

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 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 <i>Investigates</i>)	Homework (for Plan A and Plan B)	Day	Plan B (combination of whole-class and small-group <i>Investigates</i>)	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? What Do You Think?</i> Students complete <i>Investigate, Part A</i>.</p>	Bring in a motorized toy from home, preferably one that can be taken apart.	1	See Plan A.	
2	Review results of <i>Investigate, Part A</i> . Students complete <i>Investigate, Part B</i> . Discuss <i>Physics Talk</i> . Discuss <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Read <i>Physics Talk</i> . Answer <i>Physics to Go</i> Questions 1-5. Answer <i>Inquiring Further</i> at home and list magnetic material or effects in your logs.	2	Review results of <i>Investigate, Part A</i> . Complete <i>Investigate, Part B</i> as a whole-class demonstration. Discuss <i>Physics Talk</i> . Review <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	Requires only one hand generator, compass, magnet wire, scissors, sandpaper, mini-light bulb, alligator clip leads, and bulb holder.
3	Review <i>Physics to Go</i> . Tell the class to take apart their motorized toys to find the motors, magnets, and so on.	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions.	3	Review <i>Physics to Go</i> . Tell class to take apart their motorized toys to find the motors, magnets, etc.	Eliminates the need for hand generators. Must include a D-cell battery.
	<p>Section 2 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i>.</p>			<p>Section 2 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Complete <i>Investigate</i> as a whole-class demonstration using a battery as a power source rather than a hand generator.</p>	

Day	Plan A (small-group <i>Investigates</i>)	Homework (for Plan A and Plan B)	Day	Plan B (combination of whole-class and small-group <i>Investigates</i>)	Plan B Equipment Reduction
4	Review results of the <i>Investigate</i> . Discuss <i>Physics Talk</i> ; review <i>Checking Up</i> questions. Review <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> . Section 3 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i>	Answer <i>Physics to Go</i> Questions 1-5. Complete an Internet search on "Magnetic Bracelets" as a cure for diseases. For extra credit, submit a report on why you believe or do not believe these bracelets work.	4	See Plan A.	
5	Review previous night's <i>Physics to Go</i> . Students complete <i>Section 3 Investigate</i> .	Read <i>Physics Talk</i> and answer <i>Checking Up</i> questions.	5	See Plan A.	
6	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> . Students start preparing for the <i>Mini-Challenge</i> .	Answer <i>Physics to Go</i> Questions 1-6.	6	See Plan A.	
7	Review <i>Physics to Go</i> . Students work on their toy designs for the <i>Mini-Challenge</i> .	Work on the <i>Mini-Challenge</i> . For extra credit, complete an Internet search on "homo-pole motors" and assemble a working motor to demonstrate to the class.	7	See Plan A.	
8	<i>Mini-Challenge</i> presentations. Section 4 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.	8	<i>Mini-Challenge</i> presentations. Section 4 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Complete <i>Investigate</i> as a whole-class demonstration. Review <i>Physics Talk</i> ; <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	One large bar magnet, compass, scissors, hand-held generator, sandpaper, magnet wire, nail, drinking straw, cardboard tube, tape, and galvanometer (optional).

Pacing Guide *(continued)*

Day	Plan A (small-group <i>Investigates</i>)	Homework (for Plan A and Plan B)	Day	Plan B (combination of whole-class and small-group <i>Investigates</i>)	Plan B Equipment Reduction
9	Review results of <i>Investigate</i> . Review <i>Physics Talk</i> . 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.			
10	Section 5 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Complete <i>Investigate</i> as a small-group demonstration with students.	Read <i>Physics Talk</i> and answer the <i>Checking Up</i> questions.	9	Section 5 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Complete <i>Investigate</i> as a whole-class demonstration with students.	AC/DC demonstration generator.
11	Discuss the <i>Physics Talk</i> ; 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 1-4.	10	See Plan A.	
12	Review <i>Physics to Go</i> questions from <i>Section 5</i> . Section 6 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Students complete <i>Investigate</i> , <i>Parts A</i> and <i>B</i> .	Read <i>Physics Talk</i> , and answer <i>Checking Up</i> questions.	11	Review <i>Physics to Go</i> questions, <i>Section 5</i> . Section 6 Discuss <i>What Do You See?</i> and <i>What Do You Think?</i> Complete <i>Investigate</i> all parts as a whole-class demonstration. Discuss <i>Physics Talk</i> . Review <i>What Do You Think Now?</i> and <i>Reflecting on the Section and the Challenge</i> .	No equipment change.
13	Students complete <i>Investigate</i> , <i>Part C</i> . Discuss <i>Physics Talk</i> . 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 1-4 and 6-7.			
14	Review <i>Physics to Go</i> questions. Review <i>Chapter Challenge</i> . Students should continue preparing for the <i>Chapter Challenge</i> .	Prepare for <i>Chapter Challenge</i> .	12	See Plan A.	
15	Students finish work on the <i>Chapter Challenge</i> .	Prepare <i>Chapter Challenge</i> presentations.	13	See Plan A.	
16	<i>Chapter Challenge</i> presentations.	Study for <i>Physics Practice Test</i> .	14	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 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 students will be manifest. Eventually, 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
Year 1	Whole class	Whole class	Small group	Whole class	Whole class	Whole class
Year 2	Small group	Small group	Small group	Whole class	Whole class	Small group
Year 3	Small group	Small group	Small group	Small group	Small group	Small group

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