



Alliance For Physics Excellence (APEX)
Fall Weekend Workshop – Cohort 3
Physics Teacher Institute (PTI) Activity Schedule
Alabama A & M University & The University of Alabama in Huntsville



September 18-19, 2015
Day 1 - September 18, 2015

Time	Topic	Leader & Resource
8:00 - 8:15 AM	<input type="checkbox"/> Welcome/Greetings/Announcements	Mohan Aggarwal AAMU and APEX Leadership
8:15 - 9:15 AM	<input type="checkbox"/> ENGAGE: Elicitation: Relative Motion on a Train and discussion <input type="checkbox"/> Relative Motion on Moving Water and discussion <input type="checkbox"/> Relative Motion: Initial Conceptions and Goal Conceptions	Jim Minstrell, Facet Innovations
9:15 - 9:25 AM	<input type="checkbox"/> Development Outline Short Introduction (10 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement Items #1 to #13 on Pages 3 & 4
9:25 – 10:00 AM	<input type="checkbox"/> ENGAGE: View & Discuss the <i>Physics Cinema Classics</i> "Projectile" or have participants view the PSSC film: <i>Free Fall and Projectile Motion</i> starting at 10:45 minutes into video and go to 14 minutes of video. https://www.youtube.com/watch?v=bUBEZuYP_FA <input type="checkbox"/> View & Discuss the three minute Myth Busters video showing a bullet fired versus a bullet dropped at https://www.youtube.com/watch?v=cgIOknFz9L4 (35 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement Item #1 on Page 3
10:00 - 10:45 AM	<input type="checkbox"/> Review of Motion Diagrams on Whiteboard. <input type="checkbox"/> Dual Motion Diagrams on Whiteboard with a horizontal initial velocity. <input type="checkbox"/> Show meterstick model for projectile motion. (45 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement Item #3 on Page 3

8:37 AM, 9/18/15

Time	Topic	Leader & Resource
10:45 - 11:15 AM	<input type="checkbox"/> Projectile Motion Activity #1: <i>Cinema Classics</i> (30 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement on Page 7
11:15 - 12:15 PM	<input type="checkbox"/> EXPLORE: Projectile Motion Activity #2: <i>Range of Projectile</i> <input type="checkbox"/> Ranking Task #19 (60 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement on Page 11
12:15 – 1:30 PM	Buffet lunch at the Bevel Center at UAH (75 minutes)	
1:30 - 3:00 PM	<input type="checkbox"/> Assessing and Evaluating Physics Teaching -- 1 hour and 30 minutes - Dennis Sunal, Tara Ray and JW Harrell	Dennis Sunal, UA-Tuscaloosa
3:00 - 3:45 PM	<input type="checkbox"/> Assessing Inquiry Teaching and Student Learning – 45 minutes – Marilyn Stephens and Dennis Sunal	
3:45 - 4:00 PM	<input type="checkbox"/> Projectile Motion Activity #3: <i>Speed of a Projectile</i> , Discuss only. <input type="checkbox"/> Individualized Birthday Projectile Problem (15 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement on Page 19
4:00 - 4:45 PM	<input type="checkbox"/> Projectile Motion Activity #4: <i>How Fast was Ball Thrown off a Table?</i> <input type="checkbox"/> Ranking Task #47 (45 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement Pages 25 & 29
4:45 - 5:45 PM	<input type="checkbox"/> Introduction to <i>Vernier Video Analysis Resource LivePhoto Physics</i> Making and analyzing a video (.mov, mp4 or .asi format) of a projectile or collision using participants' personal cameras (60 minutes).	Marius Schamschula, Alabama A&M University
5:45 - 6:00 PM	<input type="checkbox"/> Projectile Motion Activity #5: <i>How do vertical rates of fall compare?</i> (Discuss Only) <input type="checkbox"/> Interesting observation by Galileo about falling objects. (15 minutes)	Dan O'Halloran & Tommi Holsenbeck AAPT/PTRA Projectile Motion Supplement on Page 31

Day 2 - September 19, 2015

8:00 – 9:00 PM	<input type="checkbox"/> EXPLAIN: Dual Motion Diagrams on Whiteboard with initial velocity at an angle. <input type="checkbox"/> Show meter stick model for projectile launched at an angle. (60 minutes)	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement Item #7 on Page 4
9:00 - 10:30 AM	<input type="checkbox"/> Projectile Motion Activity #6: <i>Analysis of Projectile Motion Video? (Vernier Video Analysis DVD)</i> <input type="checkbox"/> Include Quadratic Fit with modified 4-step analysis (90 minutes)	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement on Page 37
10:30 - 11:45 AM	<input type="checkbox"/> Projectile Motion Activity #8: Projectile Motion at an Angle <input type="checkbox"/> Development of Projectile Motion equations by analysis of projectile data. (75 minutes)	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement on 57
11:45 - Noon	<input type="checkbox"/> Start Projectile Motion Activity #9: <i>Angry Birds Projectile Motion Analysis</i> (15 minutes)	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement on Page 69
Noon - 1:00 PM	Buffet lunch at the Bevel Center at UAH (60 minutes)	
1:00 - 1:30 PM	<input type="checkbox"/> Finish Projectile Motion Activity #9: <i>Angry Birds Projectile Motion Analysis</i> <input type="checkbox"/> Include Quadratic Fit with modified 4-step Analysis (30 minutes)	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement on Page 69
1:30 - 1:55 PM	<input type="checkbox"/> EVALUATION: Projectile Motion Activity #14: <i>Review Problems</i> Assign problem #9b, page 105. (25 minutes) <input type="checkbox"/> Review Kinematics and Momentum Assessment	Jim & Jane Nelson AAPT/PTRA Projectile Motion Supplement on Page 103
1:55 - 2:00 PM	<input type="checkbox"/> Workshop Evaluation/Closing Remarks	Mohan Aggarwal AAMU & APEX Leadership

Please ask participants to bring their camera, cell phone, or computer that can take video. We are planning to take a video that can be analyzed using Logger Pro.