

<https://www.youtube.com/watch?v=fbKOanESR7Y>

Ionization Energy and Electron Affinity (12:31)

<https://www.youtube.com/watch?v=rANyD9ETSI4>

Sections 9.2 and 9.3

Ionic Lattices (3:45)

<https://www.youtube.com/watch?v=PNKsbnH1vw8>

Lattice Energy Definition with Animation (3:47)

<https://www.youtube.com/watch?v=YRtdY3QE5ic>

Lattice Energy Comparisons (2:34)

<https://www.youtube.com/watch?v=SEZEFgCnJyg>

Calculating Lattice Energy Using Hess' Law (10:20)

<https://www.youtube.com/watch?v=DI-bwx8r3r8>

Calculating Lattice Energy Using the Born-Haber Cycle (9:36)

<https://www.youtube.com/watch?v=GaENpmydgRg>

Unit 5 Videos

Chapter 9 (not including 9.2-9.3)

Polar & Nonpolar Covalent Bonds (10:24)

<https://www.youtube.com/watch?v=02Q352-Y7iU>

Lewis Dot Structures

Introduction to Lewis Structures (7:26)

<https://www.youtube.com/watch?v=cIuXl7o6mAw>

Lewis Structures with Resonance Structures (4:08)

<https://www.youtube.com/watch?v=MWDL5WCZBzE>

Lewis Structures – Exceptions to the Octet Rule, including Expanded Octets and Radicals (12:34)

https://www.youtube.com/watch?v=96L6_lwyHRM

Lewis Structures – Formal Charges (4:47)

https://www.youtube.com/watch?v=vOFAPlq4y_k

Bond Length, Bond Strength, and Bond Order (4:46)

<https://www.youtube.com/watch?v=fvk8yN4TzGc>

Bond Length and Bond Energy (6:41)

https://www.youtube.com/watch?v=I9jd1Ew_YGU

Using Bond Enthalpy (Bond Dissociation) to find the Enthalpy of a Reaction (11:38)

<https://www.youtube.com/watch?v=0Tm6JMeYX5g>

Chapter 10

VSEPR (12:28)

https://www.youtube.com/watch?v=xNYiB_2u8J4

VSEPR (4:51) – This video has nice animations

<https://www.youtube.com/watch?v=keHS-CASZfc>

Polarity (9:21)

<https://www.youtube.com/watch?v=Jk0kfZ8ZuYs>

Polarity – A more detailed explanation (19:41)

<https://www.youtube.com/watch?v=vVCbJYgitag>

Valence Bond Theory – Hybrid Orbitals (11:57)
<https://www.youtube.com/watch?v=vHXViZTxLXo>

Finding the Hybridization of an atom (1:53)
<https://www.youtube.com/watch?v=4xl0BD-tMeA>

Sigma (σ) and Pi (π) Bonds (9:05)
<https://www.youtube.com/watch?v=D0-oOwzc8P0>

Delocalized Electrons (4:54)
https://www.youtube.com/watch?v=MRfbpL35_n8

Molecular Orbitals (MOs) (You only need to watch 2:00 – 12:00)
<https://www.youtube.com/watch?v=in5FZ1LtBoM>

Molecular Orbital Practice (2:35)
https://www.youtube.com/watch?v=GeqKRk8I_Uk

More MO Practice (2:35)
<https://www.youtube.com/watch?v=zmVpz-XueLo>

Even more MO practice (2:12)
<https://www.youtube.com/watch?v=BwJGfDNKfi4>

Diamagnetism and Paramagnetism with MOs (5:59)
<https://www.youtube.com/watch?v=dVWtvG9ztMQ>