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| **Lesson Plan:** |

**Learning objectives**

1. Understand the difference and give examples of vectors and scalars
2. Understand and apply the vectors with signs relative to the origin and a directional frame of reference
3. Understand and apply the concept of uniform motion in calculating displacement covered from average velocity
4. Interpret and draw conclusions from position time graphs
5. Provide situations for positive and negative acceleration
6. Understand and apply the vectors with signs relative to the origin and a directional frame of reference
7. Understand and apply the concept of uniform acceleration in calculating velocity (average, final, and initial)
8. Interpret and draw conclusions from position-time, velocity-time, and acceleration-time graphs

**BIs**

1. Describe, interpret, calculate, experiment, and graph relationships between displacement, velocity, and acceleration given a storyline

**PLOs**

**C7** demonstrate the relationship between velocity, time interval, and acceleration

**Skills developed to meet development goals**

**Material and equipment needed**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| lab rubric | ticker tape | cart | ramp | books | lab description |
| Reminders powerpoint | Stop watches | meter sticks | measuring tape |  |  |

**Assessment Plan:**

**Formative -** PhET worksheet

**Hook and Introduction**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 12:20 - 12:30 | * Motion video | * Air resistance and friction was mentioned   https://www.youtube.com/watch?v=BDpxSLv89Y8 |  |

**Development**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 12:30 - 1:30 | * Perform lab | * Remind them to make sure teacher signs their data sheet |  |

**Closure**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 1:35 - 1:40 | * Reminders * If have time, can talk about the air resistance of birdies | Reminders:  Group assignment next class - hand-in in class  Quiz next Tues  Lab due next Thurs  Unit Test Weds right after Easter long weekend |  |

Suggested problems:

Activity pg 396

pg 397: 1-3

pg 400: 2, 5, 6

pg 405: 3-4, 6, 7, 10-13

pg 407: 4, 6, 8, 9, 14, 16-19, 21