GENERAL MATHEMATICS

Name: _____ Grade: _____

Section: _____ Date : _____

LEARNING ACTIVITY SHEET

ILLUSTRATE SIMPLE AND COMPOUND INTEREST

Background Information of Learners

Interest is the cost of borrowing money where the borrower pays a fee to the lender for the money borrowed. It is usually expressed as a percentage either simple or compounded.

Simple interest is an interest that is computed on principal and then added to it. On the other hand, in the compound interest the interest is computed on the principal and also on the accumulated past interests.

In this learning activity sheet, we will try to illustrate how simple interest and compound interest differ.

Learning Competency

Illustrate Simple and Compound Interest (Quarter 2, Week 1): LC Code: M11GM-11a-1

Activity 1: BLAST from the PAST

Directions: Answer the following questions.

1. What is the equivalent of 30% in decimal form?
2. What is the equivalent of the decimal number 0.125 into percent?
3. What percent of 24 is 12?
4. How do we convert a percent to decimal?
5. How do we convert a decimal to percent?

Activity 2: Complete Me!

Directions: Illustrate simple interest and compound interest by completing the given table.

SIMPLE INTEREST (Annual)

Time (t)	Principal (P)	Interest Rate (r)	Simple Interest		Amount after t years (maturity Value)
			Solution	Answer	
1	P 5,000.00	4%	P 5,000.00 (0.04)(1)	P 200.00	P5,000.00+200.00 = P 5,200.00
2	P 5,000.00	4%	P 5,000.00 (0.04)(2)	P 400.00	P5,000.00+400.00 = P 5,400.00
3	P 5,000.00	4%	P 5,000.00 (0.04)(3)	P 600.00	P5,000.00+600.00 = P 5,600.00
4	P 5,000.00	4%	P 5,000.00 (0.04)(4)	P 800.00	P5,000.00+800.00 =P 5,800.00
5					
6					
7					
8					

COMPOUND INTEREST (ANNUAL)

Time (t)	Amount at the start of year t	Rate (r)	Compound Interest		Amount after t years (maturity Value)
			Solution	Answer	
1	P5,000.00	4%	P5,000.00 (0.04)(1)	P 200.00	P 5,000.00 + 200.00 = P 5,200.00
2	P5,200.00	4%	P5,200.00 (0.04)(1)	P 208.00	P 5,200+208.00 = P5,408.00
3	P5,408.00	4%	P P5,408.00 (0.04)(1)	P 216.32	P5,408.00+216.32 =P 5,624.32
4					
5					
6					
7					
8					

Activity 3: Dig Deeper

Directions: Analyze and illustrate the given situation using the table provided and answer the questions that follow.

1. Suppose you want to invest php 10, 000.00 in the bank for 6 years. The Land bank of the Philippines (LBP) offers 12% annual simple interest rate per year. Banco De Oro offers 12 % compounded annually. Which will you choose and Why?

SIMPLE INTEREST (ANNUAL)

Time (t)	Principal (P)	Interest Rate (r)	Simple Interest		Amount after t years (maturity Value)
			Solution	Answer	
1					
2					
3					
4					
5					
6					

COMPOUND INTEREST (ANNUAL)

Time (t)	Amount at the start of year t	Rate (r)	Compound Interest		Amount after t years (maturity Value)
			Solution	Answer	
1					
2					
3					
4					
5					
6					

Questions:

1. Which will you choose and Why?

   _____

   _____

2. How do you find simple Interest?
   In Symbols: _____
3. How do you find compound Interest?

   In Symbols: _____

4. How do you find the maturity value in simple interest?

   In Symbols: _____

5. How do you find the maturity value in simple interest?

   In Symbols: _____

Reflection:

1. How did you find the activity?

_____

_____

References:

DepEd General Mathematics Learner's material
DepEd Learner's Material for Grade 9
Oronce, Orlando A., RBS General Mathematics First Edition

Answer Key

Activity 1.

1. 0.3
2. 12.5%
3. 50%
4. To convert percent to decimal, drop the percent sign and move the decimal point two places to the left.
5. To convert decimal to percent, move the decimal point two places to the right.

Activity 2

SIMPLE INTEREST (Annual)

Time (t)	Principal (P)	Interest Rate (r)	Simple Interest		Amount after t years (maturity Value)
			Solution	Answer	
5	P 5,000.00	4%	P 5,000.00 (0.04)(5)	P 1,000.00	P5,000.00+1,000.00 =P 6,000.00
6	P 5,000.00	4%	P 5,000.00 (0.04)(6)	P 1,200.00	P5,000.00+1,200.00 =P 6,200.00
7	P 5,000.00	4%	P 5,000.00 (0.04)(7)	P 1,400.00	P5,000.00+1,400.00 =P 6,400.00
8	P 5,000.00	4%	P 5,000.00 (0.04)(8)	P 1,600.00	P5,000.00+1,600.00 =P 6,600.00

COMPOUND INTEREST (ANNUAL)

Time (t)	Amount at the start of year t	Rate (r)	Compound Interest		Amount after t years (maturity Value)
			Solution	Answer	
5	P5,849.29	4%	P 5,849.29 (0.04)(1)	P 233.97	P 5,849.29+ 233.97 = P 6,083.26
6	P6,083.26	4%	P6,083.26 (0.04)(1)	P 243.33	P 6,083.26+ 243.33 = P 6,326.59
7	P6,326.59	4%	P 6,326.59 (0.04)(1	P253.06	P 6,326.59 +253.06 = P6,579.65
8	P6,579.65	4%	P P6,579.65 (0.04)(1	P263.19	P6,579.65+ 263.19 =P 6,842.84

Activity 3:

SIMPLE INTEREST (ANNUAL)

Time (t)	Principal (P)	Interest Rate (r)	Simple Interest		Amount after t years (maturity Value)
			Solution	Answer	
1	P 10,000.00	12%	P 10,000.00 (0.12)(1)	P 1,200.00	P 10,000.00 +1,200.00= P11,200.00
2	P 10,000.00	12%	P 10,000.00 (0.12)(2)	P 2,400.00	P 10,000+2,400.00 = P12,400.00
3	P 10,000.00	12%	P 10,000.00 (0.12)()	P 3,600.00	P 10,000+3,600.00= P13,600.00
4	P 10,000.00	12%	P 10,000.00 (0.12)(4)	P 4,800.00	P 10,000.00 +4,800.00= P14,800.00
5	P 10,000.00	12%	P 10,000.00 (0.12)(5)	P 6,000.00	P 10,000+6,000.00 = P16,000.00
6	P 10,000.00	12%	P 10,000.00 (0.12)(6)	P 7,200.00	P 10,000+7,200.00= P17,200.00

COMPOUND INTEREST (ANNUAL)

Time (t)	Amount at the start of year t	Rate (r)	Compound Interest		Amount after t years (maturity Value)
			Solution	Answer	
1	P 10,000.00	12%	P10,000.00 (0.12)(1)	P 1,200.00	P 10,000.00 + 1,200.00= P11,200.00
2	P 11,200.00	12%	P 11,200.00 (0.12)(1)	P 1,344.00	P 11,200.00+ 1,344.00 =P 12,544.00
3	P 12,544.00	12%	P 12,544.00 (0.12)(1)	P 1,505.28	P 12,544.00+ 1,505.28 =P 14,049.28

4	P 14,049.28	12%	P 14,049.28 (0.12)(1)	P 1,685.91	P 14,049.28+ 1,685.91= P 15,735.19
5	P 15,735.19	12%	P 15,735.19 (0.12)(1)	P 1,888.22	P 15,735.19 + 1`,888.22= P 17,623.41
6	P 17,623.41	12%	P 17,623.41 (0.12)(1)	P 2,114.81	P 17,623.41 + 2,114.81= P 19,738.22

Questions:

1. Answers vary
2. Simple Interest is the product of the principal, rate and time
   I= Pr
3. A= P + I ; A= P + Prt ; A= P(1+rt)
   where: A =maturity value; P =principal and I= interest
   r =rate and t =time
4. Compound Interest: $I_{c=}$ A-P
5. A=P +Pr=P(1+r) * at the end of the year

   $A= P(1+r)^t$ *If compounded annually for n years

   $A= P (1+ \frac{r}{k})^{kt}$ * If compounding k times per year.

   where: A =maturity value; P =principal and I= interest
   r =rate and t =time; r/k= rate per compounding and kt= number of compounding