**IB Physics**

Heat and Thermodynamics Syllabus

Chapters 13, 14 and 15

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| Block | In Class : | Due on this class: |
| **1****Sept** **4/5** | -Welcome back!!-IA Research Projects!!**DI**-Basic Kinetics - Temperature, TE, Heat,IE**DI**-15B - Introduction to heat engines: Q, U, W | The Summer review of FA 13.1 and FA 14.1 |
| **2****Sept** **6/9** | **DI**-15E-Laws of Thermodynamics**DI**-13.1-Assumptions and units/Penk Challenge**GW**-FA13.2 (13B&C)**GW**-FA13.1, and W13.1 questions | **VF 13C** - Boltzmann's Equation**VF 15F** - Energy Sources and Transformations  |
| **3****Sept****10/11** | **SA 13.1 (first 30 minutes)****VF**-Videos 15C1&2, Solving W = PV problems **DI**-Processes on PV diagrams (15D1) | Turn in FA 13.1 |
| **4****Sept** **12/13** | **GW**-W15A: C #20-29 Work on PV**GW**-W15B: G #1-4 Internal Energy**GW**-W15B: H #10-13 Adiabatic P and V**GW**-FA 14.1, and W14.1 questions | **VF 15C1&C2** - Work on PV diagrams (previously)**VF 15G** - Internal Energy**VF 15H** - Adiabatic P and V |
| **5**Sept **16/17** | **SA 14.1 (first 30 minutes)****VF**-15I Calculating Entropy**DI**-15J1-Heat Engines Qh, Qc, W and efficiency | Turn in FA 14.1 |
| **6****Sept** **18/19** | **GW**-W15B: I#16-18 Entropy**GW**-W15B: J#29-37 Carnot**GW**-FA 15.1 PV Diagrams | **VF 15I** - Calculating Entropy (previously)**VF 15J2** - Carnot Cycle |
| **7****Sept** **20/23** | **SA 15.1 (first 30 minutes)****VF**-15D2 Solving Thermodynamics Questions**DI**-IB Thermo Questions M17-3-2 #9 | Turn in FA 15.1 |
| **8****Sept** **24/25** | -Newton's Law of cooling lab **GW**-IB Thermo Questions**GW**-FA 15.2 | **VF15D2** - Solving Thermodynamics Questions (prev.)Turn in your IA Research Proposal |
| **9****Sept** **26/27** | **SA 15.2 (first 30 minutes)****IW**-Finish Newton's Law of Cooling**GW-IB Thermo Questions** | Turn in FA 15.2Turn in IB Thermo QuestionsTurn in FA 13.2 |
| **10****Sept 30/****Oct 1** | **GW**-W14B**GW**-IB Heat and Energy questions | **VF 14F** - Heat Transfer**VF 14I** - BBR and Wien**VF 14J** - Radiative heat transfer |
| **11****Oct****2/3** | **GW**-W14B**GW**-IB Heat and Energy questions | **VF 14K** - Albedo**VF 14L** - Greenhouse effect |
| 12**Oct****4/7** | **DI**-Wind Power whiteboards**GW**-IB Heat and Energy questions | **VF 15K** - Wind Power  |
| 13**Oct****8/9** | **IB Exam on Heat and Thermo** | Turn in IB Heat and Energy questions |
| 5 Formative/ 4 Summative Assessments: (10 pts ea)* 13.1 - Ideal Gas Law
* 13.2 - Boltzmann's Equation (no SA)
* 14.1 – Heat and calorimetry
* 15.1 – PV diagrams and work
* 15.2 – Carnot Cycle

IB Thermo QuestionsIB Heat and Energy questionsOne IB Exam (30 pts)One Lab:* Newton’s Law of Cooling – Exponential function of temperature, data taken by computer /40 pts
 | Handouts: |