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 whole-class *Investigates* rather than small-group *Investigates*. This will save time and require less equipment than the optimal inquiry-based instruction that the curriculum is intended to provide. In order to choose which plan is best for you, please consult the *Implementation Chart* following this guide.

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	*Scenario, Chapter Challenge, Chapter Overview, Scoring Rubric,* keeping a log. ***Section 1*** Have students answer *What Do You See? What Do You Think?*	Obtain a copy of the sport section of a local paper, or a sports magazine. Find one reference to a science and record it in your journal.	1	**See Plan A.**	
2	Students perform the *Investigate* and discuss *Physics Talk*.	Read *Physics Talk* and answer the *Checking Up* questions. Answer *Physics to Go* Questions 1-4 and 10 *(Preparing for the Chapter Challenge)*.	2	***Section 1*** Teacher does the *Investigate* as a class demonstration. Discuss *Physics Talk*. Answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Only 1 track with base, steel ball, ruler, c-clamp, masking tape, and felt-tip marker is necessary
3	Review *Checking Up* questions, and *Physics to Go*. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge*. ***Section 2*** Have students answer *What Do You See? What Do You Think?* Students perform *Investigate* Steps 1 and 2.	Find and record three sports where there is motion with constant speed, and record when this motion takes place in that sport in their logs.	3	Review *Checking Up* questions, and previous night's *Physics to Go*. ***Section 2*** answer *What Do You See?* and *What Do You Think?* Students and teacher perform *Investigate* Steps 1 and 11. Teacher does one example of constant speed, increasing speed and decreasing speed with class, then hands out pre-recorded tapes for groups to analyze.	Only 1 tape timer, ruler, scissors, meterstick, and glue stick is required
4	Students perform *Investigate* Steps 3-11.	Students read and summarize *Physics Talk* in their journals. Answer *Checking Up* questions.			
5	Discuss results of the *Investigate*, review students' graphs, and relate to the associated motions. Discuss the *Physics Talk*, and review *Checking Up* questions. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge*. Students discuss *Physics to Go* Question 14 with their group.	Answer *Physics to Go* Questions 1-4 and 6-11.	4	**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	Go over *Physics to Go* homework. ***Section 3*** Students answer *What Do You See?* and *What Do You Think?*, perform *Investigate*, all steps, and discuss *Physics Talk*.	Read *Physics Talk* up to "Gravity, Mass, Weight, and Newton's Second Law." Answer *Checking Up* Questions 1 and 2, and *Physics to Go* Questions 1, 3-5, and 9.	5	**See Plan A.**	
7	Review *Checking Up* questions and *Physics to Go* homework, and discuss *Physics Talk* for Section 3, including significant figures.	Answer *Physics to Go* Questions 6-8, and 10-12.	6	**See Plan A.**	
8	Review the *Physics to Go* homework, do *What Do You Think Now?* and *Reflecting on the Section and the Challenge* for Section 3. ***Section 4*** Answer *What Do You See?* and *What Do You Think?* Students perform *Investigate* Part A.	Answer *Preparing for the Chapter Challenge* (Question 18).	7	***Section 3*** Review the *Physics to Go*, homework. Have students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*. ***Section 4*** Have students answer *What Do You See?* and *What Do You Think?* Perform *Investigate* as a teacher-led activity. Discuss *Physics Talk* and have students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Requires only one coin launcher and pennies or nickles
9	Discuss students' answers to *Preparing for the Chapter Challenge* and then ask a few students to read what they have written. Review the results of *Investigate* Part A, perform Part B. Discuss *Physics Talk* and have students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*	Read *Physics Talk* and answer the *Checking Up* questions. Answer *Physics to Go* Questions 1, 2, 4, and 6.			
10	Review *Physics to Go* from previous day. ***Section 5*** Students answer *What Do You See?* and *What Do You Think?* Students perform *Investigate* Step 1.	Answer Question 11, *Preparing for the Chapter Challenge*.	8	Review *Physics to Go* from previous day. ***Section 5*** Students answer *What Do You See?* and *What Do You Think?* Teacher does *Investigate* as a class demonstration to gather data for Step 1, and then hands out pre-recorded tapes for each group. Students and teacher perform *Investigate* Steps 2-7.	Requires only one acceleration of gravity setup (either tape timer or other equipment), scissors, meterstick, ringstand, extension clamp and weight
11	Students perform *Investigate* Parts 2-11 and discuss the Section 5 *Physics Talk*.	Read *Physics Talk* and answer the *Checking Up* questions, Answer *Physics to Go* Questions 2, 3, and 5-10.			
12	Discuss previous day's *Checking Up* questions and *Physics to Go*. Students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*. Students read *Chapter Mini-Challenge*.	Record a sports video segment on TV or find one on the Internet to use for the *Mini-Challenge*.	9	**See Plan A.**	

Pacing Guide *(continued)*

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
13	Students prepare for the *Mini-Challenge*.	Write out the script for the *Mini-Challenge*.	10	**See Plan A.**	
14	*Mini-Challenge* presentations. ***Section 6*** Students answer *What Do You See?* and *What Do You Think?*	Record any changes they would make in their challenge presentation after seeing the presentations of other groups.	11	**See Plan A.**	
15	Students perform *Investigate* Parts A and B, discuss *Physics Talk*, answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Read Section 6 *Physics Talk* and answer *Checking Up*. Answer *Physics to Go* Questions 1-7 and *Preparing for the Chapter Challenge* (Question 8).	12	**See Plan A.**	
16	Review previous night's *Physics to Go*. ***Section 7*** Students answer *What Do You See?* and *What Do You Think?* Students perform the *Investigate* Steps 1-3.	Read *Physics Talk*. Answer *Checking Up* questions and *Physics to Go* Questions 1-5.	13	**See Plan A.**	
17	Review students' results from *Investigate* Steps 1-3. Students finish *Investigate* Steps 4 and 5. Review *Checking Up* and *Physics to Go* questions. Discuss the *Physics Talk*. Discuss *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Answer *Physics to Go*, Questions 6-8 and 10-11.	14	**See Plan A.**	
18	Discuss the *Physics to Go* homework. ***Section 8*** Answer *What Do You See?* and *What Do You Think?* Students do *Investigate* all parts.	Read *Physics Talk* and answer *Checking Up* questions. Answer *Physics to Go* Questions 1, 2, 4, and 5.	15	**See Plan A.**	
19	Review results of Section 8 *Investigate*, *Checking Up* questions and *Physics to Go*. Discuss *Physics Talk* with special attention to sample problems. Have students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Read *Physics to Go*. Answer *Physics to Go* Questions 6, 8, 9, 13 and 16 (*Preparing for the Chapter Challenge*).	16	**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
20	Discuss the *Physics to Go* homework. ***Section 9*** Have students answer *What Do You See?* and *What Do You Think?* Students perform *Investigate*, all parts.	Read *Physics to Go* and answer *Checking Up* questions.	17	Discuss the *Physics to Go* homework. ***Section 9*** Have students answer *What Do You See?* and *What Do You Think?* For Section 9, perform *Investigate* all parts as a teacher-led class demonstration using one boy and one girl for the vertical jump activity. The class should record and analyze the data for each student. Discuss *Physics Talk*. Have students answer *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Requires only one meter stick and one computer setup with motion detector and interface
21	Review *Investigate* and *Checking Up* questions. Discuss *Physics Talk*. Do *What Do You Think Now?* and *Reflecting on the Section and the Challenge*.	Answer selected *Physics to Go* questions, plus Question 18.			
22	Review the *Physics to Go* questions. Student groups choose video segments they wish to use for the *Chapter Challenge*. These may either be teacher supplied or teacher approved.	Write first pass at voice-over narration for *Chapter Challenge*.	18	**See Plan A.**	
23	Students compare versions of the voice-over narration with their groups, and refine.	Finish voice-over narration script.	19	**See Plan A.**	
24	Challenge Presentations	Study for *Physics Practice Test.*	20	**See Plan A.**	
25	*Physics Practice Test*		21	**See Plan A.**	

CHAPTER 2

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.

	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	Whole class	Whole class	Small group	Whole class	Whole class	Small group	Small group	Small group	Whole class
Year 2	Small group	Whole class	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