# MATH: Making a Living as a Composer

**Students will**

- Study charts for information
- Complete charts with computations
- Make conversions between different currencies

**Copies for Each Student:** "Our Composer, Giacomo Puccini", Activity Worksheet

**Copies for the Teacher:** Math lesson plan, "Our Composer, Giacomo Puccini", Activity Worksheet, Answer key

**Instructional Time:** One 45-minute class period

**Getting Ready**

Pass out Activity Worksheets

Gather pencils, calculators (if allowed), and extra writing paper as needed for your group.

**Introduction**

Have the students read about the composer's background in "Our Composer, Giacomo Puccini", thinking about the financial needs he would have had during the time in which he was composing. Ask the students to discuss expenses such as: the cost of living during the composer's lifetime, travel expenses, medical care, etc.

**Guided/Independent Practice**

Depending on grade level and time constraints, you may choose to have students work as a whole class, in small groups, or individually.

Give each student a copy of the Activity Worksheet, and read the directions. Have students calculate answers for #1 and #2, then assist students to make the conversions from Euros to U.S. dollars, and calculate the answers for #3 and #4.

**Bonus Activity:**

Have students consider the effect of relocating to a foreign country where their income has to be converted to the currency of that country. Have the students research the average salary for a particular career choice and create an annual budget of expenses. The expenditures must stay under budget and include living expenses such as: rent, electricity, food, and transportation. Expenses must denote quantity, (i.e. per year or per month). Then have the student research the conversion rate, and convert their budget, as seen in Part I of the Activity Worksheet.

**Evaluation:**

1. Were students able to complete Activity Worksheet?
2. Did students discuss how Puccini's financial needs influenced the amount of operas he wrote?
3. Did students complete their own annual budget of expenses considering the salary and position they chose?

**TEKS**

Math

**6th Grade**
(1) Knowledge and skills
Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. C. F.)

**7th Grade**
(1) Knowledge and skills
Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. C.)

**8th Grade**
(1) Knowledge and skills
Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. (A. B. E. F.)

**Algebra I**
(1) Knowledge and skills
Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. (A. B. D. E.)

**Algebra II**
(1) Knowledge and skills
Foundations for functions. The student uses properties and attributes of functions and applies functions to problem situations. (B)

**Geometry**
(4) Knowledge and skills

Geometric structure. The student uses a variety of representations to describe geometric relationships and solve problems. The student is expected to select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.

**Pre-Calculus**
(4) Knowledge and skills
The student uses sequences and series as well as tools and technology to represent, analyze, and solve real-life problems.

**Gardner's Intelligences:** Logical/Mathematical

**Bloom's Taxonomy:** Application, Analysis, Synthesis, Evaluation

**Online Resources**

Pacific Opera Victoria. "Giacomo Puccini: His Life and His Operas." 500-1815 Blanshard Street, Victoria, BC V8T 5A4. Accessed on December 1, 2014. http://www.pov.bc.ca/pdfs/puccini.pdf.

Cost of living, Dallas, TX. Accessed on September 15, 2015. http://www.bestplaces.net/cost_of_living/city/texas/dallas.

Currency Conversion. Accessed on September 15, 2015. http://www.oanda.com/currency/converter/.

# Our Composer, Giacomo Puccini

The Italian composer Giacomo Puccini (1858-1924) was the most successful follower of Verdi, continuing the line of Italian operatic composers into the 20th century.

Born in Lucca on Dec. 22, 1858, into a family whose members had composed operas of local success for several generations, Giacomo Puccini learned the rudiments of music from the best local teachers, served as a church organist, and composed sacred choral works while still in his teens. A pension in 1880 from Queen Margherita made it possible for him to go to Milan for study at the conservatory. His most important teacher was the composer Amilcare Ponchielli, who encouraged him to write his first opera, Le Villi, in 1884. The work was entered in a competition sponsored by the Teatro Illustrato but received no recognition there; it was performed with such success at one of the smaller Milanese theaters that it was put on the stage at the famous La Scala opera house in 1885.

*Edgar*, done at La Scala in 1889, was a failure, but *Manon Lescaut*, performed in Turin in 1893, was favorably received and soon became a popular work throughout Italy and abroad. Puccini's first spectacular triumph came in 1896 with *La Bohème*, to a libretto by Giacosa and Illica, premiered in Turin. Its touching portrayal of episodes in the lives and loves of students in Paris and the simplicity and accessibility of the music in joyous, romantic, and pathetic scenes excited and moved audiences from the first performance on, and its popularity has continued to the present day in all countries that enjoy opera.

*Tosca*, again to a libretto by Giacosa and Illica, which was given in Rome in 1900, was a more serious and melodramatic work, with relatively few moments of lyricism, but it was almost as successful and has also become a mainstay of the standard repertory. *Madama Butterfly*, set in Japan, was the first work in which Puccini used scales and melodies of non-Western music. It was poorly received at the first performance at La Scala in 1904, but has since become every bit as popular as *La Bohème* and probably for the same reasons: there are long passages of lush and sentimental music, tunes that are easy to remember, effective scenes of pathos, and well-calculated bits of stage business. *Madama Butterfly* was also his last completely successful work.

Welcoming the opportunity to visit America, Puccini wrote a new work for the Metropolitan Opera in New York City: *The Girl of the Golden West* (*La fanciulla del West*). The first performance, in 1910, was received with the expected enthusiasm, but the opera was not so well received later and is rarely performed today. He endeavored to capture the local color of the American West; there are scenes of gambling and saloons and an attempted lynching, and some of the tunes try to sound like American songs. But in the end the music sounds just like Puccini, and not Puccini at his best.

A comic opera, *La Rondine*, given in Monte Carlo in 1917, has not held the stage. The following year Puccini wrote three one-act operas, *Il trittico*, designed to be done together as an evening's entertainment, and premiered in New York. The first, *Il tabarro*, is melodramatic, much in the style of parts of *Tosca*; *Suor Angelica*, set in a convent and written for women's voices, is lyric and subdued; and *Gianni Schicchi*, the most successful and often done separately, is his best comic work, rapid-paced with some fine moments of contrasting lyricism.

Death took Puccini before he could complete his last work, *Turandot*. He was nearing the end of the work when he was stricken by throat cancer and taken for an operation to Brussels, where he died on Nov. 29, 1924. The opera was completed by Alfano and first performed at La Scala, conducted by Arturo Toscanini, in 1926. It has some fine lyric moments and unusually effective dramatic moments, and in some places it makes more effective use of such pseudo-Oriental devices as pentatonic scales than *Madama Butterfly*, but the work as a whole lacks some cohesion and has not been as perennially popular as some of his earlier operas.

Puccini's strengths are his delicate and sensitive handling of both voices and orchestra in lyric and pathetic scenes and occasionally in lively scenes as well and his ability to write melodies that audiences learn quickly and apparently never tire of hearing. His best scenes are those for one or two characters; ensemble writing in his operas rarely approaches the excitement common in the works of such predecessors as Gioachino Rossini and Giuseppe Verdi.

Music was undergoing dramatic stylistic changes in the last decades of Puccini's life with the works of such men as Igor Stravinsky, Arnold Schoenberg, and Béla Bartók. Puccini clung to the harmonic and melodic language of the late 19th century. The problem of reconciliation between radical changes of musical language and the venerable form of opera has been a thorny one, and it should be noted that the last operas to be truly successful in terms of wide acceptance by audiences and retention in the repertory are those of Puccini and Richard Strauss, two men who remained on the periphery of the widespread innovation so characteristic of the first.

Name: _____ Date: _____

*Tosca*

# Activity Worksheet
# Part I: Making a Living as a Composer

**Instructions:** Study the budget below for a composer maintaining a middle class lifestyle in Puccini's time. Then use the Euro and the U.S. dollar to answer the questions.

## Annual Budget

| Category | Euros | U.S. Dollars |
|---|---|---|
| Puccini's weekly allowance (55 euro per wk, for a year)…….. | _____ | _____ |
| Meals outside the home (18 euro per wk, for a year)…….. | _____ | _____ |
| Furniture…….. | €837 | _____ |
| Rent (45 euro per month, for a year)…….. | _____ | _____ |
| Travel…….. | €486 | _____ |
| Coal and wood……. | €354 | _____ |
| Household help (30 euro per month, for a year)……. | _____ | _____ |
| Gifts……. | €338 | _____ |
| Clothing…… | €355 | _____ |
| Composing supplies……. | €185 | _____ |
| Medical……. | €224 | _____ |
| Music copying…….. | €112 | _____ |
| Legal services…….. | €50 | _____ |
| Entertainment…… | €36 | _____ |
| Insurance…….. | €32 | _____ |
| Books and newspapers……. | €27 | _____ |
| Taxes…… | €34 | _____ |
| Other…… | €322 | _____ |
| Total……. | _____ | _____ |

1. Calculate the missing amounts in the first column (in euros) in the budget above
2. What is the total amount of the household expenses (in euros)? €__ _____
3. Complete the second column for U.S. Dollars. If the exchange rate is €1.00 to equal $0.76, calculate all categories for the sample budget in U.S. dollars. What is the total amount in dollars? $_____
4. If one dollar from the time period of the chart equals $118 today, what would the total budget for one year of expenses in Euros and USD?

   €_____ $_____

Name: _____ Date: _____

*Tosca*

# Activity Worksheet
# Part II: Making a Living as a Composer

**Bonus Activity:** You're moving to a different country! What an exciting adventure, but now you need to know about the currency of the country you're moving to. Research the average salary for a career you want to pursue. Then chose a country from the list below, or a different country, and research the cost of living in the country of your choice. Then calculate your living expenses in both that country's currency and in the U.S. dollar. Make sure to stay under budget!

To help calculate the cost of living in the U.S., allocate your earnings accordingly: housing = 30%, food and groceries = 15%, transportation = 10%, utilities = 6%, health care = 7%, miscellaneous expenses = 32%

| | |
|---|---|
| England…….. | £1 = $1.54 |
| France……. | €1 = $1.13 |
| Switzerland…. | ₣1 = $1.03 |
| China…….. | ¥1 = $0.16 |
| Australia……. | AU$1 = $0.71 |
| Brazil…….. | R$1 = $0.26 |
| Bulgaria…….. | лв1 = $0.58 |

## Annual Budget

| Category | Foreign Currency | U.S. Dollars |
|---|---|---|
| Weekly allowance (total salary/52)……..……. | _____ | _____ |
| Housing……..…….. | _____ | _____ |
| Groceries……..…….. | _____ | _____ |
| Transportation……..…….. | _____ | _____ |
| Utilities…….……... | _____ | _____ |
| Health Care…….……. | _____ | _____ |
| Miscellaneous Expenses (i.e. clothing, restaurants, entertainment)…… | _____ | _____ |
| Total……. | _____ | _____ |

**ANSWER KEY**

*Tosca*

# Activity Worksheet
# Part II: Making a Living as a Composer

| Category | Euros | U.S. Dollars |
|---|---|---|
| Puccini's weekly allowance (55 euro per wk, for a year)…….. | **€2,860** | **$2,145** |
| Meals outside the home (18 euro per wk, for a year)…….. | **€936** | **$702** |
| Furniture…….. | €837 | **$627.75** |
| Rent (45 euro per month, for a year)…….. | **€2,340** | **$1,755** |
| Travel…….. | €486 | **$364.50** |
| Coal and wood……. | €354 | **$265.50** |
| Household help (30 euro per month, for a year)……. | **€360** | **$270** |
| Gifts……. | €338 | **$253.50** |
| Clothing…… | €355 | **$266.25** |
| Composing supplies……. | €185 | **$138.75** |
| Medical……. | €224 | **$168** |
| Music copying…….. | €112 | **$84** |
| Legal services…….. | €50 | **$37.50** |
| Entertainment…… | €36 | **$27** |
| Insurance…….. | €32 | **$24** |
| Books and newspapers……. | €27 | **$20.25** |
| Taxes…… | €34 | **$25.50** |
| Other…… | €322 | **$241.50** |
| Total……. | **€9,888** | **$7,416** |

1. Calculate the missing amounts in the first column (in euros) in the budget above
2. What is the total amount of the household expenses (in euros)? **€9,888**
3. Complete the second column for U.S. dollars. If the exchange rate is €1.00 to equal $0.76, calculate all categories for the sample budget in U.S. dollars. What is the total amount in dollars? **$7,416**
4. If one dollar from the time period of the chart equals $118 today, what would the total budget for one year of expenses in Euros and USD?

   **€1,264,664** **$974,592**