**Chapter 2**

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| **Section** | **Topic** | **Resources/Moodle Videos** | **Project Piece** |
| 2-1 | Inductive Reasoning and Conjecture   * Look at patterns and what appears to be true * Conjecture: statement you believe to be true based on inductive reasoning * Counterexample: an example that makes a conjecture or definition incorrect * Good conjecture has no counter example | Inductive Video  <http://www.youtube.com/watch?v=tPJgCh9FHNI>  Counterexample Video  <http://www.youtube.com/watch?v=MUWUSs23UFQ>  Nike  <http://www.youtube.com/watch?v=l6xVM1nvEas>  Cocacola  <http://www.youtube.com/watch?v=ceTBF1Hik5I>  Kia  <http://www.youtube.com/watch?v=LsJiGF_Groo>  Old Spice  <http://www.youtube.com/watch?v=YlFl1OKRnEM&list=PLoF_PWSjd6xXR5bEE8GXByeLbEhSbipZB>  Pepsi  <http://www.youtube.com/watch?v=40DykbPa4Lc> | * Choose topic * Create conjecture |
| 2-2 | Logic   * Venn diagrams * Truth Tables | Venn Diagram Video  <http://patrickjmt.com/venn-diagrams-an-introduction/> | * Truth Tables |
| 2-3 | Conditional Statements   * If, then form   If hypothesis then conclusion  P -> q   * Converse: q -> p * Inverse: ~p -> ~q * Contrapositive: ~q -> ~p * Verses have same value: either both true, or both false * Conditional and contrapositive always have same truth value * Truth Tables * Biconditional Statement: p -> q and q -> p both true; change to p *if and only if* q | Cond Statements Kline  <http://moodle.allendale.k12.mi.us/mod/assignment/view.php?id=26676>  Biconditional  <http://www.youtube.com/watch?v=rMjdd_g_ukY> | * Converse * Inverse * Contrapositive * Biconditional Statement |
| 2-4 | Deductive Reasoning   * Use logic to figure stuff out * Decide using facts, definitions, and theorems * Inductive: based on personal experience instead of facts * Law of Detachment: If p-> q is ture and p is true, then q is true * Law of Syllogism: If p-> q is true and q -> r true, then p -> r true, (note order doesn’t matter) | Kline video (1st half)  <http://moodle.allendale.k12.mi.us/mod/assignment/view.php?id=26681> | * Use deductive reasoning to show why true * Law of detachment * Law of syllogism |
| 2-5 | Postulates and Paragraph Proofs   * Postulate of Equality: Substitution * Reflexive Prop of Congruence: s congruent to s * Symmetric P.O.C.: a cong b, b cong a * Transitive POC: a cong b, b cong c, so a cong c * Given * Substitution | Kline video (2nd half)  <http://www.youtube.com/watch?v=_l1QG6qgcYk&feature=youtu.be> | (use for Homework sections) |
| 2-6 | Algebraic Proof(wrong pg # given in video)   * Start with given * On Left write what we are doing, on right Why we are doing it | Kline Video (1st half)  <http://www.youtube.com/watch?v=_l1QG6qgcYk&feature=youtu.be> |  |
| 2-7 | Proving Segment Relationships   * 2 column proofs | Short Video  <http://www.youtube.com/watch?NR=1&feature=endscreen&v=WM1SXwifDNY>  <http://www.youtube.com/watch?v=eDlJe5OFnMY&feature=relmfu>  <http://www.youtube.com/watch?v=blo987585q4&feature=relmfu> |  |
| 2-8 | Proving Angle Relationships   * Linear pair Thm: If 2 angles form a linear pair, then they are supp * Cong Supp Thm: If 2 angles are supp to same angle, then 2 angles are cong * Right angle cong thm: all rt angles cong * Cong Complements Thm: If 2 angles comp to same angle, then 2 angles cong   2 Column Proof   * Statements (left) * 1. Given * 2. Defintions/ Postulates/Properties * 3. Substitution * Justifications/Reasons (right)   Plan -> 2 Columns | Kline Video  <http://www.youtube.com/watch?v=lIzAm0MkiI4&feature=youtu.be> |  |