**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
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| 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 conclusionP -> 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
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| 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> |  |