

Pacing Guide

The *Pacing Guide* below is designed so that you have the option to complete *Active Physics* during the school year. The *Plan A Pacing Guide* allows the students to complete all the *Investigates*. If you are a new teacher, or unfamiliar with the program, you may have difficulty adhering to *Pacing Guide A*. *Pacing Guide B* suggests places where either time or equipment may be saved if it becomes necessary to

complete the chapter in the allotted time. To reach this goal, many of the investigations are teacher-led demonstrations rather than student-centered inquiry investigations. This will save time and require less equipment than the optimal inquiry-based instruction that the curriculum is intended to provide.

Note: Each “day” assumes a 45-minute class period, or one half of a 90-minute block.

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
1	<p><i>Scenario, Your Challenge, Criteria for Success, Scoring Rubric.</i></p> <p>Section 1 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> and discuss <i>Physics Talk</i>. Review <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i>.</p>	Read <i>Physics Talk</i> and answer <i>Physics to Go</i> Questions 2–8.	1	See Plan A.	
2	<p>Review <i>Physics to Go</i> questions.</p> <p>Section 2 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i>, all steps.</p>	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions. For extra credit, find out how astronomers know there are planets revolving around other stars and write a paragraph describing how it is done.	2	<p>Review <i>Physics to Go</i> questions.</p> <p>Section 2 Do <i>What Do You See?</i> and <i>What Do You Think?</i> Teacher does <i>Investigate</i> with students as a class demonstration. Students do calculations.</p>	Only one ruler required
3	<p>Review previous night's <i>Checking Up</i> questions. Discuss the <i>Physics Talk, What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i>.</p> <p>Section 3 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i>, Part A.</p>	Answer <i>Physics to Go</i> Questions 2, 3, 5, 7, 9, 13, and 14.	3	See Plan A.	
4	<p>Review <i>Physics to Go</i> questions. Students complete <i>Investigate</i>, Part B. Discuss <i>Physics Talk, What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i>.</p>	Read <i>Physics Talk</i> and answer <i>Physics to Go</i> Questions 1, 3, 4, 5, 7, and 8.	4	See Plan A.	

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
5	Review previous night's <i>Physics to Go</i> . Section 4 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students start <i>Investigate</i> .	Read <i>Physics Talk</i> and answer the <i>Checking Up</i> questions.	5	Review previous night's <i>Physics to Go</i> . Section 4 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Teacher conducts <i>Investigate</i> as a whole-class demonstration. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Requires only one ruler and protractor
6	Students finish <i>Investigate</i> . Discuss <i>Physics Talk</i> . Review <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> . Complete an Internet search for "objects thrown on the Moon" to show students.	Answer <i>Physics to Go</i> Questions 2–5 and 7. For extra credit, look up the record for the longest home run in baseball, and convert this to Moon distances.			
7	Review previous night's <i>Physics to Go</i> . Section 5 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> .	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions.	6	Review the previous night's <i>Physics to Go</i> . Section 5 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Teacher conducts the <i>Investigate</i> as a whole-class demonstration using only one student to jump. The class analyzes the data from the student's jump.	Two meter sticks, black pen and a pad of sticky notes
8	Review <i>Investigate</i> , <i>Physics Talk</i> and <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Answer <i>Physics to Go</i> Questions 1–7.	7	See Plan A.	
9	Review <i>Physics to Go</i> questions. Students start the <i>Mini-Challenge</i> .	Work on <i>Mini-Challenge</i> .	8	See Plan A.	
10	Students discuss <i>Mini-Challenge</i> presentations in their groups, and then present their work to the class.	Refine <i>Mini-Challenge</i> presentations based on class feedback.	9	See Plan A.	

Pacing Guide *(continued)*

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
11	Section 6 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> , Steps 1–4.	Read <i>Physics Talk</i> ; answer <i>Checking Up</i> questions.	10	Section 6 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Teacher conducts <i>Investigate</i> , all steps. Discuss <i>Physics Talk</i> , <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Requires only one set of different balls to drop, only one set of ring stands, crossarm, right-angle clamp, two meter sticks, string, scissors, tape and drilled balls of different masses
12	Students complete <i>Investigate</i> , Steps 5–7. Discuss <i>Physics Talk</i> and review <i>Checking Up</i> questions. Review <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Answer <i>Physics to Go</i> Questions 1–6.			
13	Review previous night's <i>Physics to Go</i> . Section 7 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> , all steps. Conduct an Internet search for golf on the Moon to see Alan Shepard's golf shot on the Moon.	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions. For extra credit, find the coefficient of friction for three different types of athletic shoe soles. (For example, cross trainers vs. running shoes.)	11	See Plan A.	
14	Review the results of the <i>Investigate</i> . Discuss the <i>Physics Talk</i> , and review the <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Answer <i>Physics to Go</i> Questions 1–6, 8, and 10.	12	See Plan A.	
15	Review the <i>Physics to Go</i> . Section 8 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> , Steps 1–5.	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions. For extra credit, find a video of a running giraffe. By timing the leg swings, estimate the length of its legs.	13	Review <i>Physics to Go</i> . Section 8 <i>You See?</i> and <i>What Do You Think?</i> Teacher conducts <i>Investigate</i> , all steps, as a whole-class demonstration. Discuss <i>Physics Talk</i> and review <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Requires only one ring stand, crossarm, right-angle clamp, meter stick, stop watch and one set of cylinders
16	Students complete <i>Investigate</i> , Steps 6–9. Discuss <i>Physics Talk</i> and <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Answer <i>Physics to Go</i> Questions 2–5, 7, and 9.			

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
17	Review <i>Physics to Go</i> homework. Section 9 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> , Steps 1–3.	Read <i>Physics to Go</i> , and answer <i>Checking Up</i> questions.	14	Review <i>Physics to Go</i> homework. Section 9 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Teacher conducts <i>Investigate</i> as a whole-class demonstration. Review <i>Physics Talk</i> and <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Requires only one set of coffee filters, one stopwatch, one badminton racket, one shuttlecock, one practice golf ball and one regular golf ball
18	Students complete <i>Investigate</i> Steps 4 and 5. Review <i>Physics Talk</i> and <i>Checking Up</i> questions. Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Answer <i>Physics to Go</i> Questions 2–4, 6, and 7.			
19	Review <i>Physics to Go</i> homework. Students start work on the <i>Chapter Challenge</i> .	Work on <i>Chapter Challenge</i> .	15	See Plan A.	
20	Students work in groups on <i>Chapter Challenge</i> .	Finish work on <i>Chapter Challenge</i> .	16	See Plan A.	
21	<i>Chapter Challenge</i> presentations. Review for <i>Physics Practice Test</i> .	Study for <i>Physics Practice Test</i> .	17	See Plan A.	
22	<i>Physics Practice Test</i> .		18	See Plan A.	

Implementation Chart

Hopefully, as you become more experienced and comfortable with the curriculum, you will shift to small-group *Investigates*. Accordingly, below is an *Implementation Chart* that suggests a three-year timetable to expand students' role in the chapter by having them do more of the *Investigates*.

Although this will require a slightly greater expenditure of time and more equipment, the benefits to the student will be manifest. Your goal should be to have the students complete almost all of the investigations rather than you having to provide the maximum opportunity for inquiry.

	Section 1 Investigate	Section 2 Investigate	Section 3 Investigate	Section 4 Investigate	Section 5 Investigate	Section 6 Investigate	Section 7 Investigate	Section 8 Investigate	Section 9 Investigate
Year 1	Small group	Whole class	Small group	Small group	Whole class	Whole class	Small group	Whole class	Whole class
Year 2	Small group	Small group	Small group	Small group	Whole class	Small group	Small group	Whole class	Whole class
Year 3	Small group	Small group	Small group	Small group	Small group	Small group	Small group	Small group	Small group