

AP Physics C - Syllabus for 9/14/2020 - 9/25/2020 (Wednesday office hour from Noon - 1:00 PM)

Unit 1--(Kinematics 1-D and 2-D, Unit 1 in AP Course Exam Description)

Unit 1 standards:

- **Standard 1 - Explain the relationships among the vector quantities of position, velocity, and acceleration for the motion of a particle along a straight line**
- **Standard 2 - Explain how to correctly apply different models (no acceleration, constant acceleration, changing acceleration) of motion for an object moving in two dimensions using the independence of vector quantities (position, velocity, acceleration)**

Learning targets for Unit 1

- I can describe how the parts of an equation are related to the physical motion of a particle and evaluate for consistency
- I can make and analyze kinematics graphs to show consistency for a physical model of motion
- I can determine functions of position, velocity, and acceleration that are consistent with each other
- I can use equations to calculate unknown variables of motion
- I can use calculus when needed to solve for models of motion (differential equation as an example)
- I can use constant velocity and constant acceleration models simultaneously to solve for unknowns for a particle in projectile motion
- I can derive an expression for the position, velocity, or acceleration of a particle at some point in its trajectory
- I can describe the motion of an object in 2-D motion in writing or graphically using an understanding of slope (derivative), intercepts, asymptotes and area under the curve (integral).

Daily schedule	Cohort A	Cohort B
Monday, 9/14	<p>In person - Discuss parts 1 & 2 of scaling activity and do part 3 in class -- Turn in tomorrow in class</p> <p>Get 2nd book</p> <p>Hand out TIPERS (kinematics) and assign (odds or evens) for Monday 9/21</p> <p>Graphical Analysis graphs from 2 data sets due at 11:59 AM today - make sure to 'turn in' on Google Classroom</p> <p>ExpertTA due at 4:59 AM on Tuesday</p>	<p>Virtual - Ch. 1 conceptual questions 6 & 7 and exercises/problems 3, 8, 16, 32, 42, 47, 52, & 57 due on Thursday 9/17 in class</p> <p>Complete any remaining ExpertTA</p> <p>Graphical Analysis graphs from 2 data sets due at 11:59 PM today - make sure to 'turn in' on Google Classroom</p>
Tuesday, 9/15	<p>In person -</p> <p>Go over ExpertTA, if needed</p> <p>Stacks of kinematics curves</p> <p>Ch. 1 conceptual questions 6 & 7 and exercises/problems 3, 8, 16, 32, 42, 47, 52, & 57 due on Mon. 9/21 in class</p>	<p>Virtual - Read and take notes on Chapter 3 (Vectors and coordinate systems) for a reading quiz on Friday (it's a fairly short chapter, but a little confusing)</p> <p>Complete assigned TIPERS for class on Thursday (odds or evens)</p>
Wednesday, 9/16	<p>Virtual - Left foot activity as a mini-quiz - due at 11:59 PM today</p> <p>Work on Ch. 1 HW or TIPERS</p>	<p>Virtual - Left foot activity as a mini-quiz</p> <p>Complete assigned TIPERS for Thursday</p>
Thursday, 9/17	<p>Virtual - Ch. 1 conceptual questions 6 & 7 and exercises/problems 3, 8, 16, 32, 42, 47, 52, & 57 due on Monday 9/21</p>	<p>In person - Go over ExpertTA, if needed (and any questions on Ch. 3 reading)</p>

		<p>Go over CH. 1 HW, discuss</p> <p>Stacks of kinematics curves</p> <p>Check TIPERS and have students present some TIPERS (post answers to students)</p>
Friday, 9/18	Virtual - Read and take notes on Chapter 3 (Vectors and coordinate systems) for a reading quiz on Tuesday (it's a fairly short chapter, but a little confusing)	<p>In person - Chapter 3 reading quiz (notes required) and discussion of unit vectors, etc.</p> <p>Finish going over TIPERS</p> <p>Begin ILDs (Motion with Carts)</p>

Daily schedule	Cohort A	Cohort B
Monday, 9/21	<p>In person - Go over CH. 1 HW, discuss (any questions on Ch. 3 reading?)</p> <p>Stacks of kinematics curves</p> <p>Check TIPERS and have students present some TIPERS (post answers to students)</p>	<p>Virtual - Read chapters 1-3 (pages 3-21) from <i>5 Steps to a 5</i> and be prepared to discuss on Thursday, 9/24</p> <p>Sample AP practice problem - Do work in comp bok and submit by Tues. 9/22 at 11:59 PM</p>
Tuesday, 9/22	<p>In person - Chapter 3 reading quiz (notes required) and discussion of unit vectors, etc.</p> <p>Finish going over TIPERS</p> <p>Begin ILDs (Motion with Carts)</p>	<p>Virtual - HW: Read Ch. 2 (a heavy skim, but there won't be a reading quiz on this chapter if you ask me questions. There will be one if you don't) for Thursday, 9/24</p>
Wednesday, 9/23	<p>Virtual - Go to AP Classroom, and watch the assigned videos and give feedback to us as an exit ticket today by 11:59 PM</p>	<p>Virtual - Go to AP Classroom, and watch the assigned videos and give feedback to us as an exit ticket today by 11:59 PM</p>
Thursday, 9/24	<p>Virtual - Read chapters 1-3 (pages 3-21) from <i>5 Steps to a 5</i> and be prepared to discuss on Monday 9/28</p> <p>Sample AP practice problem - Do work in comp bok and submit by Fri. 9/25 at 11:59 PM</p>	<p>In person - Ch. 2 discussion (or reading quiz if discussion is lacking)</p> <p>Finish ILD's (Motion with Carts)</p> <p>Discuss <i>5 Steps to a 5</i> reading</p> <p>Preview "Finding μCar lab activity"</p>
Friday, 9/25	<p>Virtual - Virtual - HW: Read Ch. 2 (a heavy skim, but there won't be a reading quiz on this chapter if you ask me questions. There will be one if you don't) for Monday, 9/28</p>	<p>In person - "Finding μCar lab activity" - outside - if weather permitting, or ...</p> <p>Card sort! Ideally kids hands-on and then a Desmos example</p> <p>Hand out Ch. 2 conceptual questions</p>

*A look ahead... We will have a **quiz** (~ 30 minutes) in class on Friday, October 2 (Cohort B) and Tuesday, October 6 (Cohort B). They'll be similar in content but two completely different versions. Note that these plans are far out enough to be subject to change a lot.*

Daily schedule	Cohort A	Cohort B
Monday, 9/28	<p>In person - Ch. 2 discussion (or reading quiz if discussion is lacking)</p> <p>Finish ILD's (Motion with Carts)</p> <p>Discuss 5 Steps to a 5 reading</p> <p>Preview "Finding μCar lab activity"</p>	<p>Virtual - Work on Ch. 2 conceptual questions (handed out Friday) AND Ch. 2 exercises/problems 7, 10, 20, 27, 39, 49 & 57 for Thursday 10/1 by class time</p>
Tuesday, 9/29	<p>In person - "Finding μCar lab activity" - outside - if weather permitting, or ...</p> <p>Card sort! Ideally kids hands-on and then a Desmos example</p> <p>Hand out Ch. 2 conceptual questions</p>	<p>Virtual - Continue with and finish yesterday's work</p> <p>Preview (1) <i>Finding 'g' lab using ramps and carts lab</i> and (2) <i>Context Rich Kinematics</i> with your lab partner(s) by contacting them through the Phone Tree or Group Me. Be prepared to discuss your methods on Friday for the lab, and have at least a start to your answer for the Context Rich Kinematics</p>
Wednesday, 9/30	<p>Virtual - Complete Personal Progress Check (Multiple Choice Questions) on AP Classroom by 11:45 PM tonight for Unit 1</p>	<p>Virtual - Complete Personal Progress Check (Multiple Choice Questions) on AP Classroom by 11:45 PM tonight for Unit 1</p>
Thursday, 10/1	<p>Virtual - Virtual - Work on Ch. 2 conceptual questions (handed out Tuesday) AND Ch. 2 exercises/problems 7, 10, 20, 27, 39, 49 & 57 for Monday 10/5 by class time</p>	<p>In person - Card sort (or "Finding μCar lab activity" - outside), whichever one was not done on Friday</p> <p>Questions on the AP Progress check?</p> <p>Whiteboard, go over CH. 2 HW</p>
Friday, 10/2	<p>Virtual - Continue with and finish yesterday's work</p> <p>Preview (1) <i>Finding 'g' lab using ramps and carts lab</i> and (2) <i>Context Rich Kinematics</i> with your lab partner(s) by contacting them through the Phone Tree or Group Me. Be prepared to discuss your methods on Friday for the lab, and have at least a start to your answer for the Context Rich Kinematics</p>	<p>In person - Quiz (formula sheet and calculators allowed)</p> <p>Clean up from Thursday, assign due date for write-up on "Finding μCar lab"</p>