

THE TURN OF THE SCREW

BENJAMIN BRITTEN

MATH: Currency Conversion

Students will

- Use mathematical operation to solve real world situations.
- Utilize charts and analyze data to answer questions.
- Use conversions to express mathematical expressions.

Copies for Each Student: “Our Composer, Benjamin Britten” and Activity Worksheet

For the Teacher: “Our Composer, Benjamin Britten” and Activity Worksheet **Answer Key**

Getting Ready:

Decide which section(s) of the lesson you wish your group to complete.

Gather materials:

- Notebook paper
- Pencils
- Calculators (if allowed)

Instructional Time: One 45-minute class period

Introduction

Have the students read “Our Composer, Benjamin Britten” to gain an understanding about the composer’s life and background. Be sure they understand that Britten was not only known as a great composer, but also as an outstanding pianist and conductor. As a result, he was able to earn his living. For example, during 1942-43, his gross income was £945. This income amount came not only from composing, but also from various other sources which included giving recitals and concerts. In 1943-44, his total professional earnings increased to £1169.

Guided Practice/Independent Practice

Present the Activity Worksheet to the students.

Tell Students: “Recently, the United Kingdom’s currency has returned to the British Pound (£). In 2015, the average income for a musician living in the UK was £25,598. You will be converting the (£) British Pound to the United States Dollar (\$) using the current exchange rate* and the most recent average income for a musician living in the UK today.”

**Please note that the conversion information given may have changed since the writing of this lesson due to the fluctuating nature of exchange rates.*

Read the instructions on the Activity Worksheet. Have students complete the Budget Analysis Chart in Part I using the conversion information (exchange rate) and also answer the questions in Part II. Depending on your grade level, the ability of your students, and time constraints, you may choose to have students work as a whole class, in small groups, with a partner, or individually.

Evaluation:

1. Were the students able to complete the Budget Analysis Chart in Part I?
2. Were the students able to complete the Activity Worksheet by answering the questions in Part II with 80% accuracy?

TEKS – Mathematics

6th Grade

111.26 b. 1 Mathematical process standards.

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

111.26 b. 2 Number and operations.

The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to: (A) classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers; (B) identify a number, its opposite, and its absolute value; (C) locate, compare, and order integers and rational numbers using a number line; (D) order a set of rational numbers arising from mathematical and real-world contexts.

111.26 b. 3 Number and operations.

The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to: (A) recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values; (C) represent integer operations with concrete models and connect the actions with the models to standardized algorithms; (D) add, subtract, multiply, and divide integers fluently; and (E) multiply and divide positive rational numbers fluently.

111.26 b. 4 Proportionality.

The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to: (D) give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients; (E) represent ratios and percents with concrete models, fractions, and decimals; (F) represent benchmark fractions and percents such as 1%, 10%, 25%, $33\frac{1}{3}\%$, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers; (G) generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money; and (H) convert units within a measurement system, including the use of proportions and unit rates.

111.26 b. 5 Proportionality.

The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to: (A) represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions; (B) solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models; and (C) use equivalent fractions, decimals, and percents to show equal parts of the same whole.

111.26 b. 6 Expressions, equations, and relationships.

The student applies mathematical process standards to use multiple representations to describe algebraic relationships. The student is expected to: (A) identify independent and dependent quantities from tables and graphs; (B) write an equation that represents the relationship between independent and dependent quantities from a table; and

111.26 b. 7 Expressions, equations, and relationships.

The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to: (B) distinguish between expressions and equations verbally, numerically, and algebraically; (C) determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations.

7th Grade

111.27 b. 1 Mathematical process standards.

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

111.27 b. 2 Number and operations.

The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.

111.27 b. 3 Number and operations.

The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. The student is expected to: (A) add, subtract, multiply, and divide rational numbers fluently; and (B) apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.

111.27 b. 4 Proportionality.

The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to: (B) calculate unit rates from rates in mathematical and real-world problems; (D) solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems; and (E) convert between measurement systems, including the use of proportions and the use of unit rates.

111.27 b. 6 Proportionality.

The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships. The student is expected to: (G) solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents;

8th Grade

111.28 b. 1 Mathematical process standards.

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

111.28 b. 2 Number and operations.

The student applies mathematical process standards to represent and use real numbers in a variety of forms. The student is expected to: (A) extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers; (D) order a set of real numbers arising from mathematical and real-world contexts.

Algebra I

111.39 c. 1 Mathematical process standards.

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: (A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate

mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Algebra II

111.40 c. 1 Mathematical process standards.

The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace; (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution; (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems; (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate; (E) create and use representations to organize, record, and communicate mathematical ideas; (F) analyze mathematical relationships to connect and communicate mathematical ideas; and (G) display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Gardner's Intelligences: Linguistic, Logical-Mathematical

Bloom's Taxonomy: Understand, Analyze, Apply, Evaluate

Sources

<http://www.x-rates.com/calculator/?from=GBP&to=USD&amount=1>

<http://www.thisismoney.co.uk/money/news/article-2868911/Best-paid-UK-jobs-2014-Compare-pay-national-average.html>

<http://www.britannica.com/biography/Benjamin-Britten> Accessed on 12/10/2015

Kildea, Paul Francis. 2013. *Benjamin Britten*. London: Allen Lane.

The Turn of the Screw

Our Composer, Benjamin Britten

Benjamin Britten, in full Edward Benjamin Britten, Baron Britten Of Aldeburgh (born November 22, 1913, Lowestoft, Suffolk, England—died December 4, 1976, Aldeburgh, Suffolk), leading British composer of the mid-20th century, whose operas were considered the finest English operas since those of Henry Purcell in the 17th century. He was also an outstanding pianist and conductor.

Britten composed as a child and at the age of 12 began several years of study under the composer and teacher Frank Bridge. He later studied under John Ireland and Arthur Benjamin at the Royal College of Music in London and, while there, composed the set of choral variations *A Boy Was Born* (1933; revised, 1958). He then worked as a composer for the radio, theatre, and cinema, coming into close contact with the poet W.H. Auden. In 1937 his *Variations on a Theme of Frank Bridge*, for string orchestra, won him international acclaim.

From 1939 to 1942 he was in the United States, where his first work for the stage, the operetta *Paul Bunyan* (1941; libretto by Auden), was performed. A commission by the Koussevitzky Foundation led to the composition of his opera *Peter Grimes* (1945; libretto by M. Slater after George Crabbe's poem *The Borough*), which placed Britten in the forefront of 20th-century composers of opera. His later operas include *The Rape of Lucretia* (1946); the comic *Albert Herring* (1947); *Billy Budd* (1951; after Herman Melville); *Gloriana* (1953; written for the coronation of Queen Elizabeth II); *The Turn of the Screw* (1954; after Henry James); *A Midsummer Night's Dream* (1960); *Owen Wingrave* (television, 1971); and *Death in Venice* (1973; after Thomas Mann).

With the church parable *Curlew River* (1964), his conception of musical theatre took a new direction, combining influences from the Japanese Noh theatre and English medieval religious drama. Two other church parables, *The Burning Fiery Furnace* (1966) and *The Prodigal Son* (1968), followed. An earlier church-pageant opera, *Noye's Fludde* (1958), made use of one of the medieval Chester mystery plays. *The Rape of Lucretia* marked the inception of the English Opera Group, with Britten as artistic director, composer, and conductor. This undertaking gave rise to the Aldeburgh Festival (founded 1947), which became one of the most important English music festivals and the centre of Britten's musical activities.

Preeminent among Britten's nontheatrical music are his song cycles. Among those that established his stature as a songwriter are (for voice and piano) *Seven Sonnets of Michelangelo* (1940; written for the tenor Peter Pears, his life partner and artistic collaborator), *The Holy Sonnets of John Donne* (1945), *Winter Words* (1953), and *Hölderlin Fragment* (1958); and (for voice and orchestra) *Our Hunting Fathers* (1936; text by Auden), *Les Illuminations* (1939; text by Arthur Rimbaud), and *Serenade* (1943).

Britten's largest choral work is the *War Requiem* (1962) for choir and orchestra, based on the Latin requiem mass text and the poems of Wilfred Owen, who was killed in World War I. Other choral works include the *Hymn to St. Cecilia* (1942; text by Auden), *Ceremony of Carols* (1942), *Rejoice in the Lamb* (1943), *St. Nicolas* (1948), *Spring Symphony* (1949), and *Voices for Today* (1965; written for the United Nations' 20th anniversary).

Among his principal instrumental works are the *Simple Symphony* for strings (1925); three string quartets (1941, 1945, and 1976); concerti for piano and for violin; *The Young Person's Guide to the Orchestra* (1945); and *Symphony in D Major for Cello and Orchestra* (1963), written for the Russian cellist Mstislav Rostropovich.

Britten's operas are admired for their skillful setting of English words and their orchestral interludes, as well as for their dramatic aptness and depth of psychological characterization. In chamber operas such as *The Rape of Lucretia* and the church parables, he proved that serious music theatre could flourish outside the opera house. His continual willingness to experiment with modern musical styles, forms, and sonorities and with new theatrical environments proved extremely fruitful.

Britten was created Companion of Honour in 1953 and was awarded the Order of Merit in 1965. In June 1976 he was created a life peer, the first musician or composer to be elevated to the peerage.

Name: _____

Date: _____

The Turn of the Screw Activity Worksheet

Part I

Instructions: Review the budget sheet below and convert the income and expense items from Pounds to US dollars. After completing the analysis chart, answer the questions in Part II using information from the chart.

In 2015, the average income for a musician in the United Kingdom was £25,598 per year. You will use the conversion information below to complete the sample budget analysis chart to understand how the income earned in the United Kingdom would transfer to the United States. All calculations are given per month and rounded to the nearest hundredth.

Budget Analysis Chart

Conversion Information (exchange rate): £1.00 British Pound = \$1.306 USD

	January		February	
	Pound	US Dollar	Pound	US Dollar
<u>Income</u>				
Salary per Month (after taxes)	£2,133.16		\$2,133.16	
Investment Incomes	£378.91		\$426.25	
<u>Fixed Expenses</u>				
Housing	£898.05		£898.05	
Groceries	£260.00		£189.75	
Vehicle Fuel	£123.80		£147.05	
Health Insurance	£239.67		£239.67	
Gas	£49.56		£51.50	
Electricity Bill	£109.64		£91.20	
Cell Phone	£98.12		£98.12	
<u>Miscellaneous</u>				
Toiletry Needs	£179.00		£212.54	
Entertainment	£275.53		£156.78	
<u>Saving (Per Month)</u>				
Retirement	£150.00		£150.00	
Emergency	£75.00		£100.00	
Other	£48.49		£63.00	

PART II

Please answer the following questions using your answers from the **Budget Analysis Chart** in U.S. dollars.

1. How much did you spend on toiletry needs for both months?

2. How much money were you able to put in your emergency account in January?

3. How much was spent on fixed expenses in February?

4. How much were you able to put in your retirement account after two months?

5. How much more was spent on groceries and gasoline in January than in February?

6. Using the formula below, how much money did you have left from both months?
(*Income – Fixed Expenses – Miscellaneous – Saving = ?*)

7. What would you consider using the money in the “other” account for and why?

Activity Worksheet Answer Key

Budget Analysis Chart

Conversion Information (exchange rate): £1.00 British Pound = \$1.306 USD

<u>Income</u>	January		February	
	Pound	US Dollar	Pound	US Dollar
Salary per Month (after taxes)	£2,133.16	\$2,785.91	£2,133.16	\$2,785.91
Investment Incomes	£378.91	\$494.86	£426.25	\$556.68
<u>Fixed Expenses</u>				
Housing	£898.05	\$1,172.85	£898.05	\$1,172.85
Groceries	£260.00	\$339.56	£189.75	\$247.81
Vehicle Fuel	£123.80	\$161.68	£147.05	\$192.05
Health Insurance	£239.67	\$313.01	£239.67	\$313.01
Gas	£49.56	\$64.73	£51.50	\$67.26
Electricity	£109.64	\$143.19	£91.20	\$119.11
Cell Phone	£98.12	\$128.14	£98.12	\$128.14
<u>Miscellaneous</u>				
Toiletry Needs	£179.00	\$233.77	£212.54	\$277.58
Entertainment	£275.53	\$359.84	£156.78	\$204.75
<u>Saving</u> (Per Month)				
Retirement	£150.00	\$195.90	£150.00	\$195.90
Emergency	£75.00	\$97.95	£100.00	\$130.60
Other	£48.49	\$63.33	£63.00	\$82.28

- How much did you spend on toiletry needs for both months?
\$511.35
- How much money were you able to put in your emergency account in January?
\$97.95
- How much was spent on fixed expenses in February?
\$2240.23
- How much were you able to put in your retirement account after two months?
\$391.80
- How much more was spent on groceries and gasoline in January than in February?
\$89.22
- Using the formula below, how much money did you have left from both months?
(Income – Fixed Expenses – Miscellaneous – Saving =?)
\$218.05
- What would you consider using the money in the “other” account for and why?
Answers will vary.