CHAPTER

7

Compound Interest

Vocabulary

amount
compound interest
compounding period
future value
GIC (Guaranteed Investment Certificate)
interest rate
maturity
mutual fund
present value
principal
RESP (Registered Education Savings Plan)
simple interest
term (of a loan or an investment)

Curriculum Expectations

Exponential Functions

By the end of this course, students will:

3.1 compare, using a table of values and graphs, the simple and compound interest earned for a given principal (i.e., investment) and a fixed interest rate over time

3.2 solve problems, using a scientific calculator, that involve the calculation of the amount, A (also referred to as future value, FV), and the principal, P (also referred to as present value, PV), using the compound interest formula in the form $A = P(1 + i)^n$ [or $FV = PV(1 + i)^n$]

3.3 determine, through investigation, that compound interest is an example of exponential growth

3.4 solve problems, using a TVM solver on a graphing calculator or on a website, the involve the calculation of the interest rate per compounding period, i, or the number of compounding periods, n, in the compound interest formula, $A = P(1 + i)^n$ [or $FV = PV(1 + i)^n$]

Chapter 7 Planning Chart

Section	Suggested Timing	Student Text Page(s)	Materials and Technology Tools
Chapter 7 Opener	10–15 min	342–343	
Prerequisite Skills	30–45 min	344–345	• calculators
7.1 Explore Simple Interest and Compound Interest	75–110 min	346–354	• calculators • grid paper and rulers • graphing software (optional) • computers with spreadsheet software
7.2 The Compound Interest Formula	75–110 min	355–361	• graphing calculators • calendars (optional)
7.3 Present Value	75 min	362–366	• calculators
7.4 Solve Financial Problems Using Technology	75–110 min	367–371	• graphing calculators with TVM Solver • calculators (if TVM Solver is not available) • overhead display (optional) • computers with Internet access (optional)
Chapter 7 Review	45–75 min	372–373	• grid paper and rulers • graphing calculators with TVM Solver • calculators (if TVM Solver is not available)
Chapter 7 Problem Wrap-Up	30 min	373	• computers with Internet access
Chapter 7 Practice Test	45–75 min	374–375	• grid paper and rulers • graphing calculators with TVM Solver • calculators (if TVM Solver is not available)
Chapter 7 Task: Advertising Bank Accounts	45–75 min	376–377	• graphing calculators with TVM Solver • grid paper and rulers • graphing software (optional)

Chapter 7 Blackline Masters Checklist

	BLM	Title	Purpose
Prerequisite Skills			
	BLM 7-1	Prerequisite Skills	Practice
	BLM 7-2	Prerequisite Skills Self-Assessment Checklist	Student Self-Assessment
7.1 Explore Simple Interest and Compound Interest			
	BLM G-1	Grid Paper	Student Support
	BLM A-14	Self-Assessment Checklist	Assessment
	BLM 7-3	Section 7.1 Explore Simple Interest and Compound Interest	Practice
	BLM 7-4	Section 7.1 Achievement Check Rubric	Assessment
7.2 The Compound Interest Formula			
	BLM 7-5	Section 7.2 The Compound Interest Formula	Practice
	BLM 7-6	Section 7.2 Achievement Check Rubric	Assessment
7.3 Present Value			
	BLM A-9	Communication General Scoring Rubric	Assessment
	BLM 7-7	Section 7.3 Present Value	Practice
7.4 Solve Financial Problems Using Technology			
	BLM 7-8	Section 7.4 Solve Financial Problems Using Technology	Practice
Chapter 7 Review			
	BLM A-13	Self-Assessment Recording Sheet	Assessment
	BLM 7-9	Chapter 7 Review	Practice
Chapter 7 Problem Wrap-Up			
	BLM 7-10	Chapter 7 Problem Wrap-Up Rubric	Summative Assessment
Chapter 7 Practice Test			
	BLM 7-11	Chapter 7 Practice Test	Diagnostic Assessment
	BLM 7-12	Chapter 7 Test	Summative Assessment
	BLM 7-13	Chapter 7 Practice Test Achievement Check Rubric	Assessment
Chapter 7 Task: Advertising Bank Accounts			
	BLM A-17	Learning Skills Checklist	Assessment
	BLM 7-14	Chapter 7 Task Rubric	Assessment
	BLM 7-15	Chapter 7 BLM Answers	Answers

Prerequisite Skills

Student Text Pages
344–345

Suggested Timing
30–45 minutes

Materials and Technology Tools
- calculators

Related Resources
- BLM 7–1 Prerequisite Skills
- BLM 7–2 Prerequisite Skills Self-Assessment Checklist

Common Errors

- Some students may struggle with decimal placement when converting a percent to a decimal.

R_x Have students review the concept of percent or use a calculator to learn again through patterning.

- Some students may have difficulty finding the number of intervals in a length of time (e.g., how many quarterly intervals are in a year)

R_x Provide students with a calendar to check time intervals.

Accommodations

Visual–provide a calendar for **question 5**

Spatial–give students a handout of the tables in **question 9**

Motor–provide a calculator with large buttons

Teaching Suggestions

- Encourage the use of pencil and paper instead of the calculator, even for questions that imply the use of a calculator.
- You may wish to demonstrate the skills required by doing the first part of every question.
- Stronger students may need to do only a few parts of each question. Students who are having difficulty may benefit from the additional practice of completing all questions.
- Use **BLM 7–1 Prerequisite Skills** for remediation or extra practice. To further reinforce the concepts, you may refer students to specific skills in the **Prerequisite Skills Appendix** on pages 420–435 in the textbook.

Assessment

- Assess student readiness to proceed by informal observation as students are working on the questions. A formal test is inappropriate since this material is not part of the curriculum to be covered by this chapter.
- Student self-assessment is also an effective technique; students can place a checkmark beside topics in the Prerequisite Skills in which they feel confident with the necessary skills. Use **BLM 7–2 Prerequisite Skills Self-Assessment Checklist** as a self-assessment for students.
- Remedial action can be taken in small groups or in a whole-class skills review.

Chapter Problem

- The Chapter Problem is introduced in the Chapter 7 opener. Have students discuss their understanding of the topic. You may wish to have students complete the Chapter Problem revisits that occur throughout the chapter. These questions are designed to help students move toward the Chapter 7 Problem Wrap-Up at the end of Chapter 7 Review.
- You may have students keep chapter problem notes separate. These notes can be used to track the flow of materials and see how the chapter problem addresses the big ideas in the chapter.
- Alternatively, you may wish to assign the Chapter Problem questions when students have completed the chapter. The Chapter Problem can be used as a summative assessment.