

# **NOEO SCIENCE**

## **PHYSICS III: It's FORCEful!**

### Book List

<b>A Weird History of Science:</b>	<b>Foolish Physics</b>
<b>Physical Science in Depth:</b>	<b>Electricity and Electrical Circuits</b> <b>Energy</b> <b>Forces and Motion</b> <b>Light</b> <b>Magnets and Electromagnetism</b> <b>Sound</b>
<b>Physics: Why Matter Matters!</b>	

### Experiment Kit

<b>Thames and Kosmos</b>	<b>Physics Workshop</b>
<b>Electronic Snap Circuits</b>	<b>Snaptricity</b>

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The following is a complete list of items that will be used for the required experiments over the entire 36-week course. This list includes many items that are common in most homes. The list does not include the items that are provided in *Thames and Kosmos Physics Workshop* kit.

<b>Master Supply List</b>	
<b>Item needed:</b>	<b>Week(s) used:</b>
Wooden matchstick	4
Raw potatoes (2)	4
Thread	4
Stopwatch (or watch with a second hand)	6
Tape measure or ruler	6, 7
Protractor	8
Piece of paper	8
C-type battery	9
Small (16 oz.) water bottle	10, 13
Pencil	11
Wooden board or similar object	11
Paper clips	12
Piece of string or dental floss	12
AA batteries (3) for Snaptricity set	17
Wool item	17
Balloon	17, 33
Comb	17
Lemon (or tomato, or grapefruit)	17
Salt	17, 20
Fruit juice	17
Cola	17
Cup or bowl	20
Cardboard tube	33
Rubber bands	33, 34
Ruler	34
Rectangular (shoe) box	34

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<b>Weekly Schedule</b>	
<b>Week 1</b>	<b>A Brief History of Physics</b>
<b>Week 2</b>	<b>A Brief History of Physics</b>
<b>Week 3</b>	<b>A Brief History of Physics</b>
<b>Week 4</b>	<b>Forces and Motion</b>
<b>Week 5</b>	<b>Forces and Motion</b>
<b>Week 6</b>	<b>Forces and Motion</b>
<b>Week 7</b>	<b>Forces and Motion</b>
<b>Week 8</b>	<b>Forces and Motion</b>
<b>Week 9</b>	<b>Forces and Motion; Simple Machines</b>
<b>Week 10</b>	<b>Simple Machines</b>
<b>Week 11</b>	<b>Simple Machines</b>
<b>Week 12</b>	<b>Energy</b>
<b>Week 13</b>	<b>Energy</b>
<b>Week 14</b>	<b>Energy</b>
<b>Week 15</b>	<b>Energy</b>
<b>Week 16</b>	<b>Energy; Electricity</b>
<b>Week 17</b>	<b>Electricity</b>
<b>Week 18</b>	<b>Electricity</b>
<b>Week 19</b>	<b>Electricity</b>
<b>Week 20</b>	<b>Electricity</b>
<b>Week 21</b>	<b>Electricity</b>
<b>Week 22</b>	<b>Electricity</b>
<b>Week 23</b>	<b>Electricity</b>
<b>Week 24</b>	<b>Magnets and Electromagnetism</b>
<b>Week 25</b>	<b>Magnets and Electromagnetism</b>
<b>Week 26</b>	<b>Magnets and Electromagnetism</b>
<b>Week 27</b>	<b>Magnets and Electromagnetism</b>
<b>Week 28</b>	<b>Magnets and Electromagnetism</b>
<b>Week 29</b>	<b>Magnets and Electromagnetism</b>
<b>Week 30</b>	<b>Light</b>
<b>Week 31</b>	<b>Light</b>
<b>Week 32</b>	<b>Light</b>
<b>Week 33</b>	<b>Light; Sound</b>
<b>Week 34</b>	<b>Sound</b>
<b>Week 35</b>	<b>Sound</b>
<b>Week 36</b>	<b>Sound</b>

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## PHYSICS III: It's FORCEful!

<b>Week 1 - A Brief History of Physics</b>				
	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>
<b>Foolish Physics</b>	Pp. 4-7	Pp. 8-11	Pp. 12-15	Pp. 16-19
<b>Physics: Why Matter Matters!</b>	Pg. 4			

**Supply List:** none

**Assignments:**

Read the assigned pages and/or complete the experiment(s). In your own words, describe what you have learned. Use the reproducible sheets to create a science notebook for writing/sketching important ideas. At a *minimum*, be sure to report on the “**Keys to Understanding**” items below. Use the reproducible experiment pages to document your laboratory exercises.

**Keys to Understanding:**

**Day 1** – Describe early physics. **Define: indivisible, properties**

**Day 2** – Who were Archimedes, Nicolaus Copernicus and Tycho Brahe, and how did they contribute to our understanding of physics? **Define: density, astronomer, Solar System**

**Day 3** – Who were Johannes Kepler and Galileo Galilei, and how did they contribute to our understanding of physics? **Define: astrology, astrophysics, propulsion**

**Day 4** – Who were Isaac Newton and Leonardo da Vinci, and how did they contribute to our understanding of physics? **Define: theory, force**