| Lesson | Number of Days | Comments |
| :---: | :---: | :---: |
| Lesson 8.1 |  | For the Field Project, make sure the student has access to several maps. |
| Lesson 8.2 | 2 |  |
| Lesson 8.3 | 3 | Mastering the physics in this lesson is important. An extra day can be allowed for that. |
| Lesson 8.4 | 2 |  |
| Lesson 8.5 | 2 |  |
| Lesson 8.6 | 1 |  |
| Lesson 8.7 | 2 | Use 1 day for the Field Project and for extra time for homework. |
| Lesson 8.8 | 2 | The Gas Laws in the lesson are used in quantitative Chemistry. |
| Lesson 8.9 | 2 | The student will be required to use a spreadsheet, preferably Microsoft Excel, for the homework. |
| Lesson 8.10 | 1 |  |
| Lesson 8.11 | 1 |  |
| Lesson 8.12 | 2 | Use 1 day for the Field Project. |
| Lesson 8.13 | 1 |  |
| Lesson 8.14 | 2 |  |
| Lesson 8.15 | 3 | An extra day for the homework! |
| Lesson 8.16 | 2 |  |
| Lesson 9.1 | 3 | An extra day for both the group discussion the Field Project. |
| Lesson 9.2 | 2 | An extra day for homework and the the Field Project. |
| Lesson 9.3 | 1 |  |
| Lesson 9.4 | 1 |  |
| Lesson 9.5 | 2 |  |
| Lesson 9.6 |  | This lesson is about a way of counting infinite sets, new to most students. Give them time to dwell on these ideas. We will extend these concepts in Lesson 13.11. |
| Lesson 9.7 | 2 |  |
| Lesson 9.8 | 2 |  |


| Lesson 9.9 |  | 2 extra days for Field Project and extra time for homework. For the first Field Project, you will need at least 100 people. If you cannot find that many, work with the largest number of people that you can. |
| :---: | :---: | :---: |
| Lesson 10.1 | 3 | This is an important introductory lesson to solving equations using algebraic operations. Take the necessary time to master it. |
| Lesson 10.2 | 3 | Another very important lesson. Take the necessary time to master it. |
| Lesson 10.3 | 3 | Questions 22-27 and 38-40 are very important as an understanding of algebraic processes. Take an extra day to work just on them. |
| Lesson 10.4 | 3 |  |
| Lesson 10.5 | 3 |  |
| Lesson 10.6 | 3 | Question 36 is algebraically engaging. Make sure the student knows how to do it. |
| Lesson 10.7 | 3 | You will need uncooked spaghetti to do the Field Project. |
| Lesson 10.8 | 3 |  |
| Lesson 10.9 | 3 | Take some time going over the last homework question. It is a good review of the application of algebraic processes. |
| Lesson 11.1 | 3 |  |
| Lesson 11.2 | 2 |  |
| Lesson 11.3 | 2 |  |
| Lesson 11.4 | 2 |  |
| Lesson 11.5 | 2 |  |
| Lesson 11.6 | 5 | The lesson is extended. Its purpose is to lead the student into reading a sustained mathematical argument. Take plenty of time with it. |
| Lesson 11.7 | 2 | Spreadsheet software, preferably Microsoft Excel, is required to do some of the homework. |


| Lesson 11.8 | 2 | Spend a day working through the <br> last homework problem. |
| :--- | ---: | :--- |
| Lesson 11.9 | 3 |  |
| Lesson 11.10 | Special Project: Encourage <br> students to try to derive the <br> Babylonian algorithm to calcuate <br> cube roots in a similar way in which <br> the algorithm for square roots was <br> derived in Lesson 11.7. |  |
| Lesson 11.11 | 4 |  |
| Lesson 11.12 | 4 | Spend one day on the Newton <br> Earth-Moon problem. |
| Lesson 11.13 | 3 |  |
| Lesson 11.14 | 4 |  |
| Lesson 11.15 | 2 |  |
| Lesson 11.16 | 1 |  |
| Number of Days: <br> Volume 1 | 119 |  |


| Lesson 12.1 | 2 |  |
| :---: | :---: | :---: |
| Lesson 12.2 |  | You can extend the Field Project over a couple of weeks if you want to construct the material or if you can find a slide rule in an antique shop. |
| Lesson 12.3 | 3 |  |
| Lesson 12.4 | 4 |  |
| Lesson 12.5 | 3 |  |
| Lesson 12.6 |  | Dynamic trig software can show the changing trig ratios as $\theta$ ranges from 0 to $2 \pi$. You can program Geometer's Sketchpad to do this. |
| Lesson 12.7 | 3 |  |
| Lesson 12.8 |  | There is important Physics taught in this lesson. |
| Lesson 12.9 | 3 |  |
| Lesson 12.10 |  | Make sure the student can make accurate use of the scientific calculator in this exercises. They are good training for a quantitative course in Physics. Allow for a day to construct the Protractor Sextant and do the Field Project. |


| Lesson 12.11 |  | The last two questions demonstrate the needed mastery of algebraic processes. Take time with them. |
| :---: | :---: | :---: |
| Lesson 12.12 |  | Fractal software is useful for experimenting with the principles in this lesson. |
| Lesson 12.13 | 3 |  |
| Lesson 13.1 | 1 |  |
| Lesson 13.2 | 3 | This is a very important lesson that summarizes the fundamentals of logic. |
| Lesson 13.3 | 3 |  |
| Lesson 13.4 | 3 |  |
| Lesson 13.5 | 3 |  |
| Lesson 13.6 | 2 |  |
| Lesson 13.7 |  | Spend one day on the generalized Projectile motion problem. |
| Lesson 13.8 |  | Take three days to digest the lesson and three for the homework. The lesson length is a way for the student to learn to read extended algebraic arguments. |
| Lesson 13.9 |  | Take the necessary time going through the indirect proofs in the homework. |
| Lesson 13.10 | 3 |  |
| Lesson 13.11 | 2 |  |
| Lesson 13.12 | 3 | Spend one day going over the RSA Security methodology. |
| Lesson 13.13 | 2 |  |
| Lesson 13.14 | - |  |
| Lesson 13.15 |  | Spend one day going over the $\pi$ and the Infinite Geometric Series section. |
| Lesson 13.16 | 3 |  |
| Lesson 13.17 | 2 |  |
| Lesson 13.18 |  | The student is not required to fully grasp the Weierstrass definition of a limit, just see it. |
| Lesson 13.19 |  | Spend at least three days on the homework. |


| Lesson 14.1 | 3 |  |
| :--- | ---: | :--- |
| Lesson 14.2 | 3 |  |
| Lesson 14.3 | 3 |  |
| Lesson 14.4 | 3 |  |
| Lesson 14.5 | 4 |  |
| Lesson 14.6 | 4 | Spend one day of the homework <br> on the Balmer series. |
| Lesson 14.7 | 5 |  |
| Lesson 14.8 | 5 |  |
| Number of Days: <br> Volume 2 | 129 |  |

