



# Commonwealth Honors Conference Middlesex Community College April 2011













## SERGEI NIKOLAYEVICH WINOGRADSKY

- born Sept. 1, 1856, Kiev, Russian Empire
- died Feb. 25, 1953, Bois-Combe-Robert, France
- Russian microbiologist
- proposed new methods of studying soil microorganisms (Winogradsky Column)
- discovered the microbial agents responsible for nitrification (the oxidation of ammonium salts to nitrites and nitrates to nitrates)

## WINOGRADSKY COLUMNS ILLUMINATED: THE EFFECT OF DIFFERENT LIGHT ON BACTERIA



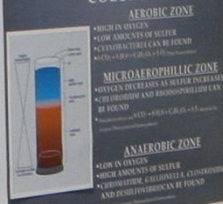
## GOAL

TO OBSERVE THE EFFECTS OF DIFFERENT LIGHT ON SELF-CONTAINED AEROBIC AND ANAEROBIC ORGANISMS

## HYPOTHESIS

EACH DIFFERENT TUBE WILL EXPERIENCE DIFFERENT REACTIONS. IF THE COLUMN IS EXPOSED TO HARMFUL CONDITIONS, THEN THE ECOSYSTEM WILL FALL APART. THE COLUMNS EXPOSED TO U.V. LIGHT SHOULD SUFFER THE WORST OF THE EFFECTS.

## THE WINOGRADSKY COLUMN



## ORGANISMS SEEN UNDER THE MICROSCOPE

### CYANOBACTERIUM



### PROTISTS



## OTHER ORGANISMS OBSERVED

### GREEN SULFUR BACTERIA CHLOROBIVUM (GENUS)



### PURPLE NON-SULFUR BACTERIA RHODOSPIRILLUM (GENUS)



## METHODS

1. To create Winogradsky Columns:
  - Add about 40g of "pond" mud to each of 4 test tubes.
  - Add about 2g of Calcium Sulfate and Sodium Phosphate, and 1g of cellulose to each tube and stir.
  - Add about 10mL of "pond" water.
2. Expose to light sources- Natural (control), Incandescent, Fluorescent, and Ultraviolet
3. Observe changes in color and size of layers
4. Observe content of columns under a microscope

## REFERENCES

**PAGES FROM**

<http://www.pgsa.com>

<http://www.biology.com>

<http://www.pgsa.com>

<http://www.pgsa.com>

<http://www.pgsa.com>

<http://www.pgsa.com>

**OTHER INFO FROM**

<http://www.pgsa.com>

<http://www.pgsa.com>

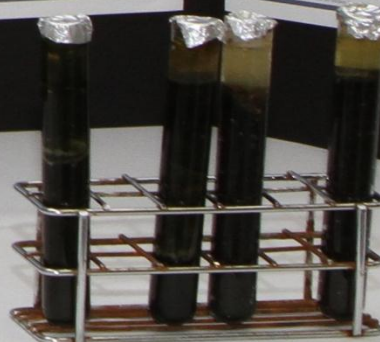
## RESULTS

- Incandescent
  - cyanobacteria and protists visible under the microscope in large quantities
  - microfilm most formed in aerobic water
  - sulfur layer clearly visible in column
- Fluorescent
  - cyanobacteria and protists visible under the microscope in large quantities
  - possible sulfur layer visible but not defined
- Natural Light
  - cyanobacteria and protists visible under the microscope in small quantities
  - no visible sulfur layer
- U.V. Light
  - protists visible under the microscope
  - no cyanobacteria under the microscope
  - no visible sulfur layer

## CONCLUSIONS

The results support my hypothesis that harmful conditions affects the growth of the organisms, and that the column exposed to U.V. light suffered the worst effects.

Possible factors affecting the results:  
pH  
Temperature  
Difference in time of exposure to light



Commonwealth Honors Program  
MIDDLESEX COMMUNITY COLLEGE

POSTER BOARD CONFERENCE

TABLE # 35A

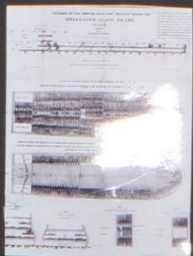




Basin, France  
and Cochin China

by Galsip  
TABLE 1B

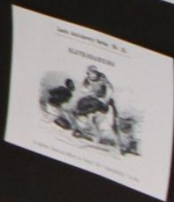
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**SLAVES AT AUCTION.**  
On THURSDAY the 24th inst.  
WE WILL SEE  
in front of our Office, between one and two, all or more for sale,  
10 JS LIKELY NEGROES  
As they were offered in this market, among them is a man who is a  
superior Cook and House Servant, and a girl about 17 years old, a  
first rate House Servant, and an excellent seamstress.



# Slavery: Ancient and Modern Cultures















Charlotte Perkins Gilman

Commercial Union Bank  
Member FDIC  
Porter Board Conference  
Mark Valentine  
TABLE 19A

## Thesis

Wang Wei's gaming and poetry reflect his Chan Buddhist philosophy, the belief that words alone cannot adequately explain the true state of enlightenment. The natural world is the only reality; a person should live a life without deliberate effort or purpose. The influence of Chan Buddhism is exhibited in Wang Wei's spareness of words and the minimalism of his paintings.

## Painting

**Deer Park**  
 Well empty, no one to be seen  
 Was here only voices raised –  
 With light coming back into the deep wood  
 The top of the green moon is lit again.  
 - translated by G. W. Hoffmann, 1997

*Deer Fence*  
Empty hills, no fire or light,  
only the sound of someone talking  
late sunlight enters the deep wood,  
gliding over the green moss again  
translated by Kiyoko Wobson, 1979

*The Deer Park*  
 Every hill, and no one in sight  
 Saw the echo of noon  
 Lying out at evening penetrates the deep woods  
 Shines reflected on the blue lichens  
 —recollected by Susan Amers, 1944

*The Form of the Door*

To know upon the hills there is no one in sight there  
But whence is the echo of voices I hear?  
The rays of the sunset power slanting the forest,  
And in their reflection green mosses appear  
—translated by H. J. Finch, 1997

## Poetry

### Works Cited

Wang Wei's eclectic Buddhist philosophy is exquisitely expressed in both his classic Tang Dynasty poetry and his avant garde minimalist painting. It has been said that Wang Wei was able to "put painting into his poetry and poetry into his painting" (perfectly phrased).

Wang Wei's poetry had many meanings, and its indirect references expressed man's passionate search for enlightenment. Through the use of words and painted images, Wang creates a portal into the search for enlightenment, his ability to capture the solitude of the inner soul is the essence of his work. Clearly the influence of Chan Buddhism on Wang Wei's work is apparent in the openness of his work and his vision of his landscape painting.

understanding of life is beyond words, his verses can only partially convey the meditative influence of Chan Buddhism. His spare poems resonate with the simple beauty of nature. His reflection of Chan Buddhism is seen in his brief lines and few words. His style of sparse poetry is of simple thoughts and clarity of eye view on the earth.

During the Tang the poetry became an essential element of social communication. Poetry writing reached new heights, becoming the primary form of literature in China. Its writers had access of imperial court, erudite, philosophical thought, social comments, and political ideas. Poetry was used to discuss current events, religious beliefs, and admire the beauty of the natural world. Tang poets explored personal experience and the fleeting moments of beauty in nature.



# The Influence of Buddhism on Wang Wei's Poetry and Art



Snow over Xiner and Mounts  
(Wang Wei's reproduction of Wang Wei's original)

鹿柴  
空山不見人  
但聞人語響  
返景入深林  
復照青苔上

## Thesis

Wang Wei's painting and poetry reflect his Chan Buddhist philosophy, the belief that words alone cannot adequately explain the true state of enlightenment. The natural world is the only reality; a person should live a life without deliberate effort or purpose. The influence of Chan Buddhism is exhibited in Wang Wei's sparseness of words and the minimalism of his paintings.

## Deer Park

Hills empty, no one to be seen  
Yet hear only voices echoed –  
With light coming back into the deep wood  
The top of the green moon is lit again.

— translated by C.W. Robinson, 1907

## Deer Park

In the Wang Wei poem "Deer Park" the landscape tells the story. Wang is just a silent observer of the sounds and sights of nature. In reading the words, one can visualize the shape of the mountain, hear the echo of a voice blowing through the wind, and feel the sun on the moss. His poems are calligraphy of shapes, words, and texture that are simply told in a few words.

Western translations of classical Chinese poetry can be attributed to Ezra Pound's landmark anthology *Cathay*, published in 1925. This was the first time Chinese poems had been translated into English. Since then, many others have added their interpretations of Wang Wei's poem "Deer Park".

## Character by Character translation

Empty	mountain(s)	language	to see	spacious
but	no one	person(s)	sound	echoed
the return	light and	to enter	dark	green
the return	light and	green	dark	green
light	to enter	the	dark	green
and	to enter	the	dark	green

## Deer Fence

Empty hills, no one in sight,  
only the sound of someone talking  
late twilight enters the deep wood,  
shining over the green moon again.

— translated by Burton Watson, 1970

## The Deer Park

An empty hill, and no one in sight  
But I hear the echo of voices  
The slanting sun of evening penetrates the deep woods  
And shines reflected on the blue looms

— translated by Xueyi Watson, 2014

## The Form of the Deer

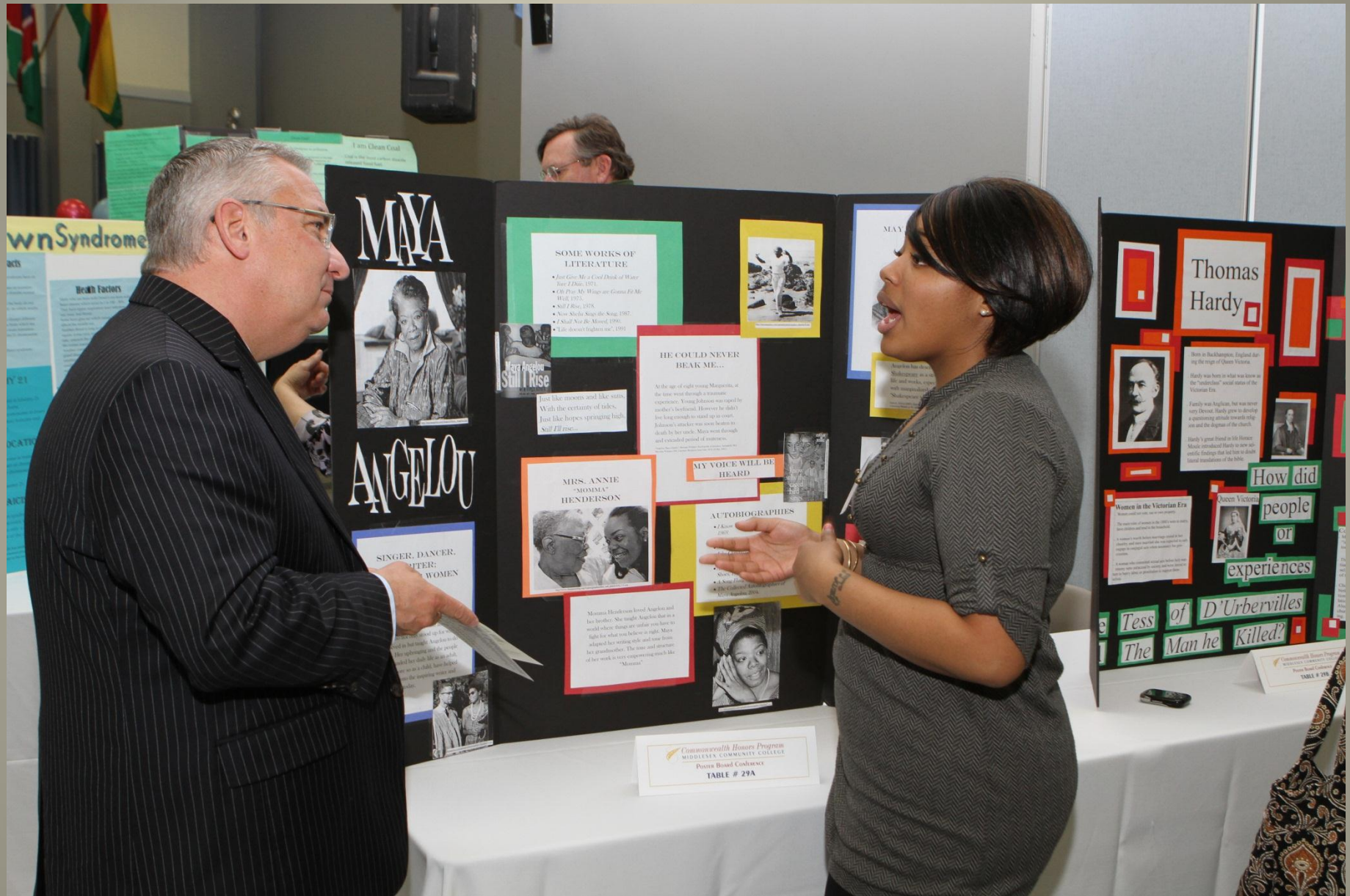
No deer were the hills there is no one in sight there  
But whence is the echo of voices I hear?  
The rays of the sunset penetrate the deep forest,  
And in their reflection green moons appear

— translated by W. J. B. Fletcher, 1920









# MAYA



# ANGELOU

SINGER, DANCER,  
WRITER:  
WOMEN

## SOME WORKS OF LITERATURE

- *Just Give Me a Good Drink of Water* (1957)
- *I'll Fly My Wings as Given* (1961)
- *Still I Rise* (1978)
- *New Negroes Sing the Song* (1987)
- *I Shall Not Be Moved* (1990)
- *A Life Doesn't Frighten Me* (1993)



Just like moon and like stars,  
With the certainty of tides,  
Just like hopes springing back,  
Still I rise...

MRS. ANNIE  
"MOMMA"  
HENDERSON



Mamma Henderson loved Angelou and her brother. She taught Angelou that in a world where things are unfair you have to fight for what you believe is right. Mamma adapted her writing style and voice from her grandmother. The tone and structure of her work is very comforting much like "Mamma".

MY VOICE WILL BE  
HEARD

## AUTOBIOGRAPHIES

- *I Know Why the Caged Bird Sings* (1969)
- *Sister* (1982)
- *The Heart of a Woman* (1987)
- *Letter to My Sister* (1990)



# Thomas Hardy



Hardy was born in what was known as the "unlucky" social status of the Victorian Era.

I family was Anglican, but was never very devout. Hardy grew to develop a questioning attitude towards religion and the dogma of the church.

Hardy's great friend in his lifetime was the poet Alfred, Lord Tennyson.

Hardy's great friend in his lifetime was the poet Alfred, Lord Tennyson.

How did  
people  
or  
experiences

## Women in the Victorian Era

Women could not vote, were not property, and were often treated as second-class citizens.

The women of the Victorian Era were often treated as second-class citizens.

The women of the Victorian Era were often treated as second-class citizens.

Tess of D'Urbervilles

The Man he Killed?

Commonwealth Honors Program  
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Points Based Conference  
TABLE # 29A

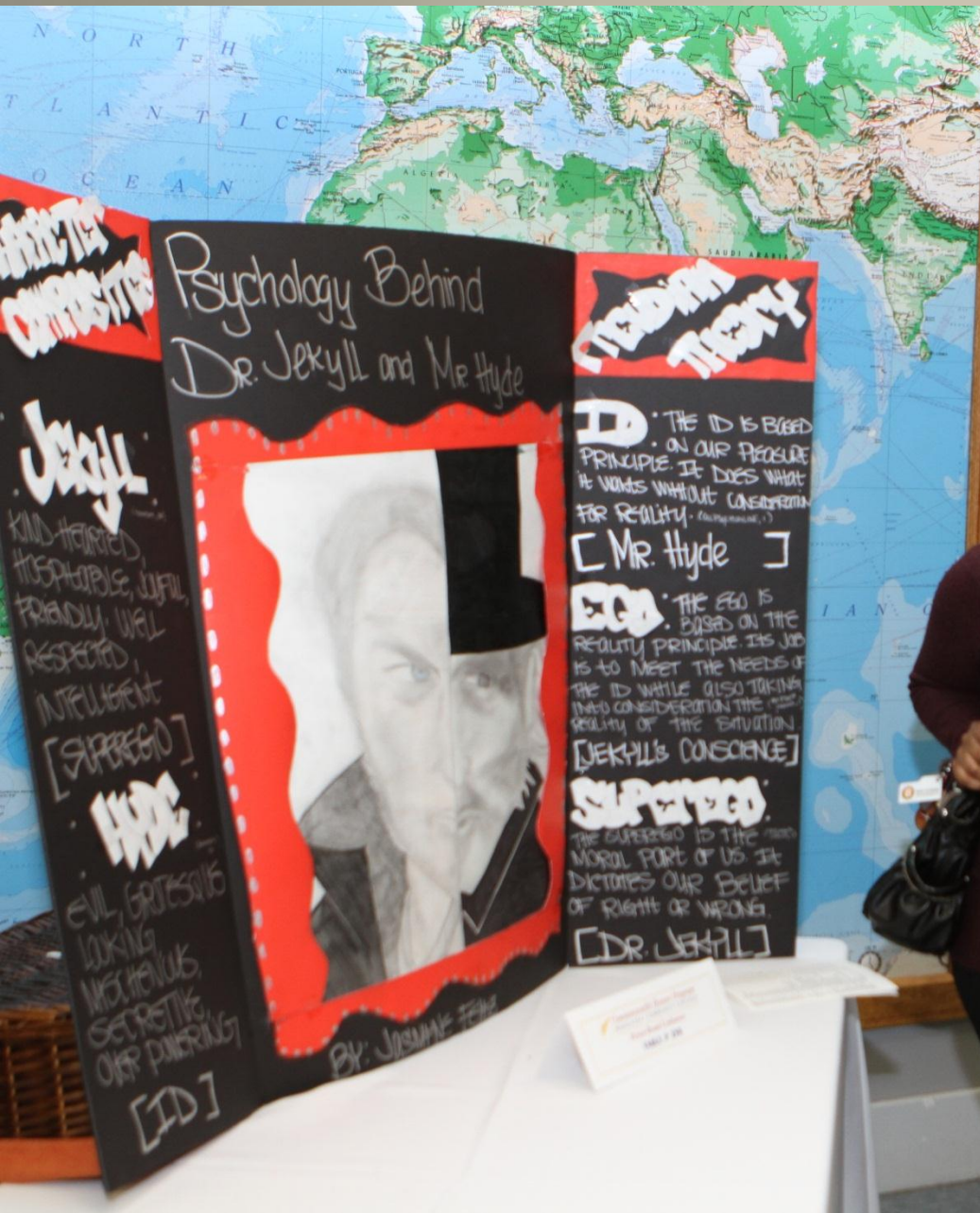






















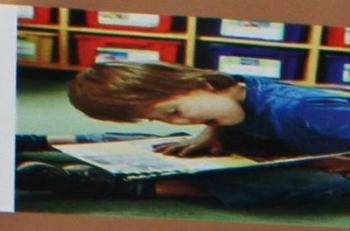






# Development of Memory in Individuals with Down Syndrome

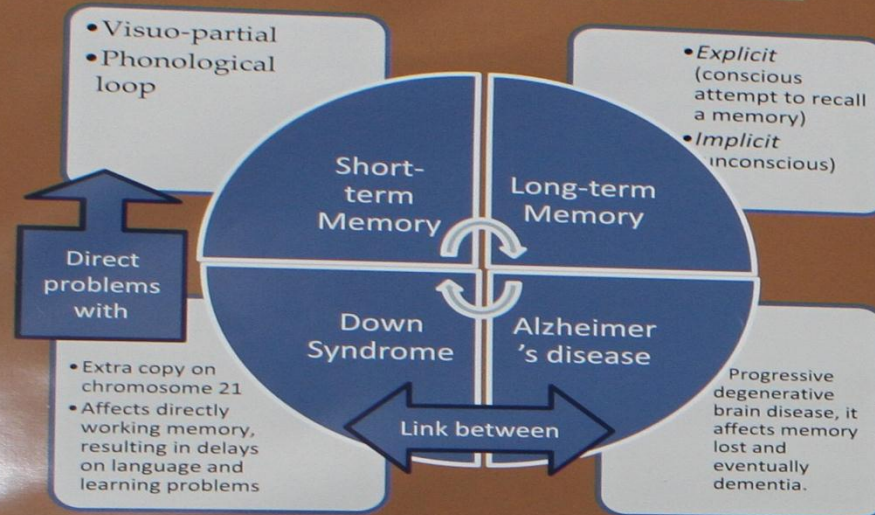
Francisca Palacios, Middlesex Community College



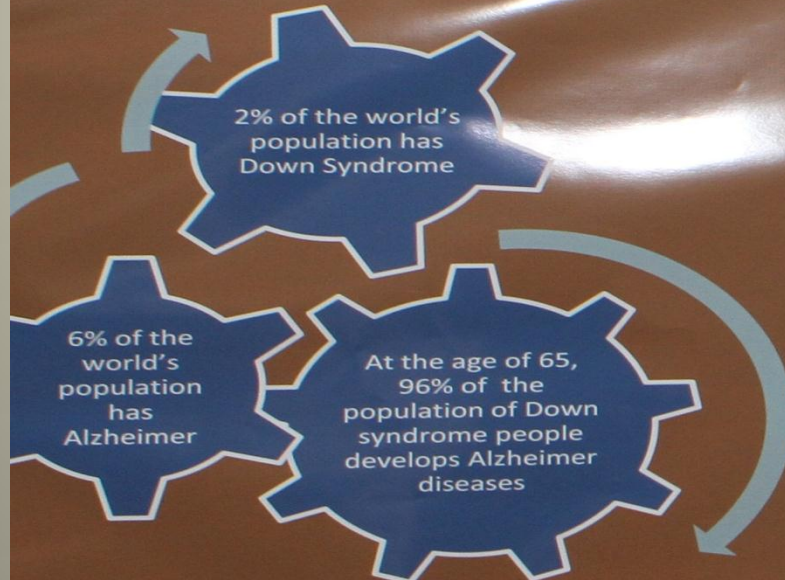
## Introduction

How do we recall situations of our past? How can we grow and learn based on past experiences? How does this ability develop in people with Down syndrome?

Memory is the ability to remember situations as well as the capacity of remembering. Down Syndrome is a genetic disorder that affects directly the part of the brain that is involved with memory. Studies have shown that there is a link between Down syndrome and Alzheimer's disease, that is a type of dementia causing the degeneration of memory.

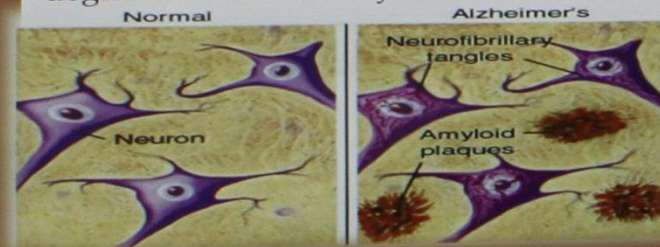


## Statistics



## Conclusion

Memory develops differently in down syndrome individuals because of the basic impairment in the phonological loop of the brain. The link between Alzheimer disease and Down Syndrome is that both individuals have shown a great amount of beta-amyloid plaquets in the brain which causes the degradation of memory.







### What lies in the dark?

Why people fear Mythical Creatures:  
Comparison of Japanese, Celtic, and  
Native American Cultures.

By  
Nicole Lea Hayes  
Middlesex Community College



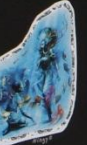
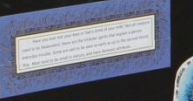
Every culture has mythical creatures. In some ways, these creatures are like people. People have made these creatures as the things they did not know about, or the very things they were afraid of. In some ways, these creatures are like people. People have made these creatures as the things they did not know about, or the very things they were afraid of.



Mythical Creatures: A Comparison of Japanese, Celtic, and Native American Cultures.



Mythical Creatures: A Comparison of Japanese, Celtic, and Native American Cultures.



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### THE GENITAL MUTATION



INTERNATIONAL DAY OF THE FEMALE GENITAL MUTILATION

Nicole A. Hayes  
TABLE 10

Fabiana Lucas  
TABLE 10



# CHILDHOOD J.K. ROWLING

A photograph of actress Emma Watson, who played Hermione Granger in the Harry Potter film series. She is smiling and holding a copy of the book "Harry Potter and the Deathly Hallows" in front of her face, partially obscuring it. The book cover is visible, showing the title and a sunset illustration. She is wearing a light-colored, textured top. The background is dark and out of focus.

LOSING  
A  
MOTHER

TABLE # 26B





**Teaching Strategies**

- Emphasize visual learning
- Use hands on activities
- Provide structured learning with some flexibility
- Make learning relevant to the real world
- Focus the students attention
- Provide non-distracting written work
- Give simple, clear homework
- Minimize fine motor demands
- Expect and encourage appropriate behavior
- Ensure early success in the lessons
- Consider the use of peer tutoring
- Facilitate short and long term memory
- Use the calculator early and frequently
- Use the computer
- Make your interactions enjoyable
- Break down the task into small steps

**Modifications to General Classroom Work**

- Size – reduce the number of items
- Time – extend amount of time for an assignment
- Level of Support – provide more assistance
- Input – modify the way the instruction is given to the student – ex. read the problems aloud
- Difficulty – make the problems easier – ex. use a calculator
- Output – adapt how the student reports his/her learning – ex. using stamps or labels
- Participation – the student participates in only part of the task
- Alternate Goals – have less complex goals than the rest of the class
- Substitute curriculum and goals – student has different instruction and activities for his/her specific goal



**Renewable Energy**

**HYDROPOWER**

Hydropower is a renewable power source using the energy of moving water. It is the most widely used renewable energy source in the world. Hydropower is a clean, safe, and reliable source of energy. It is also a versatile source of energy that can be used to generate electricity, heat, and mechanical power. Hydropower is a clean, safe, and reliable source of energy that can be used to generate electricity, heat, and mechanical power.

**WIND POWER**

Wind power is a renewable power source using the energy of moving air. It is the second most widely used renewable energy source in the world. Wind power is a clean, safe, and reliable source of energy. It is also a versatile source of energy that can be used to generate electricity, heat, and mechanical power. Wind power is a clean, safe, and reliable source of energy that can be used to generate electricity, heat, and mechanical power.

**WIND POWER IS VERSATILE**

Wind power is a versatile source of energy. It can be used to generate electricity, heat, and mechanical power. Wind power is a clean, safe, and reliable source of energy. It is also a versatile source of energy that can be used to generate electricity, heat, and mechanical power.

**WIND POWER IN CLEAN AND GREEN USE**

Wind power is a clean and green source of energy. It does not produce air, soil, or water pollution. Wind power is a clean, safe, and reliable source of energy. It is also a versatile source of energy that can be used to generate electricity, heat, and mechanical power.

**INTEGRATION WITH WIND POWER**

Wind power can be integrated with other renewable energy sources. It can be used to generate electricity, heat, and mechanical power. Wind power is a clean, safe, and reliable source of energy. It is also a versatile source of energy that can be used to generate electricity, heat, and mechanical power.











### JEWISH POLITICS

- Jews ruled the Jewish community to have their own government.
- A law system put together using local laws and customs.
- The Jewish community in Iberia also received privileges that were from the interior Jewish communities.
- The Jewish community was believed to belong to whatever was king.

- Jews were a complete part of the Royal Treasury. Only kings owned them. No lord could have a person working for them.
- No one else could even protect Jews, only the king could protect them.
- When it came to the law, magistrates had control over the Jewish people in the communities.
- The magistrates wanted to be the judge between Christians and Jews.

This was the cause of a huge conflict between the Royal Treasury and the local government. Finally they came to an agreement that the Jews or "the good men" of the city would be the judge.

The Jewish people were often fought constant political battle between the government such as kings.

A law was granted in Toledo in 1176 that the Jews were the king, and are always part of the Royal Treasury.

- The Jewish community made a big political world of medieval Iberia. However, the tolerance of their religion lasted those few hundred years.
- Eventually, the Muslims and the Christians wanted tolerance for the Jewish religion. The Jewish religion was given the option to either convert to Christianity, to be expelled from the country, or to be killed. (1492)

## VENDING MACHINES



## Technology and Medieval Europe

### Paper

Prior to the introduction of paper, Europeans relied on parchment for their needs. However, parchment was far more expensive to make than paper. The first use was so great that a single sheet of parchment could be sold for as much as a whole cow. When paper was introduced, the cost of a whole sheet of parchment was reduced to a whole cow. One paper was often used for many different purposes.

### Cartography

Medieval merchants, private explorers, and the church were interested in the world. This allowed cartographers to accurately describe and map the world. This was an important step in giving them an understanding of the world. Cartographers had to include much more than just the land. They had to include the sea, the sky, and the sun. This was a huge step in the development of cartography.

### Astrolabe

The astrolabe was based on a sphere that represented the Earth. It was used to measure the position of the sun, the moon, and the stars. It was also used to measure the time of day and the time of year. The astrolabe was a very important tool in medieval Europe. It was used by astronomers, navigators, and soldiers. It was also used by the church to determine the date of Easter.

### Compass

The compass was a Chinese invention that was introduced to Europe in the late 12th century. It was used to determine the direction of travel. It was also used to measure the distance of travel. The compass was a very important tool in medieval Europe. It was used by navigators, explorers, and soldiers. It was also used by the church to determine the date of Easter.