1- Famous Scientists

Content Area: **Social Studies**
Course(s): **Famous People**
Time Period: **February**
Length: **18 Class Period**
Status: **Awaiting Review**

Title Section

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Famous People Grades 10-12

Unit 1- Famous Scientists

Belleville Board of Education

102 Passaic Avenue

Belleville, NJ 07109

Prepared by: Mr. Robert Rubinson, Teacher of Social Studies

Board Approved:

Unit Overview

Unit One will examine how participation in society can contribute to the attainment of individual and public good; what the contributions of the Scientific Revolution were to society, including important discoveries in mathematics, physics, biology, and chemistry, and the significance of the scientific method; the paradoxes and promises of the 21st century, including technological growth, communications, and warfare; and leaders in the world.

Enduring Understanding

Participation in society can contribute to the attainment of individual and public good

The Scientific Revolution made many contributions to society, including important discoveries in mathematics, physics, biology, and chemistry, and the significance of the scientific method

There were paradoxes and promises of the 21st century, including technological growth, communications, and

warfare

Leaders in the world employed technological invention for warfare.

Essential Questions

What did the scientists contribute to society?

How did these inventions and/or discoveries alter society?

What obstacles did the scientists overcome in their work?

What were the circumstances that led to the scientific discoveries and/or inventions?

Exit Skills

By the end of Unit 1,

1. Students should be able to apply domain-specific vocabulary in their verbal and written responses, essays and papers.

2. Students should be able to choose a side to a query and provide logical argument for their choice.

3. Students should be able to deductively use new information and logically apply this evidence to a related problem.

4. Students should be able to inductively gather information and deduce a theory based on their findings.

5. Students should be able to gather information in meaningful clusters and apply their findings to specific problems.

New Jersey Student Learning Standards (NJSLS-S)

LA.RH.11-12.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole.
LA.RH.11-12.2	Determine the theme, central ideas, information and/or perspective(s) presented in a primary or secondary source; provide an accurate summary of how key events, ideas and/or author's perspective(s) develop over the course of the text.
LA.RH.11-12.3	Evaluate various perspectives for actions or events; determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
SOC.6.1.12.C.16.a	Evaluate the economic, political, and social impact of new and emerging technologies on individuals and nations.
SOC.6.1.12.C.16.b	Predict the impact of technology on the global workforce and on entrepreneurship.
SOC.6.1.12.D.16.a	Analyze the impact of American culture on other world cultures from multiple perspectives.
SOC.6.1.12.D.16.b	Explain how and why technology is transforming access to education and educational practices worldwide.
SOC.6.1.12.D.16.c	Determine past and present factors that led to the widening of the gap between the rich and poor, and evaluate how this has affected individuals and society.

Interdisciplinary Connections

LA.RH.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, qualitatively, as well as in words) in order to address a question or solve a problem.
LA.RH.11-12.8	Evaluate an author's claims, reasoning, and evidence by corroborating or challenging them with other sources.
LA.RH.11-12.9	Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.
LA.RST.11-12.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
LA.RST.11-12.2	Determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
LA.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

Learning Objectives

Students will be able to:

1.Recognize traits of good citizens.

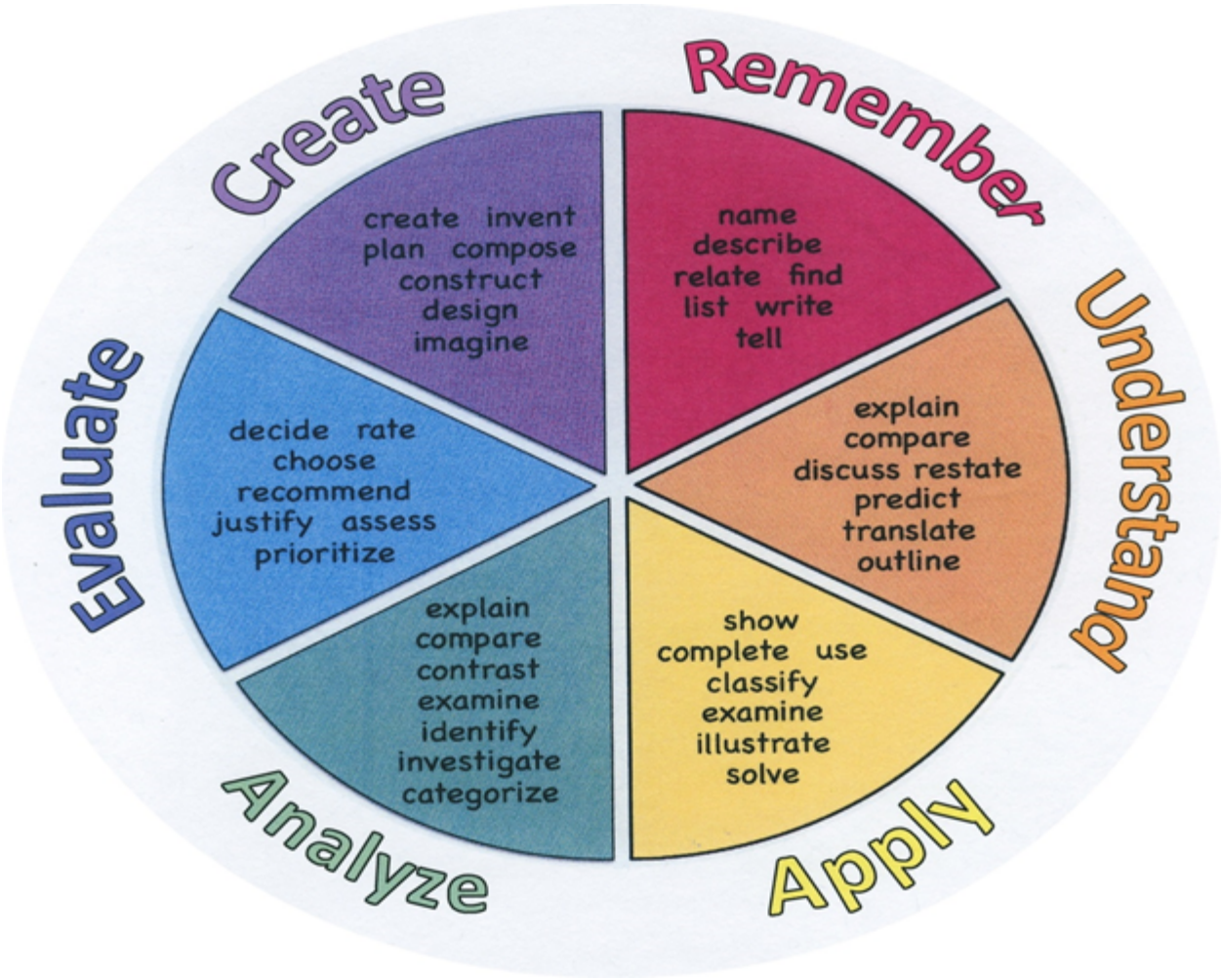
2.Comprehend scientists' contributions towards society.

3.Evaluate paradoxes of scientific inventions.

4.Identify the risks scientists took to create their inventions.

Action Verbs: Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy.

Remember	Understand	Apply	Analyze	Evaluate	Create
Choose	Classify	Choose	Categorize	Appraise	Combine
Describe	Defend	Dramatize	Classify	Judge	Compose
Define	Demonstrate	Explain	Compare	Criticize	Construct
Label	Distinguish	Generalize	Differentiate	Defend	Design
List	Explain	Judge	Distinguish	Compare	Develop
Locate	Express	Organize	Identify	Assess	Formulate
Match	Extend	Paint	Infer	Conclude	Hypothesize
Memorize	Give Examples	Prepare	Point out	Contrast	Invent
Name	Illustrate	Produce	Select	Critique	Make
Omit	Indicate	Select	Subdivide	Determine	Originate
Recite	Interrelate	Show	Survey	Grade	Organize
Select	Interpret	Sketch	Arrange	Justify	Plan
State	Infer	Solve	Breakdown	Measure	Produce
Count	Match	Use	Combine	Rank	Role Play
Draw	Paraphrase	Add	Detect	Rate	Drive
Outline	Represent	Calculate	Diagram	Support	Devise
Point	Restate	Change	Discriminate	Test	Generate
Quote	Rewrite	Classify	Illustrate		Integrate
Recall	Select	Complete	Outline		Prescribe
Recognize	Show	Compute	Point out		Propose
Repeat	Summarize	Discover	Separate		Reconstruct
Reproduce	Tell	Divide			Revise
	Translate	Examine			Rewrite
	Associate	Graph			Transform
	Compute	Interpolate			
	Convert	Manipulate			
	Discuss	Modify			
	Estimate	Operate			
	Extrapolate	Subtract			
	Generalize				
	Predict				



Suggested Activities & Best Practices

Biography of famous scientist with choice of ways to present including written paper, Power Point presentation, Flipgrid production, etc.

Watch short You Tube biography videos, read biography, and answer questions provided by teacher

Show a progression of famous inventions and discoveries through the centuries and highlight the people behind the work

Write in journal what has been written in class

Assessment Evidence - Checking for Understanding (CFU)

- Newspaper Headline

- Journals
- Exit Tickets

- Admit Tickets
- Anticipation Guide
- Common Benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- DBQ's
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Learning Center Activities
- Multimedia Reports
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Surveys
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit review/Test prep
- Unit tests
- Web-Based Assessments
- Written Reports

Primary Resources & Materials

You Tube- for biogphies of scientists

newsela.com

commonlit.org

http://www.edutopia.org/blog/online-resources-primary-source-documents-monica-burns

http://www.eiu.edu/eiutps/CA_H13.php

biography.com

Ancillary Resources

Technology Infusion

- Youtube videos
- Flipgrid as project option
- Multiple technology options for project
- Google Classroom for assignments and background information
- Notes posted to Google Classroom

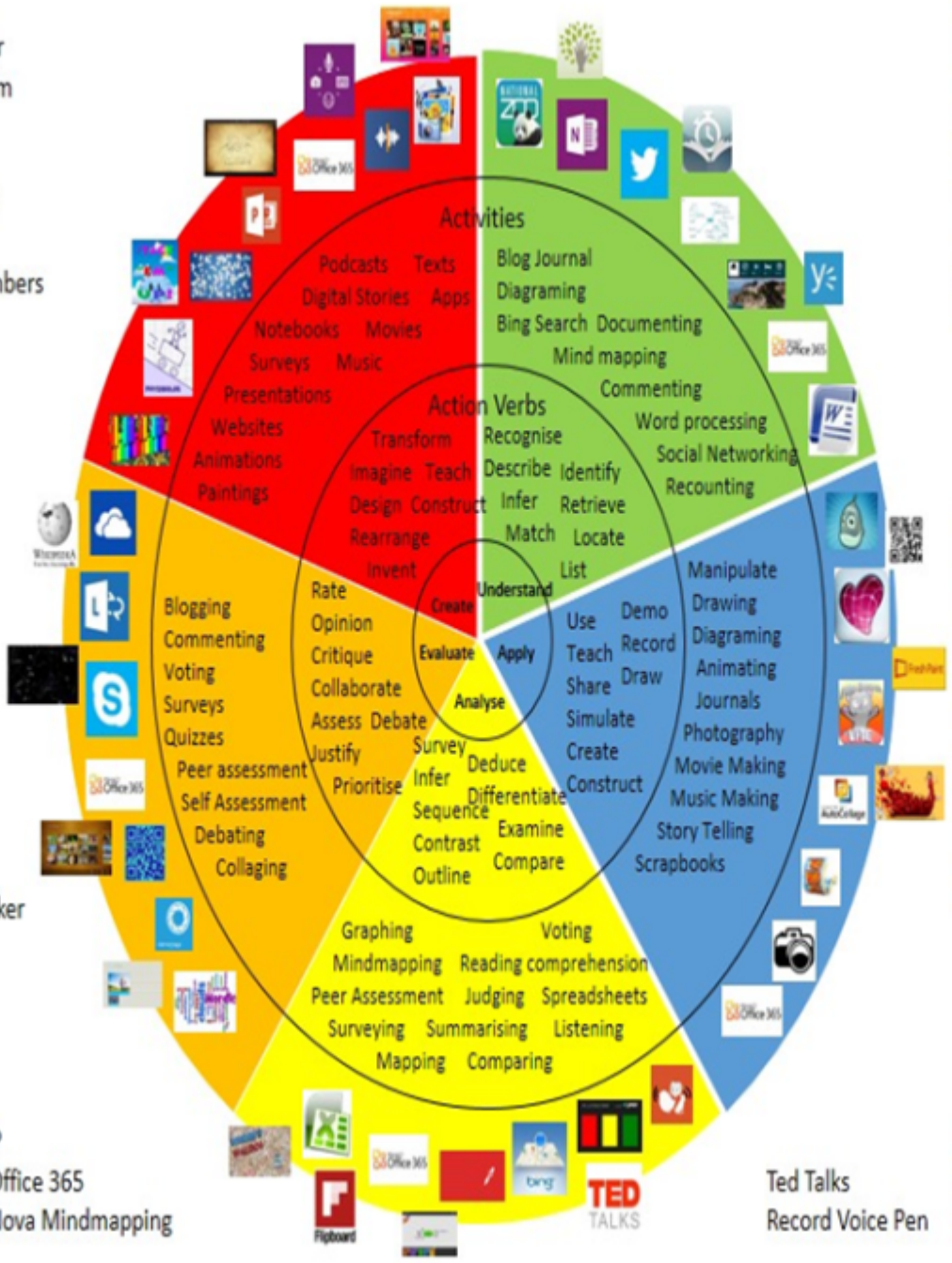
Win 8.1 Apps/Tools Pedagogy Wheel

Podcasts
Photostory 3
Kid Story Builder
Music Maker Jam
Paint A Story
Office 365
MS PowerPoint
Stack 'Em Up
NqSquared Numbers
Physamajig
Xylophone 8

Wikipedia
Skydrive
Lync
SkyMap
Skype
Office 365
Puzzle Touch
Easy QR
Memorylage
Life Moments
Word Cloud Maker

Where's Waldo?
MS Excel
Flipboard
Office 365
Nova Mindmapping

Ted Talks
Record Voice Pen



Alignment to 21st Century Skills & Technology

CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.4	Analyze how economic conditions and societal changes influence employment trends and future education.
CAEP.9.2.12.C.5	Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
CAEP.9.2.12.C.6	Investigate entrepreneurship opportunities as options for career planning and identify the knowledge, skills, abilities, and resources required for owning and managing a business.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
CAEP.9.2.12.C.9	Analyze the correlation between personal and financial behavior and employability.

21st Century Skills/Interdisciplinary Themes

- Information Literacy
- Media Literacy
- Communication and collaboration

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

21st Century Skills

- Environmental Literacy
- Global Awareness
- Health Literacy

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

Differentiation

- Student work with assigned partner
- Preview content and concepts
- Small group assignments

Differentiations:

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe
- Small group setting

Hi-Prep Differentiations:

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas

- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

Lo-Prep Differentiations

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

Special Education Learning (IEP's & 504's)

- Provide modifications as dictated in the student's IEP/504
- have student repeat instructions to check for understanding
- modified assignment format

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content

- modified test format
- modified test length
- multiple test sessions
- multi-sensory presentation
- preferential seating
- preview of content, concepts, and vocabulary
- Provide modifications as dictated in the student's IEP/504 plan
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

English Language Learning (ELL)

- decrease the amount of work presented or required
- tutoring by peers
- providing study guides

- teaching key aspects of a topic. Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

At Risk

- allow the use of note cards or open-book during testing
- tutoring by peers

- decreasing the amount of work presented or required

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

Talented and Gifted Learning (T&G)

- Debate issues with research to support arguments
- Advanced Problem Solving
- Allow students to work at a faster pace

- Above grade level placement option for qualified students
- Advanced problem-solving
- Allow students to work at a faster pace
- Cluster grouping
- Complete activities aligned with above grade level text using Benchmark results
- Create a blog or social media page about their unit
- Create a plan to solve an issue presented in the class or in a text
- Debate issues with research to support arguments
- Flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project
- Teacher-selected instructional strategies that are focused to provide challenge, engagement, and

growth opportunities

- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge

Sample Lesson

Unit Name: Famous Scientists

NJSLS: SOC.6.2.12.C.3.d: Determine how, and the extent to which, scientific and technological changes and transportation changes. *SOC*.6.2.12.D.2.d: Analyze the impact of new intellectual, philosophical, and scientific ideas on how humans viewed themselves and how they viewed their physical and spiritual lives.

Interdisciplinary Connection: Reading and Writing

Statement of Objective: Understand the importance of the Scientific Revolution and the contributions to society during that period

Anticipatory Set/Do Now: Who was the scientist that claimed the sun was the center of the universe, rather than the earth? What do you know about him? Discussion

Learning Activity: Student Centered Activity with QRD codes. Teacher will prepare six groups of students. At each station will be a paper with QRD code for students to scan the Youtube video on their phones detailing one of the great scientists of that time. Students without a phone will buddy up with one who does. Students will take notes from the video. After 5 minutes, time will be called and students will move to the next statio, etc. At the end of 30 minutes, students will have a complete set of notes, allowing for at least 15 minutes of discussion. Notes will be submitted for grades. During QRD activity, teacher will roam from group to group asking students questions about their video.

Student Assessment/CFU's: Student responses during video activity, discussion responses and quality of notes.

Materials: QRD codes will be taken from good Youtube videos by the teacher and copied onto paper.

21st Century Themes and Skills: : Student responses during video activity, discussion responses and quality of notes.

Differentiation/Modifications: Small group work, Note taking practice

Integration of Technology: Laptop for preparing QRD codes, and students scanning the codes via cell phones.