Pacing Guide

The *Pacing Guide* below is designed so that you have the option to complete the first eight chapters of *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 (small-group *Investigates*)	Homework (for Plan A and Plan B)	Day	Plan B (combination of whole-class and small-group *Investigates*)	Plan B Equipment Reduction
1	Review the *Scenario* and *Chapter Challenge*, develop scoring rubric with students. ***Section 1*** Discuss the *What Do You See? and What Do You Think?* Students perform *Investigate* Part A.	Collect a home inventory, listing all the appliances in their homes that use electricity not provided by batteries.	1	**See Plan A.**	
2	Students share lists of home appliances with class and develop master list. Students perform *Investigate* Part B. Discuss *Physics Talk, What Do You Think Now?,* and *Reflecting on the Section and the Challenge.*	Read *Physics Talk* and answer *Physics to Go* Questions 1, 2, 5, and 7-10.	2	**See Plan A.**	
3	Go over previous night's *Physics to Go.* ***Section 2*** Do *What Do You See?, What Do You Think?* Students do *Investigate* Part A.	Read *Physics Talk* and answer *Checking Up* questions.	3	**See Plan A.**	
4	Students perform *Investigate* Part B, discuss *Physics Talk,* and review *Checking Up* questions, Discuss *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Answer *Physics to Go* Questions 1–4.	4	**See Plan A.**	
5	Go over *Physics to Go* questions. ***Section 3*** Discuss *What Do You See?* and *What Do You Think?* Students perform *Investigate* Part A.	Read *Physics Talk* and answer *Checking Up* questions.	5	**See Plan A.**	

Day	Plan A (small-group *Investigates*)	Homework (for Plan A and Plan B)	Day	Plan B (combination of whole-class and small-group *Investigates*)	Plan B Equipment Reduction
6	Review *Investigate* Part A. Students perform *Investigate* Part B. Discuss *Physics Talk* and review *Checking Up* questions. Discuss *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Answer *Physics to Go* Questions 2–6, 8, and 9	6	**See Plan A.**	
7	Review *Physics to Go* homework. ***Section 4*** Discuss *What Do You See?* and *What Do You Think?* Students perform the *Investigate*.	Read *Physics Talk* and answer *Checking Up* questions.	7	Review *Physics to Go* homework. Do *What Do You See?* and *What Do You Think?* Teacher does *Investigate* as a class demonstration. Discuss *Physics Talk*, and *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Requires only one set of resistors (5 Ohm 10 Watt, 10 Ohm 10 Watt, 15 Ohm 10 Watt) and wires, V/I meter, and one variable voltage power supply (or 5 D-cell batteries and holders)
8	Review results of *Investigate*. Discuss *Physics Talk* and *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Answer *Physics to Go* Questions 1-3 and 6-9.			
9	Review *Physics to Go* questions. ***Section 5*** Discuss *What Do You See?* and *What Do You Think?* Students perform *Investigate* Step 1, teacher does Step 2, and students perform Steps 3–5. Discuss *Physics Talk* up to "Blowing a Fuse."	Read *Physics Talk* and answer *Checking Up* questions.	8	**See Plan A.**	
10	Review *Investigate,* discuss remainder of *Physics Talk* and *Checking Up* questions. Discuss *What Do You Think Now?* and *Reflecting on the Section and the Challenge.* ***Section 6*** Discuss *What Do You See?* and *What Do You Think?*	Answer *Section 5 Physics to Go* Questions 1, 3, 4, 8, 10 12, and 13.	9	Discuss remainder of *Physics Talk* for *Section 5* and *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.* ***Section 6*** Do *What Do You See?* and *What Do You Think?* Teacher does *Investigate* as a class demonstration.	Requires only one set of 14 wires, light bulbs with bases, V/I meter, hand-held generator, SPST switches, and masking tape
11	Review *Physics to Go* questions. Students perform the *Investigate*. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Read *Physics Talk*. Answer *Checking Up* questions.			
12	Discuss *Physics Talk* with numerical examples and review *Checking Up* questions.	Read *Physics Talk* and answer *Physics to Go* Questions 1-10.	10	**See Plan A.**	
13	Review *Physics to Go* homework. Students start *Mini-Challenge.*	Answer *Physics to Go* Questions 11-20.	11	**See Plan A.**	

CHAPTER 6

Pacing Guide *(continued)*

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
14	Review *Physics to Go* homework. Students continue working on *Mini-Challenge.*	Finish work on *Mini-Challenge.*	12	**See Plan A.**	
15	Collect and review student *Mini-Challenge* assignments. **Section 7** Discuss *What Do You See?* and *What Do You Think?* Students perform *Investigate.*	Read *Physics Talk,* and answer *Checking Up* questions.	12	**See Plan A.**	
16	Review results of *Investigate*. Discuss *Physics Talk* with numerical examples. Review *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.* **Section 8** Do *What Do You See?* and *What Do You Think?*	Answer *Physics to Go* Questions 1, 3–6, and 8.	14	**See Plan A.**	
17	Go over *Physics to Go* homework. **Section 8** Students perform *Investigate*.	Read *Physics Talk* and answer *Checking Up* questions.	15	Go over *Physics to Go* homework. **Section 8** Teacher does *Investigate* as a class demonstration. Discuss *Physics Talk*. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.* **Section 9** Do *What Do You See?* and *What Do You Think?*	Requires only one calorimeter with heating coil, or one separate heating coil of known power, one stopwatch, styrene-foam cup, graduated cylinder, stirring rod, thermometer, and scale
18	Review *Investigate* and *Physics Talk,* including *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.* **Section 9** Do *What Do You See?* and *What Do You Think?*	Answer *Physics to Go* Questions 2, 3, 6, and 7.			
19	Review *Section 8 Physics to Go* questions. Students do *Section 9 Investigate*.	Read *Section 9 Physics Talk*, and answer *Checking Up* questions.	16	Go over *Physics to Go* questions. Teacher does *Section 9 Investigate* as a class demonstration. Discuss *Physics Talk* including *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Requires only hot plate, power coil, stopwatch, beaker, stirring rod, thermometer, and scale
20	Discuss *Physics Talk,* including *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge.*	Answer *Physics to Go* Questions 1-10.			

Day	Plan A (all activities by students)	Homework	Day	Plan B	Plan B Equipment Reduction
21	Review *Physics to Go* questions. Review *Challenge and Scoring Rubric*. Students start work on *Chapter Challenge*.	Work on *Chapter Challenge*.	17	**See Plan A.**	
22	Students continue work on *Chapter Challenge*.	Work on *Chapter Challenge*.	18	**See Plan A.**	
23	*Chapter Challenge* presentations	Study for *Physics Practice Test*.	19	**See Plan A.**	
24	*Physics Practice Test*		20	**See Plan A.**	

Implementation Chart

Hopefully, as you become more experienced and comfortable with the curriculum, you will shift to more small-group *Investigates*. Accordingly, at the conclusion of the guide is an *Implementation Chart* that suggests a three-year timetable to expand the student's 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. Eventually, your goal should be to have the students complete almost all the investigations, rather than you having to provide the maximum opportunity for inquiry.

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