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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

**BIs**

1. Describe, interpret, calculate, experiment, and graph relationships between displacement, velocity, and acceleration given a storyline
2. Appreciate the importance of units and dimensional analysis
3. Understand the importance of direction in vector quantities and apply this in realistic situations

**PLOs**

**C6** explain the relationship of displacement and time interval to velocity for objects in uniform motion

**Skills developed to meet development goals**

**Material and equipment needed**

- Inquiry video downloaded as backup

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**Assessment Plan:**

**Formative -** Inquiry questions discussed in class and worksheet handed in this class or next class

**Hook and Introduction**

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| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 25 min | * Music background with instructions on powerpoint | Teacher: hands back marked assignments, adjusts the music volume down, and gives next set of instructions (12:45p discuss worksheets). Check student progress after 20mins.  Puts instructions for students done all assignments: Activity 8-1D (page 355), Activity 8-2B (page 367), practice problems on page 370, Activity 8-2D for max walking speed (page 371) - extra practice, optional for class  Students: pull out worksheets from last class and begin to finish their last handout. | * Students can hand in their completed worksheet at the beginning of class |

**Development**

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| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 15 min | * Go over: displacement and velocity worksheets | * Teacher discusses misconceptions and short notes on displacement/velocity on Hovercam while making reference to worksheets * Mention instantaneous velocity - tell them definition but not needed for Grade 10 * Possible questions: Average velocity - why is this so low compared to average speed? * If most people are done all 3 worksheets, can over last worksheet as well (+5mins) | * Can probe extension questions if time allows: ex - what happens if the reference line is shifted so 0 is at the outlet? Would displacement be the same? Position? |
| 25 min | * Students continue working on worksheets | * If students are done the bonus activities, they can use the hallway quietly to test their maximum walking speed using a stop-watch and measuring tape. * If students are done all 3 worksheets, they can be numbered off into 7 groups to design 1 question/group + the answer (10mins) Each group assigns A-D to each group member and each member gets 1 copy of the question. Same lettered members meet to share question (10mins). Original groups join up to share questions (10mins). Each group hands in 1 copy + answer for their question. | * Question difficulty and clarity + answer key |

**Closure**

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| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 15 min | * Go over last worksheet | Go over each question and stress the meaning of the slope.  Students keep all worksheets.  Reminder:  - Computer lab instead of classroom  - Quiz at beginning of class (**LO - 1, 2, 3, position-time graph for 6)**  - Educational game after quiz | **HWK**  1) Quiz next class |