

## Teacher's Guide for Calliope

January 2011: The World's 30 Greats

*Teacher's Guide prepared by: Nancy Attebury, B.S. Elementary Ed., M.A. Children's Literature.*

*She is a children's author from Idaho.*

### **Johann Gutenberg**

**page 2**

**research and creative art**

Have groups of 4 or 5 research one topic below using the internet and library. Have each group comment on the efficiency of each instrument, font, and machine. Share with the class.

- Writing instruments used by cavemen and by people today.
- Fancy fonts used when Gutenberg was alive and decorative fonts used today.
- Machines used to print words from Gutenberg's time and today.

### **Thomas Alva Edison**

**page 5**

**vocabulary**

Match the words with their definitions by writing a number on the blank line.

1. Incandescent      \_7\_ paper giving an inventor the only right to make, use, or sell his or her invention
2. Carbonized      \_5\_ speed and flow of electrical movement
3. Filament      \_6\_ soot that comes from burning materials containing carbon
4. Resistance      \_1\_ glowing or white with heat
5. Current      \_2\_ changed into carbon
6. Lampblack      \_3\_ threadlike conductor that is heated to glowing when current passes through it
7. Patent      \_4\_ degree to which an electrical component opposes the passage of current.

### **Lewis Latimer**

**page 6**

**class discussion**

As a class compare discuss how Thomas Edison and Lewis Latimer were alike in what they did. Talk about why both are remembered.

### **The Wright Brothers**

**page 7**

**research and creative arts**

- Go to <http://wright.nasa.gov/airplane/eng03.html> on the internet to see a moving animated example of the engine that powered the "first, heavier than air, self-propelled, maneuverable, piloted aircraft" (Quote from the internet source).
- Use books and imagination to create paper airplanes. Fly them and see who has designed a plane that can go the farthest. Talk about how an engine could help your flight.

### **James Watt**

**page 8**

**comprehension**

Answer the following:

1. What engine did Watt improve?
2. What could Watt do well?
3. What device did Watt invent?
4. What is named for Watt today?

### **Leonardo da Vinci, Michelangelo**

**pages 9-10**

**compare/contrast**

Put headings "Similar" and "Different" on the classroom board. Under "Similar" list things that da Vinci and Michelangelo did that were similar. Under "Different" list things that the two did that were not the same. Talk about your finding when you are done.

**Socrates****page 11****philosophize**

Have all students make a list or sketch of several things that they think are "good" in life. Then decide together if "good" actually means possessions or ideas.

Unscramble the following from the article: (some letters may need to be changed to uppercase)

nsodosge                      isebefi                      ltopa                      dgkolwnee                      yhppihsool  
 rarssceot                      viel                      leartosit                      gorcennia                      larom

**Confucius****page 13****analyze**

Teacher directions: Write the Confucius quotes on paper slips and put them in a basket. Divide the class into six groups. Have each group choose a slip. Take 10 minutes to discuss what the quote means to them and what they think it meant when Confucius said it. Share ideas.

- Before you embark on a journey of revenge, dig two graves.
- Forget injuries, never forget kindnesses.
- I hear and I forget. I see and I remember. I do and I understand.
- It does not matter how slowly you go so long as you do not stop.
- When anger rises, think of the consequences.
- He who will not economize will have to agonize.

**Buddha****page 14****opinion/discussion**

Look at Buddha's Eightfold Plan. Why do 1 and 2 go with Wisdom? Why do you 3, 4, 5, and 6 go with Ethical Conduct? Why do 7 and 8 go with Mental Development?

<b>1. Right View</b>	Wisdom
<b>2. Right Intention</b>	
<b>3. Right Speech</b>	Ethical Conduct
<b>4. Right Action</b>	
<b>5. Right Livelihood</b>	
<b>6. Right Effort</b>	
<b>7. Right Mindfulness</b>	Mental Development
<b>8. Right Concentration</b>	

**Sigmund Freud****page 15****research**

Define psychologist. Then find names of four psychologists other than Freud who are famous. See if you can find some from all different time periods. Tell why each is famous.

**Abraham, Moses, Muhammad, Jesus****pages 16-17 categorize**

Put these names on the board. Then put the phrases under the right name.

<b>Abraham</b>	<b>Moses</b>	<b>Muhammad</b>	<b>Jesus</b>
-- often retreated to a cave	--son of God	--went to Mt. Sinai	
--used stories when he spoke	--led people from Egypt	--a shared father figure	

**Mahatma Gandhi****page 18****interview**

Pretend you are a reporter in Gandhi's day. Read the article and write four (4) questions that you would ask him in an interview. Make sure answers to the questions are in the article. Then ask a classmate the questions and have the classmate answer correctly.

**Thomas Jefferson****page 19****comprehension**

Write T (True) or F (False) on the line in front of the statement about Jefferson.

- \_\_\_\_ Jefferson went to school to become a lawyer.
- \_\_\_\_ Jefferson was the thirtieth president of the U. S.
- \_\_\_\_ Jefferson could not help when the Declaration of Independence was written.
- \_\_\_\_ Jefferson could not be the Vice President because he was minister to France.
- \_\_\_\_ Jefferson was a rebel, diplomat, and scientist.

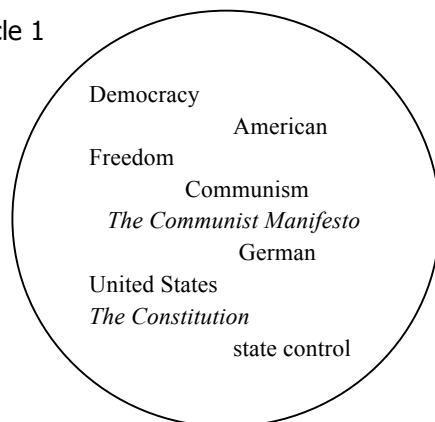
**Marcus Garvey****page 20****comprehension**

1. What was Garvey's mission?
2. Why is he remembered?
3. What was the UNIA?
4. Why was the Black Star Co. started?

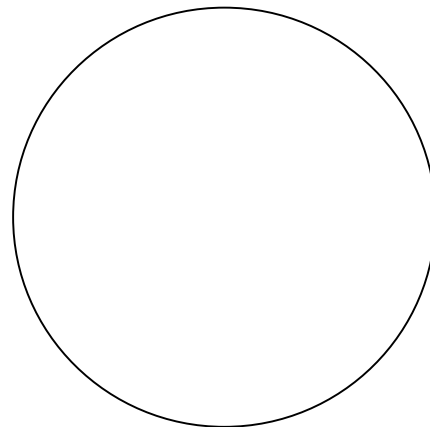
**Friedrich Engels and Karl Marx****pages 21-22**

Words in Circle 1 below are all mixed up. Only some words come from the articles and pertain to Engels and Marx. Put words that relate to Engels and Marx in the Circle 2.

Circle 1



Circle 2

**Hammurabi****page 24****discussion**

Discuss why Hammurabi was considered a lawgiver, king, and visionary.  
Discuss Hammurabi's code. Talk about what was good in it. Talk about what it did for different classes of people. Talk about what it did for women. Talk about how it treated slaves.  
Discuss why his code is considered the ancestor of all written codes of law.

**Alexander the Great, Constantine the Great****pages 24-25, 27****compare/contrast**

Split the class in half. Give each half a large sheet of blank butcher paper. Write Alexander the Great on top of one paper. Write Constantine the Great on the other. Have students list information from the article that makes each of the leaders "Great." Hang the finished papers up in the classroom and consider things that are the same and different about each leader.

**Adolf Hitler****page 26****reading for understanding**

Think about why Hitler was considered a dictator and how his actions changed the world. Find one of more of these books in the library. Choose one to read and share the story with the class.

*The Devil's Arithmetic* by Jane Yolen

*The Boy in Striped Pajamas* by John Boyne

*Hitler's Daughter* by Jackie French

*Hitler's Last Gamble: Battle of the Bulge* by Bill Cain and Dheerja Verma

**Marco Polo and Christopher Columbus**

**pages 28-29 creative writing**

Read both articles and access more information about the two using the library or internet. Then choose one of the explorers and create a half page dialogue about what the explorer may have said to a person your age after returning from an expedition. Share the dialogues.

**Charles Darwin**

**page 30-31**

**comprehension**

Use the article and fill in the blanks.

Darwin collected \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ when he was young. His father wanted him to study \_\_\_\_\_ when grew up. He liked lectures about \_\_\_\_\_. He traveled to \_\_\_\_\_ in 1831. He sailed around the world on the \_\_\_\_\_ for five years. He wondered why so many \_\_\_\_\_ existed. He wrote in \_\_\_\_\_ because his findings were radical. In \_\_\_\_\_ Darwin wrote his summary of his findings. It shocked many people because he knew it went against \_\_\_\_\_ and \_\_\_\_\_ ideas during that time. His ideas of \_\_\_\_\_ (evolution) were debated. He created \_\_\_\_\_ biology. His work changed \_\_\_\_\_.

**Rachel Carson**

**page 34**

**cause/effect**

Match the cause and effect.

- |  |   |
|--|---|
| 1. Because pests damaged crops               | _____ Carson wanted to make people aware of them.         |
| 2. Because Carson studied marine biology     | _____ people wanted the government to stop pesticide use. |
| 3. Because pesticides were killing birds     | _____ Carson studied how pesticides effected environment. |
| 4. Because chemicals had affected life       | _____ a Science Advisory Committee was formed.            |
| 5. Because Carson wrote <i>Silent Spring</i> | _____ she wrote <i>Under the Sea Wind</i> .               |
| 6. Because John F. Kennedy believed Carson   | _____ pesticides were used to reduce their numbers.       |
| 7. Because Carson made people aware          | _____ more of them became environmentally conscious.      |

**Galileo**

**pages 36**

**experimentation**

As a class, try two of Galileo's experiments.

1. Choose two objects, one heavier than the other. Drop them from the same height and see which one falls fastest.
2. Choose two balls exactly the same. Tie each to a piece of string. Pull one ball back twice as far as the other and observe how they swing when you let them go. Talk about your findings.

**Marie Curie**

**page 37**

**comprehension**

Put Marie Curie's name at the top of a piece paper. Under her name list the things that she discovered and the things that she was "first" in doing. Can you find other things Curie did? If so, add them to the list.

**Louis Pasteur**

**page 37**

**defining**

Things below can be pasteurized. Choose one, find how it's pasteurized, share the information.

almonds	apple cider	bread	cheddar cheese	cornbread
crabs	cream	eggs	grapefruit juice	maple syrup
milk	orange juice	soy sauce	sports drinks	vinegar

**Euclid****page 38****interpretation/opinion**

As a class, discuss these quotes by Euclid and talk about what they mean.

"The laws of nature are the mathematical thoughts of God." "There is no royal road to geometry."

**Alexander Fleming****page 39****science**

See if a biology lab in a local school or a doctors' office will let you look at a specimen in a petrie dish or look up "images in petrie dishes" on the internet.

**Al-ma'mun: Caliph of Baghdad****page 40****comprehension**

Talk about why was Al-ma'mun important? Then circle the correct answer from the article.

- |  |                   |    |                    |
|--|-------------------|----|--------------------|
| 1. What grew during al-Ma'mun ruled Egypt?     | Arts and sciences | or | Physical education |
| 2. What did he like to gather?                 | Livestock         | or | Books              |
| 3. What subject does <i>aljabr</i> related to? | History           | or | Algebra            |
| 4. What was the <i>Bayt of Hikmah</i> ?        | House of Wisdom   | or | Bay of Hikers      |
| 5. What is a <i>khalifah</i> ?                 | King              | or | Successor          |

**Shakespeare****page 42****creative drama**

Teacher directions: Print the free Shakespeare word search puzzle for kids at <http://www.puzzle-club.com/shakespeare-h.html>. Have students find the Shakespeare play titles in the puzzle. See if they can find some of the plays in the library and talk about them.

**Beethoven, Mozart, The Beatles****page 44-45****music listening**

Find and listen to two pieces of music written by Beethoven, two written by Mozart, and two written by the Beatles. Listen to the music and compare songs as well as time periods when the music was written. Discuss why music by these composers has remained popular.

**Homer****page 46****poetry class work**

Find copies of the *Odyssey* and the *Illiad*. Read various sections and discuss the tales. As a class, discuss what you think the main idea is in each tale. Work together in groups to create one or two stanzas of poetry that tell a story about a great event in history.

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**Answers:****Thomas Alva Edison****page 5****vocabulary**

- |                   |     |  |
|-------------------|-----|--|
| 1. Incandescent   | _7_ | paper giving an inventor the only right to make, use, or sell his or her invention |
| 2. Carbonized     | _5_ | speed and flow of electrical movement  |
| 3. Filament       | _6_ | soot that comes from burning materials containing carbon                           |
| 4. Resistance     | _1_ | glowing or white with heat   |
| 5. Current        | _2_ | changed into carbon  |
| 6. Lampblack      | _3_ | threadlike conductor that is heated to glowing when current passes through it      |
| 7. Patent current | _4_ | degree to which an electrical component opposes the passage of                     |

**James Watt****page 8****comprehension**

- |                          |  |
|--------------------------|--|
| 1. Newcomen steam engine | 2. work with his hands, do math, solve mechanical problems |
|--------------------------|--|

3. device that regulated speed of a steam engine 4. electrical unit called the watt

**Socrates**

goodness  
Socrates

beliefs  
live

**page 11**

Plato  
Aristotle

**philosophize**

knowledge  
ignorance

philosophy  
moral

**Abraham, Moses, Muhammad, Jesus**

**Abraham**

-a shared father figure

**Moses**

-went to Mt. Sinai  
-led people from Egypt

**pages 16-17**

**Muhammad**

-often retreated to a cave

**Jesus**

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he spoke

**Thomas Jefferson**

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☐ F Jefferson could not help when the Declaration of Independence was written.  
☐ F Jefferson could not be the Vice President because he was minister to France.  
☐ T Jefferson was a rebel, diplomat, and scientist.

**Friedrich Engels and Karl Marx**

**pages 21-22**

Circle 2



**Charles Darwin**

**page 30-31**

Darwin collected beetles, rocks, and seashells when he was young. His father wanted him to study medicine when grew up. He liked lectures about natural history. He traveled to South America in 1831. He sailed around the world on the Beagle for five years. He wondered why so many species existed. He wrote in secret notebooks because his findings were radical. In 1859 Darwin wrote his summary of his findings. It shocked many people because he knew it went against religious and scientific ideas during that time. His ideas of "transmutation" (evolution) were debated. He created experimental biology. His work changed science.

**Rachel Carson**

**page 34**

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3. Because pesticides were killing birds
4. Because chemicals had affected life
5. Because Carson wrote *Silent Spring*
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7. Because Carson made people aware

pesticides were used to reduce their numbers.  
she wrote *Under the Sea Wind*.  
Carson studied how pesticides effected environment.  
Carson wanted to make people aware of them.  
people wanted the government to stop pesticide use.  
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**Al-ma'mun: Caliph of Baghdad**

**page 40**

**comprehension**

1. Arts and sciences
2. Books
3. Algebra
4. House of Wisdom
5. Successor

