8.1

Savings Plans

Student Text Pages
448–453

Suggested Timing
80 min

Tools
- computers with Internet access
- graphing calculators

Related Resources
BLM 8-3 Section 8.1 Savings Plans
BLM 8-4 Section 8.1 Achievement Check Rubric
BLM A-9 Communication General Scoring Rubric

Link to Prerequisite Skills

Students should complete all the Prerequisite Skills questions before proceeding with this section.

Warm-Up

1. July 3 is on a Friday. What are the dates of the other Fridays in July?
2. Rhys put $2 per week in a jar to donate to charity. How much does he give to charity in one year?
3. What is 10% of 800, 850, and 875?

Warm-Up Answers

1. July 10, 17, 24, and 31.
2. $104
3. 80, 85, 87.5

Teaching Suggestions

Warm-Up

- Display the Warm-Up questions. Have students complete the questions independently. Then, discuss the solutions as a class.

Investigate

- The Investigates are key components to this section. They require little class time yet prompt students to act on their own behalf. Explain to students that many people talk about financial planning and goal setting and, for many, it ends there. Use **BLM A-9 Communication General Scoring Rubric** to assess student responses to the Investigates.

Investigate Answers (page 448)

Answers may vary. For example:
Goal: Have at least $2000 saved in one year. Major purchase: a laptop computer.

1. The cost of the laptop computer is $800.
2. Save $166.67 each month to have approximately $2000 in one year. Talk to a financial planner in a bank or check bank Web sites for advice about savings accounts and how to invest the money.
3. To save $166.67 each month, need to find a job that pays approximately $10/h for 17 h/month or 4 h/week. If the money is invested in a savings account that earns interest, then less needs to be saved each month or the $2000 can be saved sooner.

Examples

- The mathematics in the Examples is straightforward, so they can be worked through or discussed quickly.
- Example 1 shows someone saving a percent of net income. Example 2 shows someone saving a set amount each pay period. Point out to students that having a dedicated account for savings is very useful for ensuring that the money is saved and not spent. Note that most figures are rounded. Explain that the amounts in financial goals are estimates, so they are usually rounded.

Key Concepts

- Review the Key Concepts as a whole group exercise.

Discuss the Concepts

- Have students give non-math-related examples for **question D1**.
- In **question D2**, students should be able to explain why B is the correct answer since they covered similar scenarios in Chapter 7.
- In **question D3**, the answer is two or three paycheques. Bi-weekly pay can result in three paycheques in a month with five Fridays.

Discuss the Concepts Suggested Answers (page 450)

D1. It is essential to have a structured plan that outlines how to achieve your goal. Without a plan, you do not know where your efforts are heading and, therefore, would almost always end up failing.

D2. B represents an annuity because it has equal payments made over equal time periods that accumulate over time at a certain interest rate.

D3. Over 12 months, Dylan would get 26 paycheques: ten months with two paycheques each and two months with three paycheques each. So Dylan might be paid two or three times a month, depending on the month and his pay date.

Practise (A)

- You may wish to have students work in pairs or small groups to complete the Practise questions.
- Encourage students to refer to the Examples before asking for assistance.
- **Question 1, part c),** requires a number of calculations. Since each amount varies, this is not a simple ordinary annuity and a separate calculation must be made for each deposit. Students should use a TVM Solver to determine the future values. You might have students average the deposits and follow the same approach as in Example 1.

Apply (B)

- Students who struggled with Chapter 7 may benefit from completing all the Apply questions. Other students may not need to be assigned all the questions.
- Beside **question 7** is a link to an on-line calculator. Suggest that students mark this for future reference.
- **Question 10** is an Achievement Check question. You may wish to use **BLM 8-4 Section 8.1 Achievement Check Rubric** to assess students' responses.
- **Question 13** is an opportunity for students to do some quick research. This question can work quite well as a class investigate if you have a computer with Internet access and an interactive whiteboard.

Common Errors

- Some students may still have difficulty using a TVM Solver.

R_x Have students refer to the Technology Appendix in the back of their textbooks.

Accommodations

Spatial—for **Investigate 1**, provide a table with the headings Financial Goals, Major Purchases, and Steps to Reach Each Goal for students to complete

Language—assign partners to brainstorm ideas for the table in **Investigate 1**

Memory—create a handout or a poster of the TVM Solver screen and provide a written description of each field. For example, **N** = total number of payments or deposits, **I%** = annual interest rate.

ESL—provide a partner to assist with reading the instructions for the Investigates and to discuss the responses. Allow students to use point form in their Investigate responses. Have students add a definition for net earnings to their personal math dictionaries.

Gifted and Enrichment—have students research financial planning on the Internet and select a financial planning tool such as a budget template or an on-line calculator to demonstrate to the class using technology

Extend (C)

- Assign the Extend question to students who are not being challenged by the Apply questions.

Achievement Check Answers (page 452)

10. a) Jackson gives his mother \$100 each paycheque. He is able to save \$350 each paycheque.

$\frac{6000}{350} \doteq 17.1$

Jackson can purchase his motorcycle after 18 paycheques or after 36 weeks.

b) Since Jackson is paid every two weeks, he receives $\frac{52}{2} = 26$ paycheques per year.

$\frac{6000}{26} \doteq 230.77$

Jackson will be able to buy his motorcycle within the year if he saves approximately \$231 per paycheque.

c) Use a TVM Solver.

N = 25.48773588	**FV** = 6000
I% = 4	**P/Y** = 26
PV = 0	**C/Y** = 365
PMT = −231	**PMT**: END

Jackson will still require 26 paycheques to buy his motorcycle. The interest earned is not enough to reduce the number of paycheques necessary. However, he can reduce the amount he needs to save from each paycheque. Use a TVM Solver.

N = 26	**FV** = 6000
I% = 4	**P/Y** = 26
PV = 0	**C/Y** = 365
PMT = −226.35893	**PMT**: END

If his savings earn 4% interest, he can reduce the amount he saves each paycheque to \$227.

Literacy Connect

- Encourage students to add a definition of net earnings to their personal math dictionaries.

Mathematical Process Expectations

Process Expectation	Questions
Problem Solving	10, 13, 14
Reasoning and Proving	8, 10, 11, 13, 14
Reflecting	n/a
Selecting Tools and Computational Strategies	1–5, 7, 8, 10, 12, 14
Connecting	1, 3, 5, 7–12, 14
Representing	n/a
Communicating	8, 10, 13, 14

Ongoing Assessment

- You can use the Achievement Check question and its rubric as formative assessment tools. Most of the Discuss the Concepts questions can be used as short quizzes to determine if students have understood the Investigates and Examples.

Extra Practice

- Use **BLM 8-4 Section 8.1 Savings Plans** for extra practice or remediation.