Memphis in May
International Festival

Memphis in May
International Teachers' Conference

"Bringing International Culture to Every Classroom"

February 7, 2015

Memphisinmay.org

Session Presenters

Jacek Dutkiewicz has two doctoral degrees (chemistry and engineering) and professor title (highest degree in science and art in Poland). In Poland President of the Republic nominates generals, justices and professors. Jacek Dutkiewicz spent part of his professional life as professor, researcher and administrator in the academia at various universities in Europe, Africa and in the U.S. In the past he performed as a professional musician. Currently he holds a leadership position in the R&D organization of Georgia-Pacific (Koch Industries). He is President of the Polish-American Society of Memphis and Member of the Polish Embassy Advisory Council.

Halina Dutkiewicz received her M.S. in chemistry from the Pedagogical University of Cracow, Proland. She also studied and acquired expertise in textile engineering, cosmetology, fitness, nutrition and agriculture. She has been a scientist, university professor and businesswoman in Poland, Zaire (today Congo in Africa) and in the U.S. Halina Dutkiewicz is a founder and director of the School of Polish Language and Culture in Memphis.

Edward Kozlowski received his M.S. degree in Civil Engineering from University of Zielona Góra in Poland. In 1980's Edward was an activist of Solidarity Movement, for which, he was imprisoned during the Martial Law. He emigrated to US in 1983. He served as Elected Board Member of Polish American-Society, and remains its active member. He is a Senior Designer at Buchart Horn, Inc.

Mark Scarbecz received his Ph.D. in Sociology from the University of Arizona. He is very proud of his Polish ancestry (all four grandparents migrated to the U.S. from Poland) and he has traveled extensively in Poland, including a trip on a U.S. Fulbright Grant in 1992, shortly after Poland transitioned to a democracy and market-based economy. In 1994, he met his wife, Barbara, then a resident of Ğódŧ, Poland. He is currently Assistant Dean for Institutional Affairs at the University of Tennessee College of Dentistry and teaches behavioral science courses to dental students.

Magdalena Teodorowicz came to the United States after graduating with a Master's degree in mathematics at the Pedagogical University of Cracow, Poland in 2001. Since 2003, she has been member of Math Kangaroo in USA which is an international math competition for children from 1st to 12th grade. Before she moved to Memphis she has had coordinated this competition in Chicago. Since 2010 she has been continuing this work here in Memphis which was the first city in Tennessee where the children had the opportunity to be part of this fun event. She is currently State Director of Math Kangaroo in TN, TX, KS and UT. Since 2014 she has been teaching at the Nicolaus Copernicus School of Polish Culture & Language in Memphis, TN.

Ludmila Mitchell was born and raised in Poland. She studied Russian Philology at Gdansk University and in Russia. After earning her MA from Gdansk University she lived in England and studied linguistics. She worked as a teacher of English in Poland, then as an instructor of Russian at the University of Memphis, where she also earned her second MA in ESL. She was a Fulbright scholar to Moscow in the summer of 2014. Currently, she teaches Russian for Shelby County Schools at Whitehaven High School, volunteers as a Polish teacher at the School of Polish Language and Culture in Memphis, and is the secretary of the Polish-American Society of Memphis. She regularly visits Poland, where her close family is still living.

Memphis in May would like to thank ALL of the presenters for sharing their time and knowledge of Poland.

Keynote Speaker- Dr. Jerzy Kossek

February 7, 2015

Walking on the Wild Side – A Portrayal of Poland and Polish Culture and Traditions reflected in the Poetry and Prose of Polish-American Writers

Jerzy Kossek, Ph.D, is a Fulbright Professor at University of California, Riverside, Polish Americanist, poet, literature and music critic, academic lecturer, founder and director of Ethnic Studies Center in Katowice, Poland, music promoter and producer, co-organizer of world biggest Rawa Blues Festival. He is the author of many books about American and Polish-American literature and culture including the first biography of Stuart Dybek *Stuart Dybek – Bard from Chicago* (2012), *American Literature from Pre-Columbian to Contemporary* (2012) and *The Knife Sharpener or on Interaction of Literature, Music and the Arts* (2013).

He is currently working on the biography of the blues understood as cultural phenomenon researching the blues at six major U.S. universities. He is a recipient of the prestigious Keeping the Blues Alive 2015 Award from The Blues Foundation in Memphis, in the category of education which honors people and organizations that have significant contribution for promoting blues music and culture.

Want to turn what you've learned today into $1,000 cash?

Then you should Enter the following Memphis in May Competitions:

International Teacher Competition

Whether you always celebrate the honored country with Memphis in May, or whether you are considering incorporating Memphis in May into your classroom for the first time, this competition is for you! Memphis in May will recognize the teachers with the most outstanding ñglobal classrooms,òteachers who utilize international programming to supplement their curriculum and introduce Panama to their students. The "International Teacher" Grand Prize Winner will receive $1,000, and one Runner Up will receive $500.

Best Polish Classroom

You can win a $1,000 cash prize just for your school by incorporating our honored country into your classroom decoration! Involve your students in decorating your classroom with a theme based on this exciting country.

For complete details and to apply:

http://www.memphisinmay.org/competitions

2015 POLAND
MEMPHIS IN MAY
INTERNATIONAL FESTIVAL

Bringing Poland to the Classrooms of Memphis in 2015

While each of Memphis in Mayôs educational competitions are judged on differing criteria, every Memphis in May competition encourages a show of creativity and demonstrated knowledge of the honored country. Competitions are geared to specific age groups and grade levels, with involvement opportunities available for all grades. Competitions are open to all students attending public, private, or home school within Shelby County, Tennessee. Applications are made available on the Memphis in May website as well as via mass mailings to schools. Judging committees are comprised of local educators, writers, and artists who kindly volunteer their time to examine entries. Competition winners are awarded certificates and savings bond prizes at an awards ceremony in the spring.

PowerPoint Presentation Competition

6-12 Grade Students

Middle and High School Categories

Due to the interest expressed by middle school teachers and administrators, a 6-8 grade category has been added to the PowerPoint Competition! Allow your middle school students to learn about international culture and gain increasingly valuable computer program technology with this fun program.

The PowerPoint Presentation Competition promotes design creativity and allows students to incorporate what they have learned about the honored country through overall presentation, graphic design, and written word. This competition is a wonderful tool to acquaint students with PowerPoint, an increasingly valuable program in the business world, all while exposing them to international culture. First, second, and third place winners will be chosen in two grade categories: **6-8 grade, and 9-12 grades**.

The competition is open to students attending any public, private or home school within the Memphis metro area.

Creative Writing Competition

4-12 Grade Students

The CN Creative Writing Competition promotes literary creativity and allows students to incorporate what they have learned about the honored country through the written word. Creative Writing Competition entries can include any type of literary, fictional or non-fictional work, including but not limited to poems, essays, short stories, plays, narratives, scripts and biographies.

The competition is open to students in grades 4-12 attending any public, private, or home school within the Memphis metro area. First, second, and third place winners will be chosen in three grade categories: Upper Elementary, 4th & 5th grades; Junior, 6th- 8th grades; Senior, 9th - 12th grades.

Children's Poster Competition

K-6 Grade Students

This competition promotes the creative artistry of students in grades K ï 6. Patterned after Memphis in Mayôs Fine Art Poster Program, the studentôs work must depict some aspect of the honored country through the medium of drawing and coloring. One student will become the Grand Prize winner, and his/her work will then be printed and sold by Memphis in May as the 2015 International Childrenôs Poster. The Grand Prize winner will sign and number 100 of the prints. Since there will be a limited number of signed and numbered prints, this lucky young artistôs poster has the potential of becoming a unique collectorôs item. First, second, and third place winners will also be chosen in three grade categories: K - 2nd grades; 3rd - 4th grades; and 5th - 6th grades.

For complete details and to apply:

http://www.memphisinmay.org/competitions

2015 POLAND
MEMPHIS IN MAY
INTERNATIONAL FESTIVAL

Simplified Guide to Polish Pronunciation

(by Ludmiła Mitchell)

1. Polish Alphabet has many letters with diacritical marks which change the sound of the letters to which they are added. The 2015 Educational Curriculum Guide doesn't use these diacritics consistently but you can see them in the materials prepared by Polish presenters.

A Ą B C Ć D E Ę F G H I J K L Ł M N Ń O Ó P R S Ś T U W Y Ź Ż Z

2. Remembering the following key letters will take you a long way toward correct Polish pronunciation: ***C = [ts]*** ***J = [y]*** *in* ***y****et* ***Ł = [w]*** ***W = [v]*** ***Y*** *is a vowel* ***= [i]*** *in* ***f****i****t***

3. Polish also uses double letters that have only one sound. In some cases like in English: ***sz = sh***, ***cz = ch*** but ***rz – [zh]*** pronounced like ***"s"*** *in [vi****s****ion],* ***ch = h***, ***dż = j*** *in [****j****et]*

4. Polish has pairs of letters that look different but are pronounced in the same way:
u = ó / ***ż = rz*** / ***h = ch***

5. There are two nasal sounds: ***ą*** and ***ę*** pronounced as *[ong]* and *[eng]*

6. There are no silent sounds at the end of Polish words: ***Puck [pootsk]***

7. Polish currency is called ***złoty/ zł [zwoti]***. In English it is written as ***zloty***.

Polish Alphabet

Simplified Pronunciation

A a	**Ą ą**	**B b**	**C c**	**Ć ć**	**D d**	**E e**	**Ę ę**
[a]	[ong]	[b]	[ts]	[chee, ch']	[d]	[e]	[eng]
F f	**G g**	**H h**	**I i**	**J j**	**K k**	**L l**	**Ł ł**
[f]	[g] [gum]	[h]	[ee]	[y] [yet]	[k]	[l]	[w]
M m	**N n**	**Ń ń**	**O o**	**Ó ó**	**P p**	**R r**	**S s**
[m]	[n]	[nee, n']	[o]	[oo] book	[p]	[r]	[s]
Ś ś	**T t**	**U u**	**W w**	**Y y**	**Ź ź**	**Ż ż**	**Z z**
[shee, sh']	[t]	[oo] book	[v]	[i] fit	[zhee, zh']	[zh]	[z]

Some of the Words Used in the 2015 Curriculum Guide and Presentations

Famous Poles		
English spelling	**Polish spelling**	**Polish pronunciation**
Bronislaw Komorowski	Bronisław Komorowski	[bro-nee-swaf ko-mo-rof-skee]
John Sobieski	Jan Sobieski	[yan so-byes-kee]
Joseph /Jozef Pilsudski	Józef Piłsudski	[yu-zef peew-suts-kee]
Karol Wojtyla	Karol Wojtyła	[ka-rol voy-ti-wa]
Kazimierz Pulaski	Kazimierz Pułaski	[ka-zhee-myesh pu-was-ki]
Lech Walesa	Lech Wałęsa	[leh va-wen-sa]
Maria Sklodowska-Curie	Maria Skłodowska-Curie	[marya skwo-dof-ska keeree]
Nicolaus Copernicus	Mikołaj Kopernik	[mee-ko-way ko-per-neek]
Tadeusz Kosciuszko	Tadeusz Kościuszko	[ta-de-wush kosh'-ch'u-shko]

Polish History / Legends		
Lech, Czech, Rus	Lech, Czech, Rus	[leh], [cheh], [roos]
Katyn	Katyń	[ka-tin']
Krakus	Krakus	[kra-koos]
Mieszko	Mieszko	[myesh-ko]
Rzeczpospolita	Rzeczpospolita	[zhech-pos-po-lee-ta]
Solidarity / Solidarnosc	Solidarność	[so-lee-dar-no-sh'ch']
Wawel	Wawel	[vavel]

Polish cities / Places		
Elblag	Elbląg	[el-blong]
Czestochowa	Częstochowa	[chen-sto-hova]
Grunwald	Grunwald	[grun-vald]
Katowice	Katowice	[ka-to-vi-tse]
Krakow / Wawel	Kraków / Wawel	[kra-kuf] / [vavel]
Lowicz	Łowicz	[wo-vich]
Lodz	Łódź	[wooch']
Warsaw	Warszawa	[var-sha-va]
Wieliczka	Wieliczka	[vye-lich-ka]
Wrocław	Wrocław	[vrots-waf]
Zamosc	Zamość	[za-mosh'ch']

Session:

Polish Contribution to Breaking Code of Enigma- German Enciphering Machine

Presentation and Activities created by:

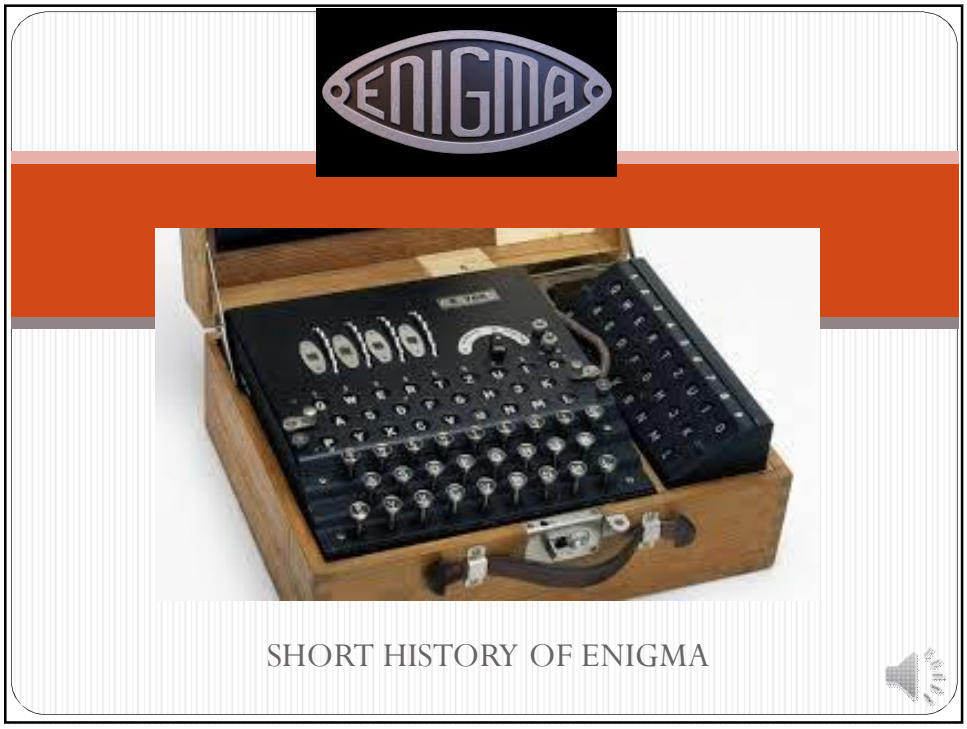
Edward Kozlowski

Polish American Society

This presentation and all resources in this binder are available online at Memphisinmay.org/educationresources

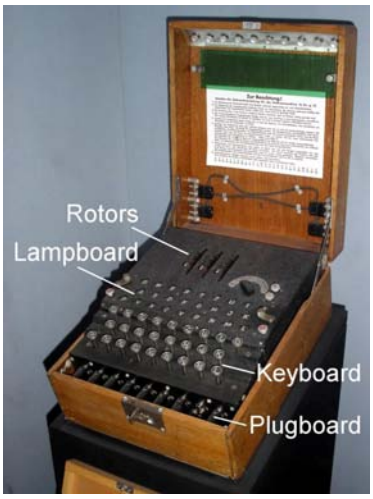
POLISH BREAKDOWN OF ENIGMA

1. HISTORY OF ENIGMA
2. HOW ENIGMA MACHINE WORKS
3. HOW THE POLES FIRST BROKE ENIGMA
4. ENCODINIG/DECODING EXERCISE WITH ENIGMA EMULATOR



The first inventor was an American by the name of Edward H. Hebern (1917) who made the first patent claim, followed by Arthur Scherbius (Germany -1918), Hugo Koch (Netherlands-1919) and Arvid Gerhard Damm (Sweden -1919). Among the four only Scherbius found financial success with his machine.

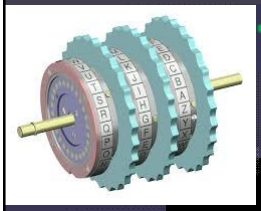
Arthur Scherbius, a Berlin engineer envisaged military applications for his design and started a company to manufacture and sell what he called the Enigma. By 1926 every German army division, ship, and submarine had an Enigma, and through the next twenty years its design was improved many times over and its function made much more complex. By the end of World War II, there was estimated to have been up to 120,000 Enigma machines in use by the German Wermacht.



HOW ENIGMA WORKS

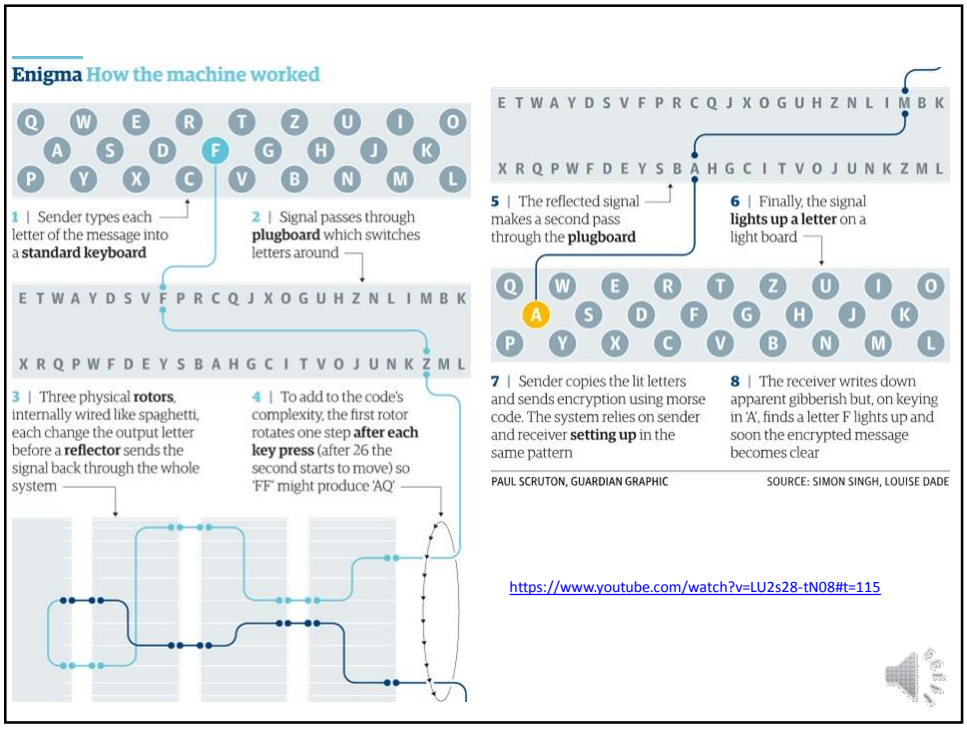
Enigma machine is simple to describe, but infuriating to break.
Enigma looked from the outside like an oversize typewriter. Enter the first letter of your message on the keyboard and a letter lights up showing what it has replaced within the encrypted message. At the other end, the process is the same: type in the "ciphertext" and the letters which light are the decoded missive.

Inside the box, the system is built around three physical rotors. Each takes in a letter and outputs it as a different one. That letter passes through all three rotors, bounces off a "reflector" at the end, and passes back through all three rotors in the other direction.



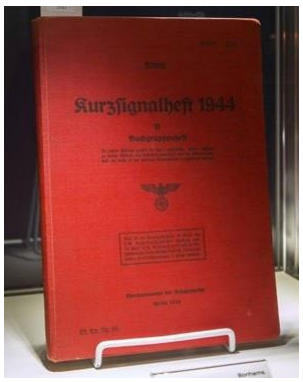
The board lights up to show the encrypted output, and the first of the three rotors clicks round one position – changing the output even if the second letter input is the same as the first one.

When the first rotor has turned through all 26 positions, the second rotor clicks round, and when that's made it round all the way, the third does the same, leading to more than 17,000 different combinations before the encryption process repeats itself. Adding to the scrambling was a plugboard, sitting between the main rotors and the input and output, which swapped pairs of letters. In the earliest machines, up to six pairs could be swapped in that way; later models pushed it to 10, and added a fourth rotor.



https://www.youtube.com/watch?v=LU2s28-tN08#t=115

HOW THE POLES FIRST BROKE ENIGMA



ENIGMA MANUAL

As German military power increased during the 1920's, the Poles felt threatened and vulnerable, situated as they were between two powerful nations, Germany to the West and Russia to the East.

In order to discover the intentions of their potential enemies, they resorted to intelligence gathering. They had a long tradition of this and particularly of code breaking.

The modern use of Radio allowed them to intercept enemy Radio transmissions without revealing their intelligence activities.

From 1928 onward Polish Intelligence intercepted German Radio transmissions using a new cipher system which was eventually identified as coming from an Enigma machine.

Polish Intelligence had obtained examples of the commercial Enigma machine but quickly found that the German Enigma was different in detail from the commercial version.

Jerzy Rozycki

Henryk Zygalski

The Polish Mathematicians

Polish Intelligence were initially unable to break the German Enigma traffic, however driven by the imperative of finding what the Germans were up to, they, uniquely among other nations at that time, decided to try a mathematical approach. In 1932 a team of young mathematicians was set up. It included Jerzy Rozycki, Henryk Zygalski and Marian Rejewski (all of whom were products of the notable flowering of Polish mathematics in the 1920s and 1930s).

Rejewski quickly showed that mathematical techniques could be used to attack the problem of finding the message key by exploiting the German's cryptographic error in repeating the message key at the start of a transmission.

Bertrand (center) with Polish Lt. Col. (Langer left) and British Capt. Kenneth McFarlan

In 1931 and 1932 the French cryptographer Gustave Bertrand obtained priceless information about the German Enigma from a spy, Hans-Thilo Schmidt, known by the code name Asche. The French were unable to use this information to break into the German Enigma traffic. It was also passed to the British who were also at this time unable to break into Enigma. Finally Bertrand passed the information to Polish Intelligence who had not revealed how far they had got with their attack on Enigma. This information, which included German operating instructions for Enigma and two sheets of monthly key settings enabled Rejewski to deduce the internal wheel wiring for all three wheels, but only after he had made an inspired leap of imagination. The problem was the order of the 26 wires connecting the keyboard to the fixed entry disc at the right hand end of the three wheels.

Antoni Palluth

After Rejewski had worked out the military Enigma's logical structure, the Polish Cipher Bureau commissioned the AVA Radio Company, co-owned by Antoni Palluth, to build replicas of the Enigma to Rejewski's specifications. His method of decrypting Enigma messages exploited two weaknesses of the German operating procedures. It used what Rejewski called "characteristics" that were independent of the plugboard connections.

This involved compiling a card catalog of certain features of the set of indicator settings.

Polish cryptanalyst **Marian Rejewski** worked out the mathematical solution in four months, but large scale decryption proved too complex.

As early as September 1932, Polish cryptologists - Marian Rejewski, Jerzy Różycki and Henryk Zygalski - embarked on the task of breaking the code of the Enigma machine. They fully dedicated themselves and their mathematical abilities to that unusual venture, abandoning their promising scientific careers. Attempts at deciphering the code were made simultaneously by the English, French and American Intelligence. However, it was the Polish scientists who in December 1932 first decrypted the Enigma code. The work on decrypting the codes of the subsequently modified Enigma machines started in Poland, but was transferred to France and Great Britain after the outbreak of the war.

Mathematical analysis

The Enigma transformation for each letter can be specified mathematically as a product of permutations. Assuming a three-rotor German Army/Air Force Enigma, let P denote the plugboard transformation, U denote that of the reflector, and L, M, R denote those of the left, middle and right rotors respectively. Then the encryption E can be expressed as

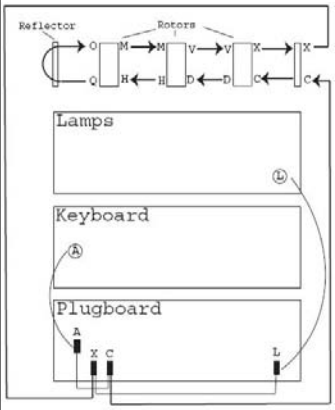
$$E = PRMLUL^{-1}M^{-1}R^{-1}P^{-1}.$$

After each key press, the rotors turn, changing the transformation. For example, if the right-hand rotor R is rotated i positions, the transformation becomes $\rho^i R\rho^{-i}$, where ρ is the cyclic permutation mapping *A* to *B*, *B* to *C*, and so forth. Similarly, the middle and left-hand rotors can be represented as j and k rotations of M and L. The encryption transformation can then be described as

$$E = P(\rho^i R\rho^{-i})(\rho^j M\rho^{-j})(\rho^k L\rho^{-k})U(\rho^k L^{-1}\rho^{-k})(\rho^j M^{-1}\rho^{-j})(\rho^i R^{-1}\rho^{-i})P^{-1}.$$

Combining three rotors from a set of five, the rotor settings with 26 positions, and the plugboard with ten pairs of letters connected, the military Enigma has 158,962,555,217,826,360,000 (158 quintillion) different settings.

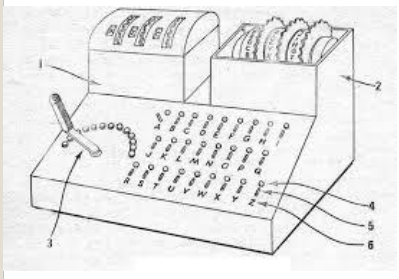
http://www.codesandciphers.org.uk/virtualbp/poles/cyclom.htm



"Cribs"

Although the Poles now had an Enigma replica, this was only half of what was needed. The machines had been designed so that even if the enemy captured one, it would be useless without the keys. A "crib" is a fragment of plaintext which is known to correspond to a section of code of the same length. The Germans were very helpful in furnishing the Poles with cribs. Many of their messages started with "anx" ("an" = "to" in German, with "x" as a word separator).

The German operators helped the codebreakers no end by selecting message keys like AAA, ZZZ, or QAY (the leftmost diagonal of the keyboard).



CYCLOMETER

Rejewski collected a list of the first six letters from all messages transmitted each day. It was known that the first and fourth (1,4), second and fifth (2,5), and third and sixth (3,6) letters of the message key were identical. He was able to construct chains of how the identical letters changed as the scrambler moved each time a letter was entered.

He discovered a characteristic cycle that was different for each scrambler position. In 1934 the "cyclometre" was invented, a device consisting of two sets of rotors and reversing drums three letters out of phase, interconnected by switches and lamps, and operated by hand. It took them a year, but the Poles were able to construct a card catalog of the characteristic cycles at each of the 6 x 17576 possible positions (the 6 possible combinations of the 3 rotor placements multiplied by the number of scrambler positions). After that, it took only 20 minutes to look through the card file and discover the daily setting.

Zygalski Sheets

It took the Poles less than a year to complete the second card catalog, but on September 15, 1938 the Germans changed their method of enciphering the keys, and the card catalog and cyclometre were useless. The only time the doubly enciphered message key could be used was when, by chance, the 1,4, 2,5 or 3,6 pairs were *identical* (for example PST PWA or RLQ MLZ). A 1,4 pair (called a "female") occured on average once every 25 messages. The same holds true for 2,5 and 3,6. The chances that a 1,4 *or* 2,5 *or* 3,6 female occurs is about 1 in 8. If 60 messages in the same basic key were available, chances are that one of the females would appear at least once. Since these could only occur at certain positions of the scrambler, and if those positions could be identified, the message could be decoded.

10 sets of "Zygalski sheets" (one set for each of the ten possible rotor positions) were prepared. Each set consisted of 26 large squares of paper (one for each position of the slow rotor), marked at the top and side with letters of the alphabet. Rows represented the position of the of the middle rotor; columns positions of the slow rotor. If a female was possible at some position of the rotors (for example, the "A" sheet of the slow rotor, with center rotor at "M" and the fast rotor at "R"), a hole was laboriously cut at the intersection using a razor blade.

The sheets were placed one by one on top of each other, positioned according to 12 females found in the messages. If, after 12 sheets had been stacked, light shone through all the sheets in one place, a possible key had been found. If not, a different sheet (or set) was selected, and another stacking performed. These settings were tried, one by one, on an Enigma replica.

The bomby

The methods discussed so far did not identify the actual key, only a number of possibilities, which had to be tried, one by one, on an Enigma replica until the operators' fingers were raw and bleeding. What was needed was a machine to accomplish this task.

The Enigma scrambler was single-ended; one set of terminals served both as input and output. What was needed was a device where certain input terminals could be energized, and as it went through all the possible positions, a second set of terminals monitored to detect a desired output. For example, if it was assumed that the first three letters of a coded message HJQ represented the plaintext anx, input terminals H, J, and Q are energized and output terminals a, n, and x monitored. The machine steps through all cycles until a match is found, and then stops.

Three sets of double-ended scramblers, one machine cycle apart, were driven by a motor. In our example, input terminals H, J, X were energized, and the machine stopped at any occurence of a, n, x. For each test run, 6 bomby were required, one for each of the 6 possible rotor positions.

The machines made a ticking noise as they worked, and stopped when they arrived a solution. The Poles called them *bomby* (plural, "bomba" singular), perhaps from the ticking of the clockwork in a bomb fuse which stopped just before it exploded. Another possibility is that the name came from an ice cream dish they were eating at the time.

With keys given them by the French, and using replica machines they had built, the Polish team of Marian Rejewski, Jerzy Rozycki and Henryk Zygalski were able to decode most German messages. They were particularly interested in radio traffic between German troops training in Russia, a ploy which allowed them to circumvent terms of the Versailles Treaty. However, they never related their results to the French, probably because they feared the Germans would find out that their codes had been compromised and institute new procedures which would nullify their success. The French, puzzled at receiving no intelligence, continued to pass on the keys nevertheless.

The Poles began their efforts when the Germans used only three rotors. Although the keys were out of date, they were able to apply them to a backlog of messages.

Successes, Failure and a Priceless Gift

Using these techniques the Polish cryptographers were, by 1938, reading some 75% of intercepted German Radio transmissions enciphered using the Enigma machine. They kept this a very closely guarded secret, telling no one of their successes.

However, just prior to the onset of the war, the Germans added another two rotors to the system, increasing the possible wheel orders from 6 to 60. The Poles were still able to read a small minority of messages, but they clearly needed to solve the new rotors. Time, however, was not on their side. Once the German invasion of Poland became imminent in 1939, the Polish government handed over all their research (including an Enigma machine) to the British in hopes that they would continue their work. Which they most certainly did, resulting in the full cracking of the Enigma code during the early stages of World War II.

And for which Britain has claimed virtually all of the credit.

But now, frustrated with what they see as a terrible injustice and oversight, the Polish government has put forth a motion in parliament to pass a resolution praising Rejewski, Zygalski, and Różycki for their contributions, while also designating them as official heroes of the state. The resolution reads, "In both popular literature and official information the public was told that the breaking of the Enigma codes was due to the work of the British intelligence services to the complete omission of the work of Polish scientists."

Approach of War

In 1939, facing German invasion, **Waclaw Stachiewicz**, Polish Chief-of-Staff authorized the Cipher Bureau to send their knowledge of the Enigma machine to the Allies.

"It was one of those great miracles of history that [the Poles] managed to smuggle an Enigma machine [that they had reconstructed] out to Britain just before they were invaded by the Nazis."

- Michael Apted, British film director and writer

Polish Contributions

From 1932 to 1939, the Poles made immense advances in cracking the Enigma code, laying the foundation for the Allies' later successes.

"The Poles were the first victors in the struggle against Enigma"

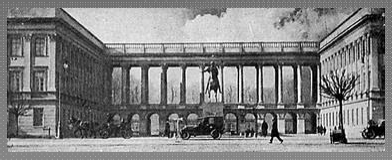
- Jean Stengers, Belgian historian

Polish Cipher Bureau

Excerpt from the BBC documentary "The Enigma Secret"

"Ultra [the British code-breaking mission] would never have gotten off the ground if we had not learned from the Poles" - Gordon Welchman, head of Bletchley Park Hut 6

The Poles began working in December, 1932.



Polish Cipher Bureau in Warsaw

M. Rejewski Monument in his Birthplace Bydgoszcz

Xinhua News Agency August 5, 2014

Polish mathematicians granted prestigious IEEE award for breaking codes of Enigma

WARSAW, Aug. 5 (Xinhua) -- P
mathematicians: Marian Rejew
Henryk Zygalski have been granted a prestigious
Milestone award by the international association of engineers **IEEE** on Tuesday.
They were awarded for breaking the codes of the German Enigma cipher machine.

mony at the Warsaw University of Technology, the president of the Institu
Electronics Engineers (IEEE), Professor Roberto de Marca emphasized that
h contributed to ending the Second World War and saving people's life.
g mathematicians were employed in 1930 in the Cipher Bureau of the Pol
cret operation of electromechanical German Enigma cipher machine.
o read the first information in 1932. In 1939 Polish military authorities
e along with the information about the broken code to France and G
historians due to the fact that the Allies knew the information sen
about two to three years less.
gest association of professional technicians, engineers and sc
g and electronics.
the academic achievements significantly changing the
mas Edison, Alexander Graham Bells and Nikola

Bletchley Park

HQ of British Government Code and Cypher School (GCCS)

It was the sharing of this understanding that the Britons would take back home. In turn this allowed Bletchley's own mathematical genius Alan Turing, who would meet with the Poles himself later, to develop his own "bombe" capable of breaking the more complex wartime Enigma codes. One new technique that made the bombe more powerful was the use of "cribs" - assumed or known parts of the message - as a starting point.

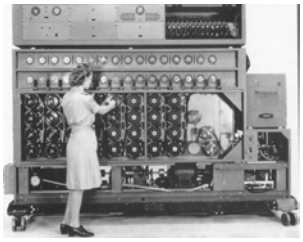
This work at Bletchley is reckoned by some estimates to have shortened the war by as much as two years and saved countless lives.

Alan Turing, Enigma Code-Breaker and Computer Pioneer

- British cryptanalyst Alan Turing utilized 'cribs', or common phrases that could be compared to encoded text, and advanced the Bombe machine, a electromechanical device that used brute force to guess the settings.

The British Bombe

In 1939 the only technology available for achieving electrical connections from rapidly changing drum positions was to use small wire brushes on the drums to make contact with fixed contacts on the Test Plate. This was a proven technology from punched card equipment. High speed relays were initially the only reliable devices for sensing the voltages on the interconnections. Thermionic valves were tried but were not reliable enough in 1939. Later, thyratron gas filled valves were used successfully and these were about 100 times faster than the high speed relays.



Since their involvement in the war in 1942, the Americans had been pushing the Brits to share their knowledge about the Bombe and allow them to copy its design. Finally, in late 1942, when the British 4-wheel Bombe was facing problems and the daily losses in the Battle of the Atlantic were accumulating, the Brits finally gave in and allowed the US to build its own Bombe.

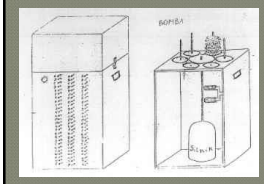
The US-Bombe was built by the National Cash Registers (NCR) in Dayton (USA), where it was developed by Joe Desch. Initially, the US Navy wanted him to build a fully electronic machine, but Desch found this to be impractible, as it would require the machine to have more than 70,000 electronic valves (tubes**).**

Bombes

US Navy Cryptologic Bombe
NSA National Cryptologic Museum

Turing-Welchman Bombe Rebuild
Bletchley Park

Poland – Britain – United States



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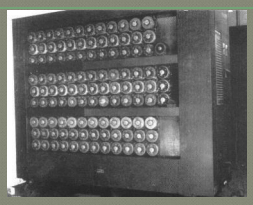

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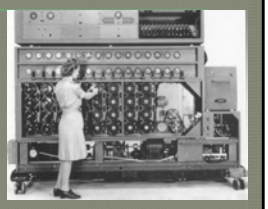

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Milestones: List of IEEE Milestones for Breaking ENIGMA

US Naval Computing Machine Laboratory, 1942-1945

Dayton, Ohio, Dedicated October 2001 -- IEEE Dayton Section

In 1942, the United States Navy joined with the National Cash Register Company to design and manufacture a series of code-breaking machines. This project was located at the U.S. Naval Computing Machine Laboratory in Building 26, near this site. The machines built here, including the American "Bombes", incorporated advanced electronics and significantly influenced the course of World War II.

Code-breaking at Bletchley Park during World War II, 1939-1945

Bletchley Park, United Kingdom, Dedicated 1 April 2003 -- IEEE United Kingdom/Republic of Ireland Section

On this site during the 1939-45 World War, 12,000 men and women broke the German Lorenz and Enigma ciphers, as well as Japanese and Italian codes and ciphers. They used innovative mathematical analysis and were assisted by two computing machines developed here by teams led by Alan Turing: the electro-mechanical Bombe developed with Gordon Welchman, and the electronic Colossus designed by Tommy Flowers. These achievements greatly shortened the war, thereby saving countless lives.

First Breaking of Enigma Code by the Team of Polish Cipher Bureau, 1932-1939

Warsaw, Poland, Dedicated 5 August 2014 -- IEEE Poland Section

Polish Cipher Bureau mathematicians Marian Rejewski, Jerzy Różycki and Henryk Zygalski broke the German Enigma cipher machine codes. Working with engineers from the AVA Radio Manufacturing Company, they built the 'bomba' – the first cryptanalytic machine to break Enigma codes. Their work was a foundation of British code breaking efforts which, with later American assistance, helped end World War II.

Encoding/Decoding Exercise with ENIGMA Emulator

https://people.physik.hu-berlin.de/~palloks/js/enigma/enigma-u_v20_en.html

http://enigmaco.de/enigma/enigma.swf

Universal Enigma - Simulator by dp.htm

HISTORY CHANNEL DOCUMENTARY: Link to You Tube

https://www.youtube.com/watch?v=dku-3huuqPA

Index of References:

https://www.youtube.com/watch?v=LU2s28-tN08#t=115

https://www.youtube.com/watch?v=dku-3huuqPA

Solving the Enigma: The Legacies of a Secret WWII Code ï Home

How did the Enigma machine work? | Technology | The Guardian

Cryptanalysis of the Enigma - Wikipedia, the free encyclopedia

Code Breaking | HISTORY

Enigma Settings: 11 Jan, 2015 6:57:30

http://enigmaco.de/enigma/enigma.swf

Polish Greatness (Blog): The Enigma Machine Part I Polish Code Breakers

Three Polish Cryptologists Decoded the German Enigma Machine ï

Polish breackdown

World engineers honor Polish Enigma code breakers | Daily Mail Online

http://www.ieeeghn.org/wiki/index.php/Milestones:First_Breaking_of_Enigma_Code_by_the_Team_of_Polish_Cipher_Bureau%2c_1932-1939

http://www.ellsbury.com/enigma1.htm

http://www.codesandciphers.org.uk/virtualbp/poles/poles.htm

Session:

Geography, Culture and Economy of Poland

Presentation and Activities created by:

Mark Scarbecz

University of Tennessee College of Dentistry

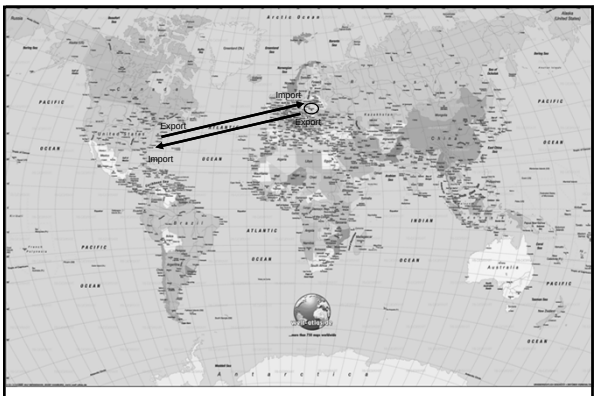
2015 POLAND
MEMPHIS IN MAY
INTERNATIONAL FESTIVAL

This presentation and all resources in this binder are available online at Memphisinmay.org/educationresources

Poland: Economy, Geography, Traditions

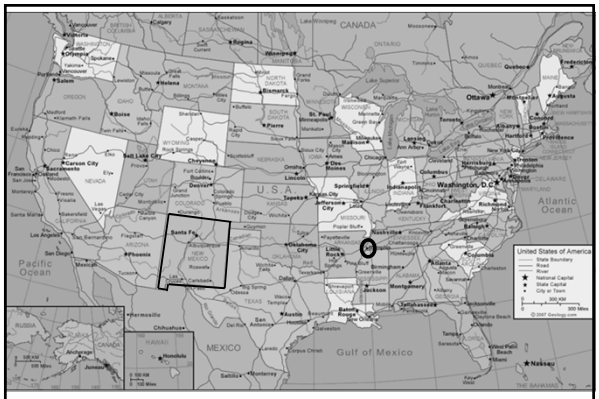
Mark Scarbecz, Ph.D.
Memphis in May, 2015

1



Memphis to Warsaw (Poland's capital): 5,121 miles (8,241 kilometers)

2



How big is Poland? About the size of New Mexico!

Basics of Poland Geography:

- Mostly flat plains
- Mountains to the South
- Several major rivers
- Capital: Warsaw

Polish weather:

- Cold in winter (-4 C/ 25 F)
- Cool in summer (18 C/64 F)
- Not much snow

http://www.worldatlas.com/webimage/countrys/europe/lgcolor/plcolor.gif

4

Polish Money: Złoty

"zwoty"

=

U.S = $2.49

Poland = 10 złoty

5

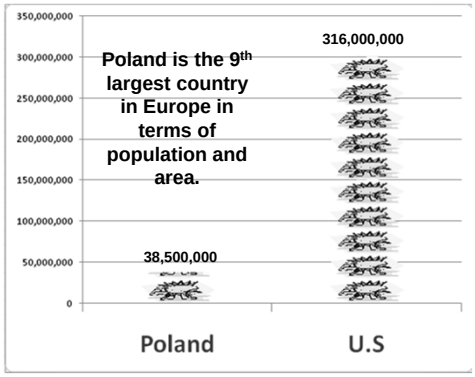
Sometimes with the eagle, sometimes not

Legend has it that 3 brothers, Lech, Czech and Rus were walking through the woods and stopped for a rest. Lech looked up at a tree and saw a beautiful white eagle. So, he decided to make his home there.

The Polish Flag: Red & White (National Colors)

6

How many people in Poland and the U.S.?



7

Major U.S. Companies in Memphis & Poland!

Medtronic
Medical Devices

Based in Memphis
INTERNATIONAL PAPER

CATERPILLAR
Heavy Equipment (like tractors)

Electrolux
(Household appliances)

FedEx
Based in Memphis

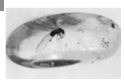
8

Top Polish Exports to the U.S.:

- Machines and engines
- Electronic equipment
- Aircraft
- Furniture
- Medical equipment
- Ships, boats
- Vehicles
- Iron & Steel Products

What would I see in a store?

Amber jewelry



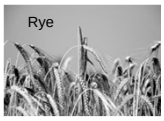
9

Poland's agricultural exports (mostly to Europe)

- Wheat
- Rye (2nd in the world)
- Potatoes
- Sugar beets
- Pigs and cattle
- Apples (leader in Europe)
- Berries
- Onions, cabbage, cauliflower

Sugar beets

Rye



Used for bread, beer

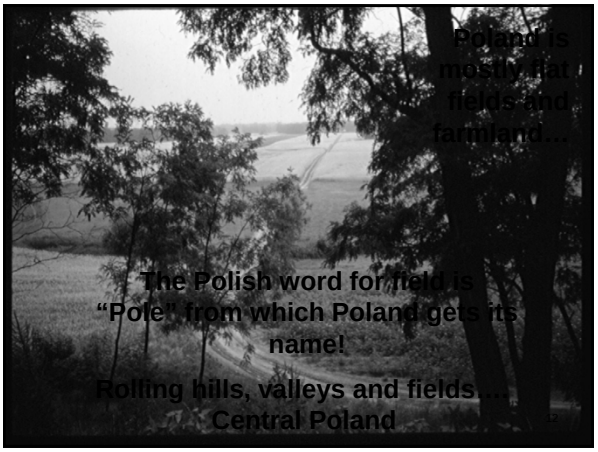
10

http://www.tokio.msz.gov.pl/en/bilateral_cooperation/economy/polish_agriculture/

Why visit Poland?

- **Poland has lots of interesting history and stories**
- **Has lots of great castles and old towns to visit**
- **People in Poland are very friendly!**
- **And…Poland has something for everyone:**

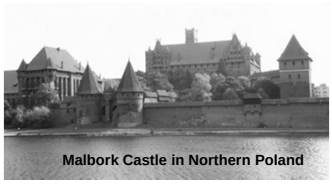
11



Little villages....

Kazimierz Dolny, Southeast Poland
(artist colony & tourist destination)

15



Malbork Castle in Northern Poland

Wawel Castle in Kraków, Poland
- The seat of many Polish Kings
- Polish capital until 1596

Real castles….

16

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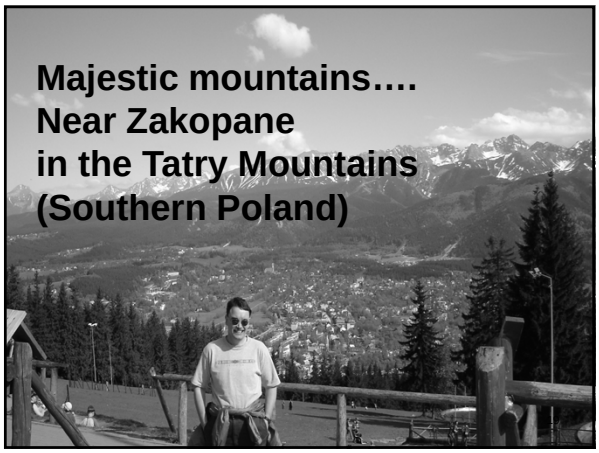
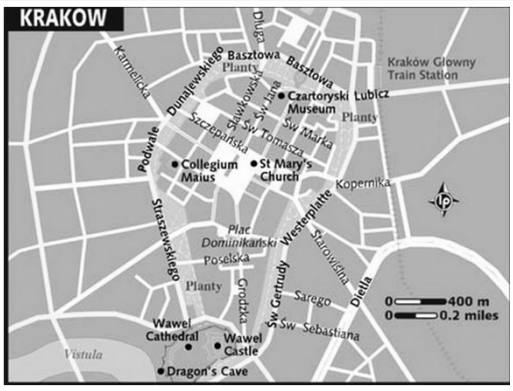


Kraków

- 2nd Polish capital (1320-1596)
- First Polish capital was Gniezno (northern Poland)
- Home to one of the oldest universities in Europe
- Jagiellonian U. (1364)
- Population: 755,546
- Similar in size to Columbus, OH
- A little bigger than Memphis (680,515)

21



Kraków's Historic Center

23

Wawel Castle in Kraków, Poland

- **The seat of many Polish Kings**
- **Polish capital until 1596**

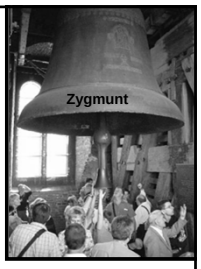
Musicians in Traditional Polish dress on the way to Wawel

The Dragon outside of Wawel. He is the dragon defeated by "Skuba" at the behest of King Krakus & became a prince (p.21 in curriculum guide)

Typical interior of Wawel Castle

25

Wawel Cathedral, resting place of many Polish Kings



26

The interior of Wawel cathedral. Many Polish kings and royalty are buried here or in the catacombs beneath, including Polish heros such as General Józef Piłsudski, the Polish poet, Adam Mickiewicz, and Tadeusz Kościuszko, who fought for Polish independence and American independence during the Revolutionary War.

27

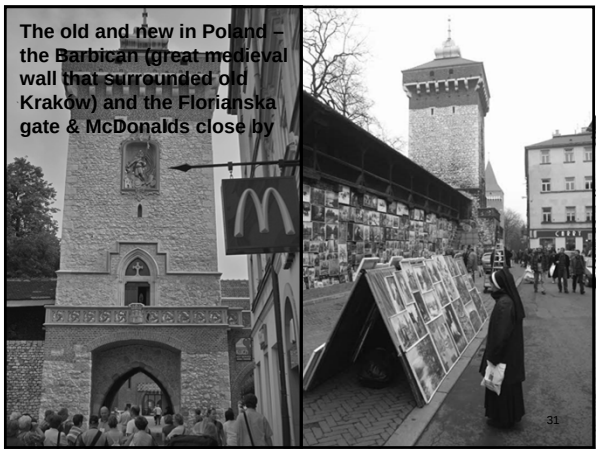
28

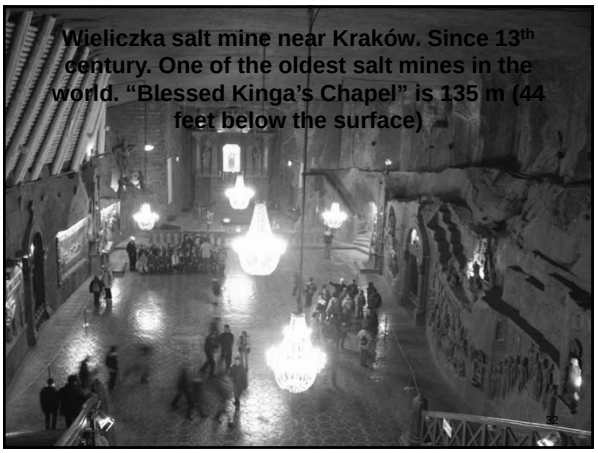
You might see an artisan making local crafts in the Kraków main square

St. Mary's interior

Beautiful St. Mary's Church in the Rynek Główny.
A trumpeter still plays the hejnał ("Hey-now") every hour on the hour and Polish radio plays it at noon!

30

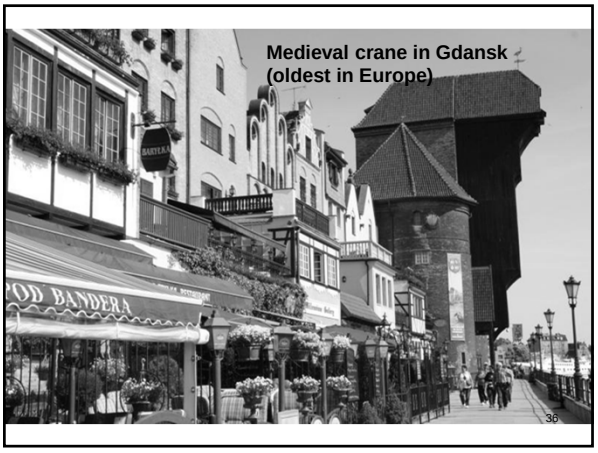




Gdańsk

- 6th largest Polish city
- Population: 458,000
- About the size of Atlanta, GA
- Famous port city (trade going back centuries, especially amber)
- Shipbuilding

33



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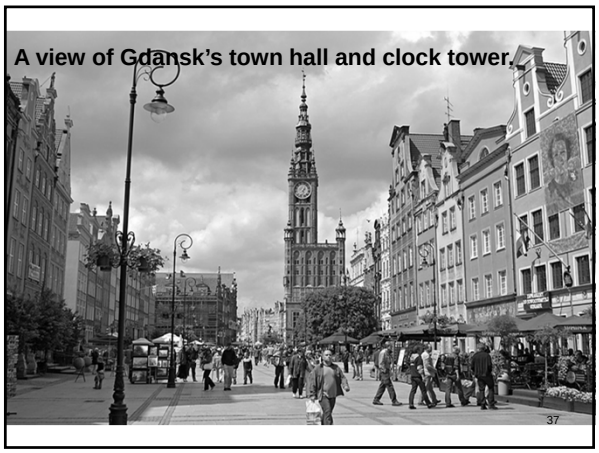
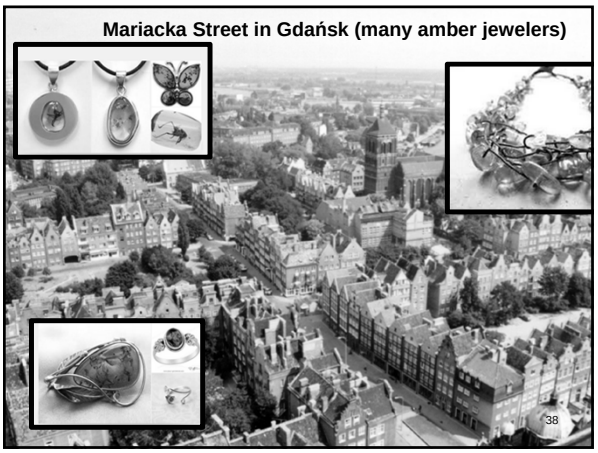


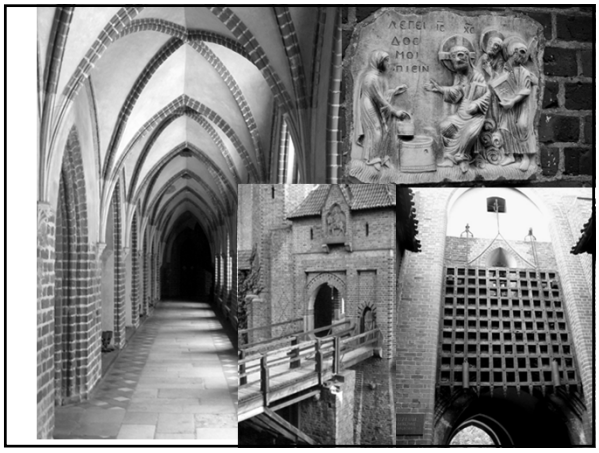


Malbork

39

Malbork castle (Marianburg or "Fortress of Mary," begun in 1270
Home of the Tuetonic knights who controlled Baltic Trade (especially in Amber)
Situated along the Vistula (Wisła) River
Driven out of Poland in 1471

40



Warsaw

- Current Polish capital (Biggest city)
- Population: 1.7 million
- About the same as Philadelphia, PA

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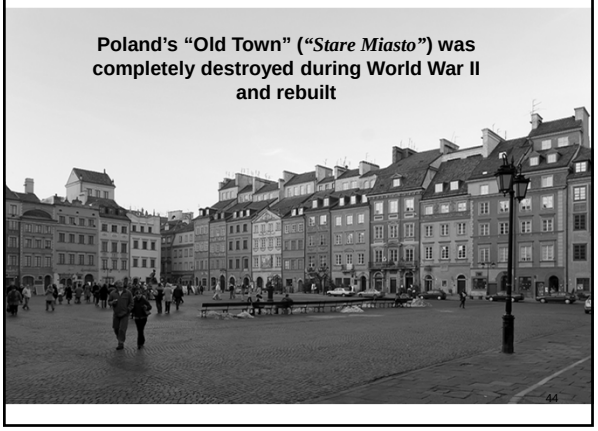
Warsaw's coat of arms and a symbol of the city

43

Poland's "Old Town" (*"Stare Miasto"*) was completely destroyed during World War II and rebuilt



44

Zamek Królewski (King's castle) is right outside the Stare Miasto in Warsaw

The King Zygmunt III column took a direct tank hit during WWII.

45

"Zamek" is castle in Polish

One of the biggest McDonald's in Poland is across the street from a famous (but not well loved Warsaw landmark): Palace of Culture

Most people in Poland's major cities get around on electrically driven trams (streetcars), such as this one in Warsaw

Wilanow Palace

More Royal Palaces!

Lazienki Park

Belvedere Presidential Palace Poland's "White House"

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Polish composer Frederyk Chopin in Łazienki Park.

49

Łódź

- Łódź is Poland's 3rd largest city
- Population: 718,000
- A little bigger than Memphis
- Major manufacturing Center (textiles)
- Pronounced: "Wooj"
- Contains only 1 English Letter!

Łódź *is famous for*:

- Textile manufacturing (especially in the 19th C)
- Łódź Film School (the "Hollywood" of Poland)
- Piotrkowska Street (one of the longest commercial streets in Europe)
- Great architecture

Łódź coat of arms
"Łódź" is boat in Polish

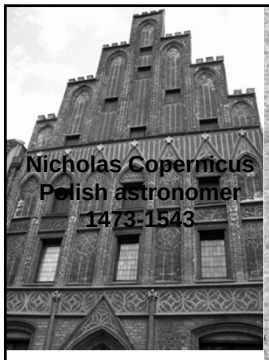
Piotrkowska Street

Poznanski Palace (Home of 19th C industrialist)

51

Toruń

52



Nicholas Copernicus Polish astronomer 1473-1543

House and statue of Toruń's most famous resident!

Zakopane

54

Zakopane in the Tatry mountains in Southern Poland is a famous resort town known for hiking, skiing and other winter sports

55

Polish highlands (such as the area around Zakopane) are famous for their wooden churches

56

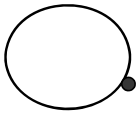
Interior of a wooden church near Zakopane

57

Górale (Polish highlanders) play traditional Gorale music in traditional dress in a Zakopane restaurant

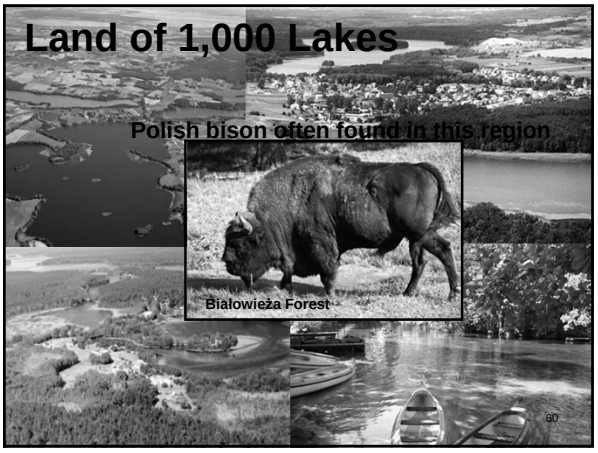
58

Mazurian Lakes

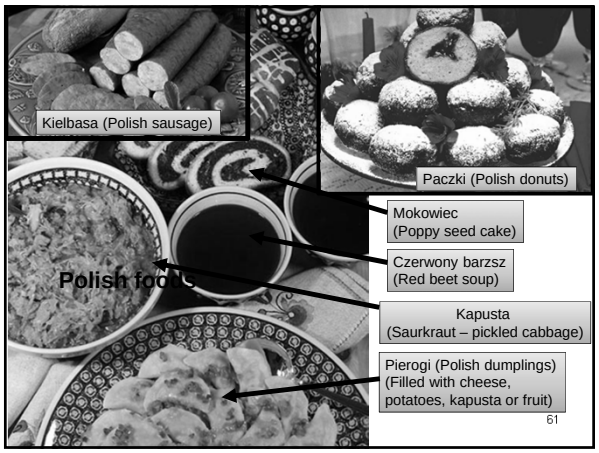


Białowieża National Park

59

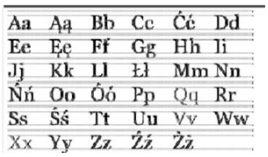


60



61

What do kids like to do in Poland?



Their A,B,C's are a little different (30 letters in the Polish alphabet)

62

Wigilia (Christmas Eve)

Wesołych Świąt ***(Veh-So-Weh Sh-fiant)***

opłatki ***(oh-pwat-kee)***

63

Easter in Poland.... Polish Easter Eggs (Pisanki)

64

Zapraszamy!!! (We invite you!!)

65

Polish Words and Phrases

- **Dzień Dobry: Good Day!** ***("Jen dough-brih")***
- **Proszę: Please** ***("Pro-sheh")***
- **Cześć: Hello or Goodbye** ***("Cheshch")***
- **Dziękuję: Good Day!** ***("Jen-koo-yeh")***
- **Dowidzenia: Good Bye!** ***("Dough-veed-zen-yah")***
- **Sto Lat!: (Happy Birthday)** ***Literally: "100 years"***
- **Kolega or koleżanka: Friend**
- **Lody: Ice Cream**
- **Frytki: French Fries** ***("Frit-key")***
- **Pizza & Hamburger: Pizza and Hamburger!**

66

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How to create a Polish history Bingo game for your class

1. Go to ñSample Bingo cardsò section below or online at memphisinmay.org/educationresources .
   Decide whether you will play with the 3x3 cards or the 4x4 cards. You can also use this generator (http://print-bingo.com/bingo-cards-custom.php) to make your own Bingo cards using the provided questions.
2. Use the ñPoland Bingo Questions & Answersò on the next pages or online at memphisinmay.org/educationresources for the Bingo questions.
3. Ask different questions while students mark the answers on their Bingo cards.
4. Have fun!

Sample Polish Bingo Card

Trams	Dzeuikuje	Malbork	Belvedere	Lody
Warsaw	Red	Mermaid	Zloty	Copernicus
Pole	Wawel Cathedral	*Free Space!*	Pole	Makowiec
Zygmunt	Pierogi	Krakow	Germany	Oplatki
Lodz	Chopin	Kielbasa	Prosze	New Mexico

Sample Questions and Answers for Polish Bingo

Question	Answer
First capital of Poland	Gniezno
Second capital of Poland	Krakow
Current capital of Poland	Warsaw
Symbol of the city of Lodz	Boat
Symbol of the city of Warsaw	Mermaid
Leading Polish fruit export to Europe	Apples
Memphis based company in Poland	FedEx
Polish money	Zloty
Name of castle in Krakow	Wawel
Polish population	38 million
Castle of Tuetonic kinghts	Malbork
How many football fields is the size of the Rynek Glowny in Krakow	8
Poland is about the size of which state	New Mexico
City on Poland's coast	Gdansk
What jewelry can you buy in Gdansk?	Amber
Name of mountains in southern Poland	Tatry
Name of major Polish river	Vistula
Poland's northern boder is on what sea?	Baltic
City with only one English letter in its name	Lodz
Miles between Memphis and Warsaw	5,121
What is it called when a country sends goods to another country?	Exports
What is it called when a country buys goods from another country?	Imports
Bottom color on the Polish flag	Red
Top color on the Polish flag	White
National symbol of Poland	White eagle
Something you can buy from Poland in a store	Glassware
Something you can buy from Poland in a store	Dishes

A vegetable grown in Poland	Sugar beets
A vegetable grown in Poland	Cabbage
A vegetable grown in Poland	Potato
Grain grown in Poland	Rye
Grain grown in Poland	Wheat
Animal found in Polish forests	Bison
Statue of what mythical animal near Wawel	Dragon
Name of the bell in Wawel Cathedral	Zygmunt
Buried under Wawel Cathedral (fought in U.S. Revolutionary War)	Kosciuszko
Poet with statue in Krakow Rynek Glowny	Mickiewicz
Church in Krakow Rynek Glowny	St. Mary's
Trumpet song played daily from top of churcn in Krakow	Hejnal
Old wall around the old city in Krakow	Barbikan
What product was mined in Wieliczka	Salt
Major industry in Gdansk	Shipbuilding
Home of a famous astronomer	Torun
Famous Polish astronomer	Copernicus
Famous Polish composer with statue in Warsaw	Chopin
City of Lodz know for manufacturing what?	Textiles
The Hollywood of Poland	Lodz
Land of 1,000 lakes	Mazurian
Polish poppy seed cake	Makowiec
Polish donuts	Paczki
Polish Easter Eggs	Pisanki
Outdoor game played by Polish children	Soccer
Polish word for Ice cream	Lody
Wafer shared by Polish people on Christmas Eve	Oplatki
Polish Christmas Eve	Wigilia
Thank you in Polish	Dzeikuje

Polish beet soup	Barzsz
Polish dumping	Pierogi
Polish sausage	kielbasa
Polish name for french fries	Frytki
Polish name for pizza	pizza
Polish word to invite people	Zapraszamy
What are churches made of in Zakopane?	Wood
What king is on the column in Warsaw's town square	Zygmunt
Famous park in Warsaw	Lazienki
Knights who lived in Malbork castle	Teutonic
Fortress of Mary	Malbork
What is at the bottom of Wieliczka mine	Chapel
What restaurant can you see near the old city walls in Krakow	McDonalds
Memphis based company in Poland	International Paper
Animal sometimes found on Polish flag	Eagle
Major Polish export to U.S.	Machines
Major university in Krakow	Jagiellonian
Major heavy industry in Krakow was	Steel
Place where Polish kings were laid to rest	Wawel Cathedral
Another name for the cloth hall in Krakow	Sukiennice
Poland's major port city	Gdansk
Major public transportation in Polish cities	Trams
Name of Warsaw's old town square	Stare Miasto
Warsaw's town square was destroyed in what war?	WWII
Year Copernicus was born	1473
Palace in Warsaw	Belvedere
Palace in Warsaw	Wilanow
Please in Polish	Prosze
Old medieval town in S.E. Poland	Zamosc

Park surrounding Old Town in Krakow	Planty
4 of these is equal to one dollar	Zloty
Polish resort in mountains of Southern Poland	Zakopane
Number of letters in the Polish alpabet	30
Polish word for "field"	Pole
You might find an artist in Krakow making this?	Wood carving
Polish word for saurkraut (pickled cabbage)	kapusta
What was traded in the cloth hall in Krakow	Salt
What restaurant is across the street from the Palace of Culture in Warsaw?	McDonalds
Poland's White House	Belvedere
Sto Lat means:	100 years
What do you say to wish someone Happy Birthday in Polish?	100 years
A name for people who live in the highlands (mountains) of Poland	Gorale
Country west of Poland	Germany
Country south of Poland	Czech Republic
Poland's population rank in Europe	9

Session:

History and National Heritage of Poland

Presentation and Activities created by:

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This presentation and all resources in this binder are available online at Memphisinmay.org/educationresources

HISTORY AND NATIONAL HERITAGE OF POLAND

INTERNATIONAL TEACHERS' CONFERENCE ABOUT POLAND

February 7th, 2015

Basic Reference - 2015 Education Curriculum Guide

Abbreviated History of Poland

INTRO

A written history of Poland usually begins with the reign of Mieszko I and his acceptance of Christianity, both for himself and his kingdom, in 966 AD. Soon afterwards, Poland began acquiring extraordinary power under the reign of the famous Bolesław Chrobry, the eldest son of the first Polish ruler. He reigned from 992 until 1025 AD, and his kingdom expanded to include all of the lands from the Baltic to the country beyond the Carpathians, and from the River Oder to the provinces beyond the Vistula. Serving under him, and ready for instant service, was an army of 20,000 soldiers. Despite his great power, Bolesław continued to pay the customary tribute to Germany. Through diplomacy he obtained consent from both, the pope and the German emperor to relieve the Polish Church from its dependence upon the German Archbishop, and an archiepiscopal see was established at Gniezno. To emphasize Poland's independence from Germany, Bolesław assumed the title of king, being crowned by the newly created archbishop of Gniezno in 1024.

After the death of Bolesław Chrobry, disaster befell his Polish kingdom. Neighbors attacked from all sides. Bolesław's son, Mieczysław II (who ruled from 1025 until 1034), was unable to contain his enemies, and he yielded allegiance to the emperor and lost the title of king. A period after his death was marked by a series of violent revolutions. Mobs of rebellious peasants traversed the entire country, furiously attacking castles, churches, and convents. The peasant murdered many noblemen and church leaders, and paganism was re-established in some areas. Casimir the Restorer, one of the sons of Mieczysław II, recovered the reins of government. With the assistance of King Henry VIII of England, he restored law and order, and rooted out idolatry. At his death the sovereignty passed to his son, Bolesław II, Smiały (1058-79). He proved to be a successful warrior, and his successes on the battlefield led him to challenge the leadership of the emperor. Conditions at the time were favorable for him to secure political independence. The Emperor Henry IV was engaged in a struggle for supremacy with Pope Gregory VII, who allied himself with the vassal princes hostile to the emperor, among them Bolesław Smiały, to whom he sent the kingly crown. Poland revolted from Henry IV's Empire, and the Polish Church began a reform in accordance with Gregory's decrees. By the leading nobles, Bolesław was thoroughly hated as a dictator. The masses of the Polish people murmured under the burden of constant wars, and the clergy of the church opposed the refinement of the Church which the king was leading. The clergy members were particularly opposed to Gregory's decree enforcing the celibacy of the clergy. The dissatisfaction among many Polish people and the clergy led to civil war. Eventually, King Bolesław was forced to take refuge in Hungary. After his death, Poland struggled to maintain its independence.

Towards the end of the eleventh century, Poland's power was broken by the Bohemians and Germans, and it was once more reduced to the condition of an insignificant principality under the incompetent Władysław Hermann (1081-1101). During this period, the clergy were considered the only educated class in the entire population. The convents at the time served as centers of learning for the Polish people.

(continued next page)

Brief Timeline of Polish History

Around 400 BC Poland was being settled by Celtic arrivals, followed by Germanic cultures; influenced first by the Celts and then by the Roman Empire. The Slavic people have been in this territory for over 1500 years.

1st Polish Prince, Mieszko I, introduces Christianity — 966

Holy Roman Emperor visits Gniezno, 1st Polish capital. Ruled by Bolesław I — 1000

Academy of Krakow founded by Casimir the Great — 1364

Poland and Lithuania united by marriage — 1386

Battle of Grunwald against Teutonic Knights — 1410

1st Polish Parliament convened. King governs at consent of governed — 1493

Pages 7-12

List of Famous Poles

INTRO

Frederic Chopin

Magdalena Abakanowicz (born 1930) - Sculptor, professor at the College of Fine Arts in Poznan, lecturer at the University of California. Her career started with "Abakans", three-dimensional tapestries with unusual textures. She also creates free-standing sculptures for open spaces, for example "Dragon's spaces" in Seoul's Olympic Park.

Frederic Chopin (1810-1849) - Pianist and the greatest Polish composer. Born in Zelazowa Wola near Warsaw. Spent most of his life abroad, amongst other places, in France. He wrote his works especially for the piano, including concerts, sonatas, etudes, preludes, polonaises, mazurkas and waltzes. His works had an enormous influence on the music of the end of the 19th and early 20th centuries.

Nicolaus Copernicus

Nicolaus Copernicus (1473-1543) - Renowned astronomer. He studied in Torun, Cracow and then in Bologna, Padova and Ferrara, where he earned a doctorate in canonical law. As the first in modern times he developed a heliocentric theory of the Solar System. He published his discoveries in the year of his death in the work "On the Revolutions of the Celestial Spheres."

Marie Sklodowska-Curie (1867-1934) - Polish physicist and chemist who lived and worked in France. She was the first female professor at the Sorbonne. Together with her husband Pierre Curie she discovered polonium and radium in 1898. She was twice awarded the Nobel Prize - in 1903 in physics with her husband for research in the area of natural radiation, and in 1911 in chemistry for extracting pure radium.

Marcin Gortat

Marcin Gortat (born February 17, 1984) - Polish-born professional basketball player with the Washington Wizards of the National Basketball Association (NBA). The 6 ft 11 in, 240-pound center is the son of Olympic Polish boxer Janusz Gortat. He was a second-round draft choice of the Phoenix Suns in the 2005 NBA draft and was traded for future cash considerations to the Orlando Magic. In 2010, he was traded back to Phoenix until his 2013 trade to Washington.

Agnieszka Holland (born 1948) - Film, theatre and television director. She was nominated for an Oscar for "Bitter Harvest" (1985). Her best

(continued)

Sebastian Saraberski

Activity Involving Famous Poles

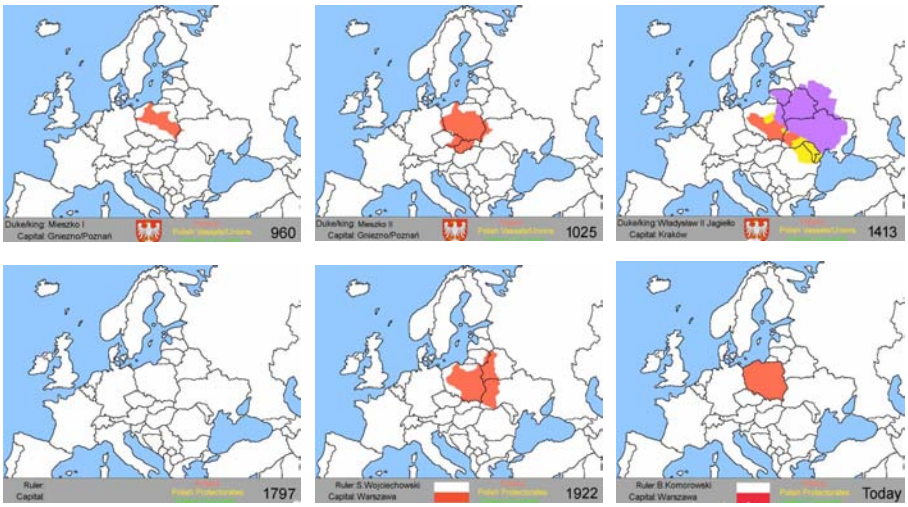
These pages showcase just a few of the many famous Poles who have made cultural, athletic, artistic, commercial or political impact, not only in Poland, but throughout the world. There's also author Henryk Sienkiewicz, novelist Joseph Conrad (Josef Korzeniowski), pianist Ignacy Paderewski, U.S. presidential advisor Zbigniew Brzezinski, and hundreds of others. Expand on this list by involving students in a classroom activity which focuses on famous Poles. For this activity have each student choose one of the famous Poles listed on these next pages, or one of the dozens of other famous and influential Poles listed on the internet (such as http://en.wikipedia.org/wiki/List_of_Polish_people). Students can research their chosen Pole and prepare an oral presentation for your classroom, or they can work in small groups. Students in higher grades could write a research paper with citations, could write a hypothetical interview with their famous Pole, or could even create a Power Point presentation or other oral presentation.

Pages 13-15

Brief Timeline of Polish History

Abbreviated History
www.youtube.com/watch?v=aJ0zdiWsWjc&app=desktop

Borders of Poland throughout the ages
www.youtube.com/watch?v=OZJpz6iaSK0



3

Old Slavic Tribes in Central Europe

"Legend of Lech, Czech and Rus" – School Play
www.youtube.com/watch?v=Sz9uqh34PBA

K-2

The Legend of Three Brothers

A legend is a story from the past, passed on orally from generation to generation, usually meant to teach a moral lesson. Over the years legends change, often exaggerated upon by each story teller. This is a famous Polish legend about the three brothers who founded the Slavic nations of Poland, Czech and Russia. At the conclusion of this legend, there are some questions to pose to your students.

Over one thousand years ago, there lived a king who ruled over the lands that lay near the mouth of the Vistula River. When the king died, his wealth was left to his three sons, Lech, Czech and Rus. * Their father's kingdom was not large enough to be divided between the three brothers, so they decided to set out in search of other lands.

Lech was the oldest and became the new chief. His brothers were jealous and the three often quarreled over which of them would make the best leader. After months of weary travel, the three brothers came upon a hill in a land of green meadows. At the top of the hills stood a giant oak tree, and above the tree flew a great white eagle.

"That eagle is a good sign from the Gods!" Lech told his brothers. "I'm going to climb this tree and have a look around." As Lech climbed up the tree he saw the eagle's nest high in the branches. The eagle flew near him and would not let him come close to the nest. But he had climbed high enough to see for miles in every direction.

To the north Lech saw a large body of water. To the east he saw an endless plain of flat and fertile land and to the south were hills where sheep and cattle could graze. To the west was a thick, dark forest.

Lech came down and told his brothers what he had seen. Czech wanted to go south and Rus argued that east would be better. The brothers decided to separate. Some people agreed with Czech and went with him; others agreed with Rus went with him. Most of the people remained with Lech and asked him where he planned to go.

"We will stay right here!" Lech told them. Thus, Lech became the first Duke of Poland and he assumed leadership of the Western Slays. So, the people began to build a town there on the hill, and Lech chose the white eagle with its wings spread wide as their emblem. They called their town Gniezno, which meant "a nest" in the old Polish language. The town became the capital of their nation. At same time, their country became known as Poland.

SPI
Common Core
RL.K-2.1
RL.K-2.2
RL.K-2.3
SL.K-2.2
English K-2 spi.1.02
English K-2 spi.1.07

Comprehension & Discussion

1. What are the names of the brothers? Who is the leader?
2. Why did they have to look for other lands?
3. Why did Lech stop by the hill?
4. Where did Lech decide to stop with his people?
5. What did Lech see from the eagle's nest?
6. Why did he choose the white eagle as their emblem?

Additional Activities

1. Have student retell the story with a different ending.
2. Give each student a large sheet of white paper and have them create an illustration for the story.
3. Use a world map or European map to show students the three countries mentioned in the legend. Is Gniezno still the capital city of Poland? If not, what city is the capital?

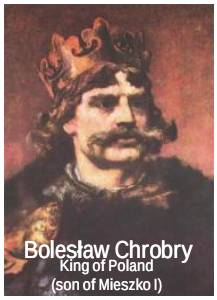
Gniezno cathedral was a royal coronation site for the first kings of Poland.

* Pronounced Lech, Chek and Roos. Special thanks to "Info Poland" at University of Buffalo, NY.

Memphis in May International Festival

4

First Documented Rulers of Poland – *Curriculum, Page 7*



Jan Matejko (1838 – 1893) painted portraits of Polish Rulers

5

Jan Matejko – One of the Most Famous Polish Painters

www.google.com/webhp?sourceid=navclient&ie=UTF-8&gws_rd=ssl#q=jan+matejko

Jan Matejko

Painter

Jan Alojzy Matejko was a Polish painter known for paintings of notable historical Polish political and military events. Wikipedia

Born: June 24, 1838, Kraków, Poland

Died: November 1, 1893, Kraków, Poland

Spouse: Teodora Matejko

Children: Helena Unierzyska, Tadeusz Matejko, Beata Matejko, Jerzy Matejko, Regina Matejko

Parents: Franciszek Ksawery Matejko, Joanna Karolina Rosberg

Artwork View 5+ more

6

The Battle of Grunwald of 1410 by *Jan Matejko*

***Dimensions*: 14 ft × 32.4 ft, *location:* National Museum, Warsaw, Poland**

Battle of Grundwald - http://en.wikipedia.org/wiki/Battle_of_Grunwald

7

King Casmir the Great (1310-1370)
Founder of One of the Oldest Universities in Europe

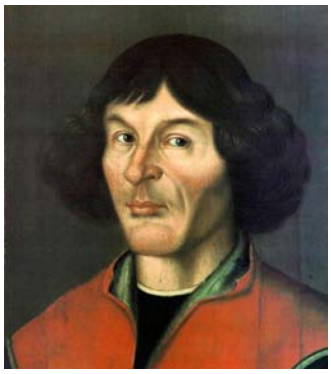
Jagiellonian University is 651 years old

http://en.wikipedia.org/wiki/Jagiellonian_University

Casimir the Great – Curriculum, Page 8

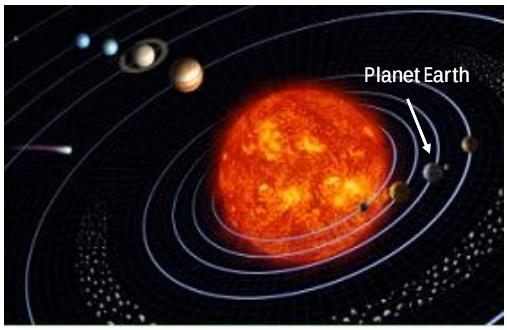
8

Polish Astronomer Nicolaus Copernicus



Nicolaus Copernicus (1473-1543) studied at the Jagiellonian University

Curriculum, Page 13



Stopped the Sun to Move the Earth

http://www.vision.org/visionmedia/biography-nicolaus-copernicus/563.aspx

What would happen if the Earth stopped spinning?

9

The Warsaw Confederation for Religious Freedom (1573)

http://en.wikipedia.org/wiki/Warsaw_Confederation

- **Formal beginning of religious freedom in the Polish-Lithuanian Commonwealth and the first such document in Europe.**
- **It made the Commonwealth a much safer and more tolerant place than any other country of contemporaneous Europe.**

10

First Polish Settlers in North America – 1608

http://en.wikipedia.org/wiki/Jamestown_Polish_craftsmen

- **The first Polish immigrants came with other nationals to Jamestown (Virginia) in 1608, twelve years before the Pilgrims.**
- **They were skilled artisans: glass blowers, pitch and tar makers, soap makers and timbermen.**

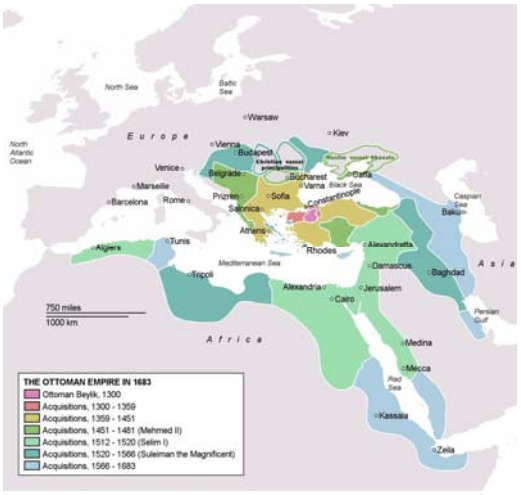
What were the nationalities of the settlers in 1607-8 and of the pilgrims in 1620?

Was 9/11 a Ranomly Chosen Date by Al-Qaeda?

http://www.islam-watch.org/Stunich/Why-9.11-Occurred-on-September-11.htm

On September 11, 1683 the Ottoman Empire was stopped by the European Army led by Polish King Jan Sobieski

http://en.wikipedia.org/wiki/Ottoman_Empire



Polish Hussars

http://en.wikipedia.org/wiki/Polish_hussars

Painting by Wojciech Kossak

What were the wings for?

12

King Jan Sobieski (1629-1696)
Led United European Army in a Defeat against Ottoman Empire
Curriculum Guide, Page 8

September 11, 1683 – Victory After the Battle of Vienna of (by Jan Matejko) 13

Polish Generals in the Independance War
http://www.islam-watch.org/Stunich/Why-9.11-Occurred-on-September-11.htm

The Man Who Saved Washington

6-8

Kazimierz Pulaski was born on March 7, 1745, at a time when the Polish Kingdom was experiencing increasing encroachment on its sovereignty by the surrounding autocratic imperial powers, particularly Russia. The latter, under the pretence of guaranteeing the "golden" freedoms of the Polish gentry, stationed large military forces in Poland, while Poland's Royal Army was limited, by treaty, to a paltry 12,000 men.

When Pulaski was 19 years old, he witnessed how Catherine the Great, the Russian Tsarina, ensured the election to the Polish throne of Stanislaw August Poniatowski, a man who had been her passionate lover. The election was held in the fields on Warsaw's outskirts. There, some 13,000 delegates, including Pulaski's father, gathered for the election. To ensure the desired outcome of the election, 60,000 Russian troops surrounded the election fields. Even though, to observe the proprieties of the occasion, they had withdrawn to a distance of 3 miles, it was enough to make the blood of many Poles boil. The worst was to follow. Though the newly elected King proved less pliant than Catherine had hoped, any reforms he tried to bring about to render Poland's situation less helpless, were blocked by the Russians, who felt free to arrest and deport to Siberia any Polish parliamentarians who dared to criticize them.

Kazimierz Pulaski

This state of affairs appalled many patriotic Poles. Led by Jozef Pulaski, Kazimierz's father, they met in the town of Bar and formed an armed Confederation whose aim was to liberate the country of the Russian presence. Kazimierz became one of the Confederation's chief military leaders, crisscrossing Poland, leading Confederate armies into battle after battle, often against superior Russian forces, showing great strategic inventiveness and personal bravery. In the four years of the Confederacy, he was involved in over 30 battles against the Russians. Among the most memorable was his brilliant defense of the Czestochowa monastery against a Russian siege. He held the fortress for two years thereby evoking memories of the almost legendary events of 1655 when the successful

Pulaski wounded at the battle of Savannah, from the Polish museum in Chicago.

52 Memphis in May International Festival

Tadeusz Kosciuszko (1746 - 1817) - Military leader who became a national hero in Poland, Belarus, and the U.S. He fought in the Polish–Lithuanian Commonwealth's struggles against Russia and Prussia, and on the American side in the American Revolutionary War. In 1796 he emigrated to the United States. A close friend of Thomas Jefferson, with whom he shared ideals of human rights, Kosciuszko wrote a will in 1798 dedicating his American assets to the education and freedom of U.S. slaves.

14 Memphis in May International Festival

General Tadeusz Kościuszko

Between 1778 and 1780, Tadeusz Kościuszko designed and oversaw the construction of West Point defenses. It is now the oldest continuously-operating Army post in the U.S.

Who was Tadeusz Kościuszko?

14

World Second Oldest Constitution - 1791

http://en.wikipedia.org/wiki/Constitution_of_May_3,_1791

Declaration of the May 3rd Constitution (by Jan Matejko)

15

The Oldest Constitutions in the History of Mankind

The Constitution of the United States of America adopted on September 17, 1787 is the oldest constitution.

The Constitution of the Republic of Poland adopted on May 3, 1791 is the second oldest constitution after the US Consitution.

16

The Three Partitions of Poland

For 123 Years Poland was erased from the map of Europe

17

Polish Music, Literature, Art, Science, Traditions and Language Lived on...

Who were these people?

Frederic Chopin (1810-1849)

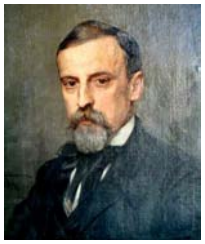
„If violets and lilies instead of smelling were able to play they would play Chipin's music" (Leopold Staff)

Joseph Conrad (1857-1924) (born Józef Korzeniowski)

Wojciech Kossak (1855-1942) (also Juliusz and Jerzy Kossaks)

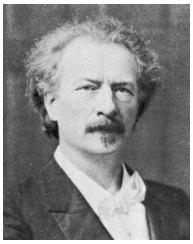
Maria Skłodowska-Curie (1867-1934)

Henryk Wieniawski (1830-1880)



Henryk Sienkiewicz (1846-1916)

Władysław Reymont (1867-1925)

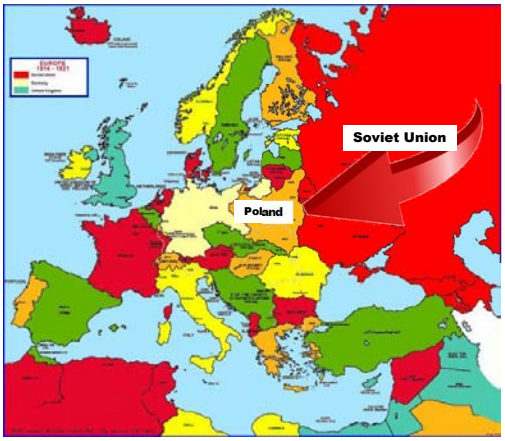


Ignacy Paderewski (1860-1941)

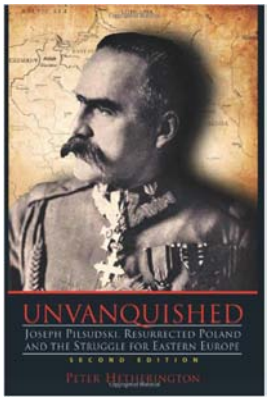
18

Independent Poland 1918 – 1939

What Were These Dates in the World History?



Who is this man?



- President Woodrow Wilson was a strong advocate for independent Poland
- Poland regained independence after 123 years
- In 1920-21 Poland stopped Red Army from spreading communism to Central and Western Europe

http://en.wikipedia.org/wiki/Polish%E2%80%93Soviet_War_in_1920

19

WWII: Beginning – 4th Partition and End – Jalta Conference,

Curriculum, Pages 9-10 and 60-62

1939

Partition of Poland Between Nazi Germany and Communist Soviet Union

Most infamous men in the 20th century

Jalta Conference, 1945

Division of Europe into Free West and Communist East

Who were the decision makers?

20

Nazi Concentration Camps on Polish Land

Nazi (NOT ~~POLISH~~) Concentration Camps

The anniversary of the liberation of the Auschwitz camp prisoners was observed recently

How many years passed since then?

Incredible story of Witold Pilecki
Who was he?

http://en.wikipedia.org/wiki/Witold_Pilecki

21

Rightous Among the Nations

http://en.wikipedia.org/wiki/Rescue_of_Jews_by_Poles_during_the_Holocaust

- Polish Jews were the primary victims of the German Nazi-organized Holocaust.
- Throughout the German occupation of Poland, many Poles risked their own lives – and the lives of their families – to rescue Jews from the Nazis.
- Grouped by nationality, Poles represent the biggest number of people who rescued Jews during the Holocaust.
- To date, 6,394 Poles have been awarded the title of **Righteous among the Nations** by the State of Israel – more than any other nation.

Rightous Medal

Rightous Diploma

22

Poland's Solidarity Ended Communist Era in Central and Eastern Europe

Curriculum Pages 11-12, 58, 66-67


Solidarnosc: 25 Years of Freedom

9-12

In 2014, on June 4, the Republic of Poland marked the 25th anniversary of the first partially free elections that helped to bring down the Berlin Wall five months later. Throughout the country, this was an occasion for celebration, but also for reflection about achievement and missed opportunities. The year marked the silver anniversary of post-communist Free Poland. Apart from the two decades between the two world wars, it was only the second time in more than two centuries that Poland had been truly free. To put that in perspective, compared with the United States' 238 years of freedom since first celebrating independence in 1776, Poles have lived in a fully independent country for only 45 of the past 222 years!

25 FREEDOM

While some of your students were born when Europe erupted to the sounds of Solidarity, many teachers in your school may well remember the world-wide sensation caused by the collapse of Poland's communist rule. Through Lech Walesa's leadership among the shipyards of Gdansk, the communists' effective defeat at the polls in June 1989, the emergence of Pope John Paul II, Ronald Reagan and Tadeusz Mazowiecki, post-war Poland's first non-communist head of government. "Solidarity" came close to becoming a household word during a month of the period when the impossible was coming true.

Former president and Solidarity leader and Nobel Peace Prize winner Lech Walesa greets crowds at "Freedom Day" at Castle Square in Warsaw

Among European Union institutions, Poland commemorates the world-changing elections by treating invited guests to delicious Polish strawberries, brought from Kasubia, dipped in white Belgian chocolate to symbolize the Polish flag. Throughout the country, celebrations were held, and attention temporarily turned toward the visit of U.S. President Barack Obama who made a stop in Warsaw to share in the celebration while on his way to 2014's G7 summit in Brussels.

Strawberries dipped in white chocolate marked the celebration, reflecting the Polish flag. Tops read: "First free elections in post-war Poland mark the beginning of the fall of communism in Europe. This is how it looked."

The elections on May 4, 1989 were held against the background of a massive wave of workers' strikes that shook the communist regime so that it agreed to hold partially free elections. The polls were fully free for the Senate and not fully free for the Sejm, the lower chamber of parliament. However, the result of these elections was an overwhelming victory for Solidarnosc (Solidarity) and the opposition of the time.

The results were a political earthquake. Solidarnosc won 99 of the 100 Senate seats and all of the possible seats in the Sejm (161, with 171 for the communists). The Sejm voted for communist party secretary General Wojciech Jaruzelski as president, but his candidacy passed by just one vote. With no choice but to appoint a Solidarity member as prime minister, on August 24 Jaruzelski appointed Solidarnosc activist, Tadeusz Mazowiecki, as head of a Solidarity-led coalition, ushering in a period described as "free president, non-prime ministers."


From Poland, Pope John Paul II

9-12

He was the first non-Italian pope since the Dutch Pope Adrian VI who served from 1522 to 1523. Poland's Pope Saint John Paul II, also known as Saint John Paul the Great, was pope of the Catholic Church from October 16, 1978 until his death on April 2, 2005. He was the second longest-serving pope in modern history after Pope Pius IX who served for nearly 32 years from 1846 to 1878.

Karol Józef Wojtyła was born in the Polish town of Wadowice. He was the youngest of three children. His mother, Emilia, who was a schoolteacher, died during childbirth in 1929 when Wojtyła was eight years old. His elder sister, Olga, had died before his birth, but he was close to his brother Edmund who was 12 years his senior. Edmund's work as a physician eventually led to his death from scarlet fever, a loss which affected Wojtyła deeply.

As a boy, Wojtyła was athletic, often playing football as goalkeeper. During his childhood, Wojtyła had contact with Wadowice's large Jewish community. School football games were often organized between teams of Jews and Catholics, and Wojtyła often played on the Jewish side. "I remember that at least a third of my classmates at elementary school in Wadowice were Jews. An elementary school there were fewer. With some I was on very friendly terms. And what struck me about some of them was their Polish patriotism."

In mid-1938, Wojtyła left Wadowice and moved to Kraków, where he enrolled at the Jagiellonian University. He worked as a volunteer librarian and was required to participate in compulsory military training in the Academic Legion, but he refused to fire a weapon. He performed with various theatrical groups and worked as a plywood plant. During this time, he failed his language lessons and he learned as many as 12 foreign languages, nine of which he used extensively as pope.

In 1939, Nazi German occupation forces closed the university after invading Poland. Able-bodied males were required to work, so from 1940 to 1944 Wojtyła worked various jobs - as a messenger for a restaurant, a manual laborer in a limestone quarry and for a chemical factory - in order to avoid deportation to Germany.

Wojtyła started thinking seriously about the priesthood. In October 1942, while the war continued, he knocked on the door of the Bishop's Palace in Kraków and asked to study for the priesthood. Soon after, he began courses in the clandestine underground seminary run by the Archbishop of Kraków. On August 6, 1944, a day known as "Black Sunday," the German Gestapo began conducting round-ups in Kraków to curtail an uprising, similar to the recent uprising in Warsaw. Wojtyła escaped by hiding in the basement of his uncle's house while the German troops searched above. More than eight thousand men and boys were taken that day, while Wojtyła escaped to the Archbishop's Palace, where he remained until after the Germans had left. On the night of January 17, 1945, the Germans fled the city, and the students reclaimed the ruined seminary. Upon finishing his studies at the seminary in Kraków, Wojtyła was ordained as a priest on All Saints' Day, November 1, 1946, by Cardinal Sapieha, the Archbishop of Kraków.


Solidarnosc: 25 Years of Freedom (cont.)

9-12

At an international level, the election is seen as one of the major milestones in the fall of communism in Central and Eastern Europe. The high political drama unleashed when the Polish example proved contagious, and like dominoes one communist regime after another collapsed. Finally the unimaginable came true when the Soviet Union, which President Reagan called "the evil empire," voluntarily disbanded. That formally ended Europe's division into two hostile political blocs separated by an iron curtain as well as the cold war and arms race. As best they knew how, all the newly liberated countries began introducing parliamentary democracy and civil rights in place of the previous Soviet-style one-party dictatorship.

One of the key figures was Solidarnosc leader Lech Walesa, an electrician who would become a Nobel peace prize winner and, just one year later, president of a free Poland. "So we believe it started in Poland," said Arne Haugen, Polish Ambassador to Belgium, referring to the events that led to the collapse of the Berlin Wall and the fall of communism in Central and Eastern Europe.

SPI

Activities

Just as the article speaks of the falling dominoes which led to communist collapse, there very same events, and the freedom which followed, had their own ripple effects throughout Poland, both positive and negative. The events also placed central Europe under the international microscope. Many political upheavals since can draw comparisons. Either divide your class and have each group choose one of the scenarios below, or make it an individual out-of-class assignment. Small groups should prepare a visual classroom presentation representing one of the paragraphs below. As an individual assignment, students should write a paper regarding one of these topics.

1. Students should research Poland's Solidarity and draw comparisons and contrasts with the political upheavals of the "Arab Spring" uprisings of 2010 and further, which occurred in such countries as Egypt, Tunisia and Libya.

2. Under the Leszek Balcerowicz's radical market reforms that got under way in the early 1990s following Solidarity, Poles saw their purchasing power shrinked and many of the communist freebies they had become accustomed to done away with. In the final years of communism, people had wallets full of worthless paper money with few goods available to spend it on. Now the tables were turned, and stores bulged at the seams with finally-user-friendly, even though many people lacked the necessary cash.

3. Following Solidarity, Poland was still plagued by something unknown under communism: unemployment. Communist regimes had prided themselves on what they called "freedom to work" and gave everyone a job whether the economy needed it or not. By the turn of the century, however, unemployment had reached 18%.

4. Draw comparisons between freedom from oppression brought about by the Solidarity movement with the freedoms achieved over two centuries ago as the American colonials sought freedom from British rule. Which movement was more successful? Which was more peaceful? Who were the major leaders in each, and how are they similar or different? Compare and contrast the process and the results of each.

5. Just like current U.S. comparisons of lower class, middle class and the American one percent, how good or bad things are depends a lot on who one talks to. Young, university-educated living in big cities and holding good jobs in Poland tend to say things are great and couldn't be better. But less-educated, middle-aged and elderly Poles living in small towns and rural areas may say things like: "I probably won't live to see better times, but maybe things will improve for my children or grandchildren." Critics are quick to point to growing economic stratification - the difference between the country's richest and poorest, continues to grow.

Who was Lech Wałęsa, who was John Paul II?

Solidarność domino effect:

What other European countries freed themselves from the communist regime after Poland?

Today the United States and Poland are Very Close Allies

Who are these men?

U.S.A. Poland

Suggested links

Famous actors talk about Poland:

https://www.google.com/webhp?sourceid=navclient&ie=UTF-8&gws_rd=ssl#q=Polska+tak

Some famous Poles and other famous people with Polish roots:

https://www.youtube.com/watch?v=w2iH_1LdJJM

Examples of Activities

Curriculum Guide, Page 16

The Ultimate Polish Quiz

INTRO

Poland is a rather large European country, which played a large role in shaping that continent. Today, it celebrates independence, democracy, beautiful landscapes and landmarks, and an incredible commitment to strong education and continued growth, all while preserving its charming character and heritage. After students complete their exploration, put their studies to the test with this quiz (or use it as a starting point to see what they already know). Answers can be found on page 68.

Curriculum Guide, Page 25, also http://en.wikipedia.org/wiki/Pisanka_(Polish)

Crafts for Polish Holidays (cont.)

Easter & Polish Pisanka Eggs

K-2

Traditional Easter celebrations in Poland are as old and elaborate as Christmas celebrations and they involve a lot of preparations. Again, many are similar to U.S. Easter (like egg decorating), but many, like Christmas, are different. One week before Palm Sunday (the Sunday before Easter), housewives stopped baking bread through the fear that the bread they baked throughout the rest of the year would spoil. If any housewife violated this ban, the entire village would be in danger of a long drought, which could only be repelled by throwing the pots, and the guilty housewife, into a pond! Church bells that would ring from Palm Sunday onwards would fall silent on Holy Thursday. Rattles and clappers took their place. Fires were lit at crossroads so that travelers and poor people could warm themselves. Meals were also placed at these crossroads so that these people could nourish themselves. On Good Friday, the next day, no animals could be slaughtered, no bread baked, and mirrors must be covered. The use of combs was not allowed. A special kind of bread was prepared for Easter Sunday, called "paska." The master of the house was not permitted to help prepare the "paska," or his moustache would go grey and the dough would fail.

Curriculum Guide, Page 34, also http://www.polartcenter.com/Wycinanki_Paper_Cuts_s/169.htm

Wycinanki Paper Cutting

3-5

Wycinanki is a Polish word for paper-cut designs. These beautiful paper cut-outs have been used to decorate the interior of Polish homes since the early 19th century. Colorful wycinanki were pasted on furniture or roof beams as decoration, hung in windows, and given as gifts. These techniques originated with Polish shepherds cutting designs out of tree bark and leather. Traditionally done for relaxation in rural Poland, the techniques were passed down through generations, with new themes and ideas developing as the papercuttings became more detailed and intricate. In some towns and villages competitions evolved to create the most beautiful wycinanki. The Polish Pavilion at the 2010 World Expo in Shanghai, China was designed according to a wycinanki theme.

Curriculum Guide, Page 43

Exploring Polish Maps, Myths, Heroes

6-8 Grade Learning Unit

6-8

Poland's diversity extends beyond its geographical features and architecture. Poland is a country of both unparalleled historical facts and legends. The country expresses itself through the tales of military heroes and through the traditions of poster artists. Its own maps have been changed through times of conflict, and its people have changed the globe. There are probably many other countries on that globe about which your students know. At one time, the Republic of Poland even failed to exist. Through the lessons of this grade unit, your students will achieve a greater understanding about this country, its myths and heroes, its past and its present.

Before beginning your study of the Republic of Poland, begin with a classroom discussion about the basics of this nation. Do so by engaging your students' own thoughts, encouraging them to explore what they already know about Poland. Conclude your lesson by returning to this diagram, and allow students to list what they learned about the Republic of Poland through the classroom and individual assignments and activities that follow.

Examples of Activities

Curriculum Guide, Page 53

The Man Who Saved Washington (cont.)

Questions & Discussions

SPI: Social Studies 6.1.spi.1; Social Studies 6.1.tpi.6; Social Studies 7.1.spi.04

1) Despite his efforts for the U.S., since Pulaski led a plot against the Polish king, would your students consider him a hero or not? Research and discuss the impact of his tactical calvary units.
2) Pulaski is not the only Polish military leader who had an impact in the U.S. Have students also research and discuss general Tadeusz Kosciuszko. Research both and determine if there are any tributes or monuments to either which exist in the U.S.

Memphis in May International Festival — 53

Curriculum Guide, Page 53

Timeline of Polish Activity (cont.)

Activities

1). Assign each student one of the events from this Polish timeline, and have them research additional details about their event utilizing library or online resources. As time allows, let each student present their event and its details to the class.

2). Assign each student an event from the timeline, however omit the year in which it occured. Have students determine the year in which their event took place. Create a timeline on one of the walls in your classroom and have each student post their event in the correct position. You may have them either write their event on the timeline, or have each student create an illustration depicting their event and post the illustrations to the classroom timeline.

Memphis in May International Festival — 55

Curriculum Guide, Page 62

Poland During World War II (cont.)

World Geography 9-12.spi.4.2

Activity - Divide your classroom into small groups. Each group is to assume the role of a team of investigative television reporters and announcers from a major American television news network like CNN or Fox News. Let them choose either (1) news has just broken during World War II that the Germans and Soviets had invaded Poland or (2) liberators had just freed prisoners from Auschwitz and had begun to inform the world about the atrocities there. Have each student news crew research and present to the class a full news report about their chosen topic. Various students can serve as anchors, reporters in the field, public witnesses, news producers, camera operators, etc.

1999 Axelrod, T. "In the Camps" Teen Witnesses to the Holocaust
Reprinted with permission by The Rosen Publishing Group, Inc.

62 — Memphis in May International Festival

Curriculum Guide, Page 67

Solidarnosc: 25 Years of Freedom (cont.)

Activities

Just as the article speaks of the falling dominoes which led to communist collapse, these very same events, and the freedom which followed, had their own ripple effects throughout Poland, both positive and negative. The events also placed central Europe under the international microscope. Many political upheavals since can draw comparisons. Either divide your class and have each group choose one of the scenarios below, or make it an individual out-of-class assignment. Small groups should prepare a visual classroom presentation representing one of the paragraphs below. As an individual assignment, students should write a paper regarding one of these topics.

Curriculum Guide, Page 59

From Poland, Pope John Paul II (cont.)

9-12

Pope John Paul II is recognised as helping to end Communist rule in his native Poland and eventually all of Europe. John Paul II significantly improved the Catholic Church's relations with Judaism, Islam, the Eastern Orthodox Church, and the Anglican Communion. He upheld the Church's teachings against artificial contraception and the ordination of women, supported the Church's Second Vatican Council and its reform, and in general held firm to orthodox Catholic stances. He was one of the most traveled world leaders in history, visiting 129 countries during his pontificate.

Activities

1) Ask students to review the major events in Poland during the 20th century that influenced Karol Joseph Woytyla (either list these events or create a timeline). Discuss how each event shaped the Pope's life and how he responded to it. Here are some examples:

- Poland gains independence after World War I (1918).
- Period of dictatorship begins when Josef Pilsudski assumes power in a coup (1926).
- Hitler invades Poland (1939).
- Soviets invade and occupy eastern Poland (1939).
- Germans occupy Poland (1941).
- Holocaust and treatment of Jews in Poland.
- Nazis destroy Warsaw (1945).
- Stalin's Communist regime (1947-1956).
- Polish Solidarity movement (1980s).
- The following Web sites may help students review the history of Poland:
  http://lcweb2.loc.gov/frd/cs/pltoc.html
  http://www.worldrover.com/history/poland_history.html

2) Tell students that they will work in pairs to study and describe the significance of an event in the papacy of John Paul II. The class will create a timeline of significant events. Students will want to explore web sites about John Paul II before they select an event. Events may include the following:

- 1979: The Pope visits the site of a Nazi death camp at Auschwitz.
- 1979: He returns to Poland and holds Mass in Warsaw's Victory Square.
- 1986: He visits the synagogue in Rome, Italy.
- 1989: He receives Mikhail Gorbachev, then President of the Soviet Union.
- 1998: He visits Cuba to meet with Fidel Castro.
- 2000: He visits Israel.

SPI: Common Core W.9-12.7&8; World Geography 9-12.spi.4.1; World Geography 9-12.spi.4.2

3) Have students use both print and online resources in their research. The following Web sites may be helpful:

- John Paul II: The Millennial Pope (PBS) - http://www.pbs.org/wgbh/pages/frontline/shows/pope/
- Pope John Paul II (CNN) - http://www.cnn.com/SPECIALS/2005/pope/
- John Paul II Biography (The Vatican) - http://www.vatican.va/holy_father/john_paul_ii/biography/index.htm
- Pope John Paul II (Time) - http://www.time.com/time/time100/leaders/profile/popejohn.html
- The Papal Visit to Cuba - http://articles.cnn.com/1998-01-24/world/9801_24_pope.cuba.update_1_lina-ruz-sierra-maestra-type-of-political-power?_s=PM:WORLD

4) Once pairs have selected an event, ask them to summarize it on one page. Have students write the month and year of the event at the top of the paper. Their summary should answer the following questions:

- What took place?
- When did it take place?
- Where did it take place?
- Why is the event significant?
- How does it reflect the values or beliefs of Pope John Paul II?
- Who did this event influence most?

5) Have students present their findings, and then post their papers on a bulletin board according to date. This will create the a class timeline. Finally, hold a class discussion about the most influential contributions the Pope has made. What do the students think is his greatest legacy?

Memphis in May International Festival — 59

Session:

Mathematical Trip to Poland & Simplified Guide to Reading Polish

Presentation and Activities created by:

Magdalena Teodorowicz & Ludmila Mitchell

Nicolaus Copernicus School of Polish Culture & Language

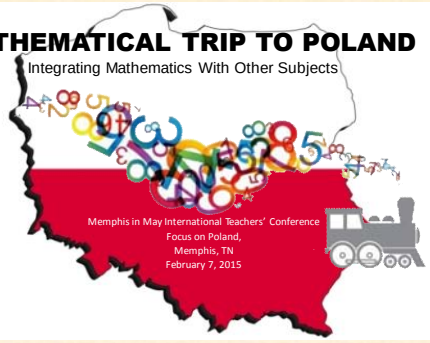
&

Whitehaven High School

This presentation and all resources in this binder are available online at Memphisinmay.org/educationresources

MATHEMATICAL TRIP TO POLAND

Integrating Mathematics With Other Subjects



Memphis in May International Teachers' Conference
Focus on Poland,
Memphis, TN
February 7, 2015

Magdalena Teodorowicz, MMath
Pedagogical University of Cracow, Poland
Math Kangaroo in USA, NFP

Benefits From Integration of Math With Other Subjects

- Students think about the "real world" which is a goal of the National Council of Teachers of Mathematics (NCTM) standards.
- Students start to think about why things happen, which gives them a practical approach to learning and using mathematics.
- Integration allows students to see the usefulness and importance of mathematics which therefore enables them to develop new understandings and skills.

CONTENTS:

Flight from Memphis, USA to Warsaw, Poland

- Trip to North of Poland from Warsaw
  Warsaw – Torun – Gdansk
  Flight back from Gdansk, Poland to Memphis, USA
- Trip to South of Poland from Warsaw
  Warsaw – Ujazd – Krakow
  Flight back from Krakow, Poland to Memphis, USA

Welcome to Poland!

Key Facts about POLAND	Key Facts about USA
Â **Area:** 312,685 sq km (120,728 sq miles)	Â **Area:** 9,826,675 sq km (3,793,840 sq miles).
Â **Population:** 38,346,279 (July 2014 est.)	Â **Population:** 318,892,103 (July 2014 est.)
Â **Capital:** Warsaw.	Â **Capital:** Washington, D.C.
Â **Official language:** Polish.	Â **National language:** English.
Â **Head of state:** President Bronisğaw Komorowski since 2010.	Â **Head of state:** President Barack Obama since 2009.
Â **Currency:** Zğoty (PLN; symbol zğ = 100 groszy.	Â **Currency:** United States dollar (USD; symbol $) = 100 cents

Welcome to WARSAW!

Warsaw (Polish: Warszawa) **is the capital and largest city of Poland.**

It is located on the Vistula River, in east-central Poland, roughly 260 kilometers (**160 mi**) **from the Baltic Sea and** 300 kilometers (**190 mi**) **from the Carpathian Mountains.**

Attractions in Warsaw

The Mermaid of Warsaw (Polish: Syrenka Warszawska) **is a symbol of Warsaw.** A bronze statue of mermaid gazing at the gray waters of Vistula River near Świętokrzyski Bridge.

There are various legends about the Warsaw mermaid. **The main one** used in the City's literature and by tour guides says that the mermaid was swimming in the river when she stopped on a riverbank near the Old Town to rest. Liking it, she decided to stay. Local fishermen noticed that something was creating waves, tangling nets, and releasing their fish. They planned to trap the offender, but fell in love with her upon hearing her singing. Later, **a rich merchant trapped the mermaid and imprisoned her.** Hearing her cries, **the fishermen rescued her, and ever since, the mermaid, armed with a sword and a shield, has been ready to help protect the city and its residents.**

Warsaw's Castle Square (Polish: *plac Zamkowy w Warszawie*) **is a historic square in front of the Royal Castle – the former official residence of Polish monarchs** – located in Warsaw, Poland. It is a popular meeting place for tourists and locals. The Square (in a more or less triangular shape) features **the landmark King Sigismund III Vasa's Column** to the south-west, and is surrounded by historic townhouses. It marks the beginning of the bustling Royal Road extending to the south.

The Palace of Culture and Science (Polish: Pałac Kultury i Nauki, also abbreviated PKiN) in Warsaw is the tallest building in Poland and the eighth tallest building in the European Union.

The Palace of Culture and Science known as the wedding cake is the tallest building in Poland and 187th tallest building in the world. It took three years to build it; it was completed in 1955. It was a gift to Poland from the Russian government. Its architecture resembles that of State University building in Moscow. **The Rolling Stones performed a concert there in 1967 and Leonard Cohen in 1985.**

The building currently serves as an exhibition center and office complex. It is 778 ft tall which includes the height of the spire. There are 3288 rooms on 42 floors, with an overall area of 123,000 m², containing movie theaters, theatres, museums, offices, bookshops, a large conference hall for 3000 people, and an accredited university, Collegium Civitas on the 11th and 12th floors of the building.

SAMPLE MATH PROBLEMS

1. Circle the correct shade of the statue of the Warsaw Mermaid.

Preschool

2. Enlarge the coat of arms of Warsaw.

First Grade

3. Always jump by 5 boxes clockwise. Decode and write the message below.

LU	SMU	WAR	NU	FA
A				MN
MO				ND'S
IN				SAW.
SIGI	CO	IS	MOUS	MENT

First Grade

4. The picture presents the Sigismund's Column in scale 1:400. The height on the picture is 5.5 cm. Calculate the actual height of this column.

Fifth Grade

5. The Smiths decided to purchase suvenirs for their cousins in the USA. If they bought 4 statuettes of the Mermaid Statue and 2 statuettes of the Sigismund's Column by the Royal Castle, they would pay 200 zł. However, they would pay for 2 statuettes of the Mermaid Statue and 4 of the Sigismund's Column purchased by the Royal Castle 190 zł.

a) How much is a statuette of the Mermaid Statue and what is the price of a statuette of the Sigismund's Column?

b) Calculate the price in dollars for a statuette of the Sigismund's Column. An average zloty exchange rate is 0.28$.Round to the nearest dollar.

Sixth Grade

6. 100 North Main Tower is the tallest building in Memphis, Tennessee. Its height is 131 meters (430 feet). The Palace of Culture and Science in Warsaw is 106 meters higher.

a) Calculate the height of the Palace of Culture and Science in Warsaw.

Third Grade

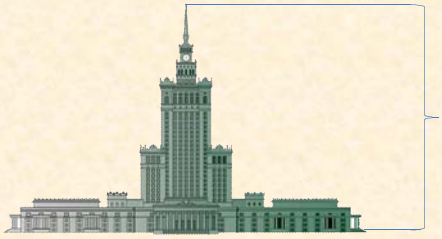
b) How many feet is Palace of Culture and Science in Warsaw, if 1 meter is about 3.28 feet?

Fifth Grade

Memphis

Warsaw

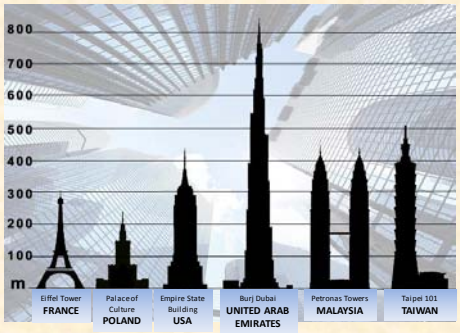
7. The building presents the Palace of Culture and Science in Warsaw and has a scale of 1 : 4000.



What is the actual height of the Palace of Culture and Science?
Select the appropriate answer.

A. 23.7 m B. 237 m C. 0.0237 km D. 0.2 km

8. a) Read the diagram and write the answers below. What is the approximate height of the Palace of Culture and Science in Warsaw, the Empire State Building in New York City and the Burj Dubai in Dubai.



The approximate height of the Palace of Culture and Science in Warsaw is .....meters.
The approximate height of the Empire State Building in New York City is .....meters.
The approximate height of the Burj Khalifa, known as Burj Dubai in Dubai is .....meters.

b) Find the exact height of the skyscrapers and write below.

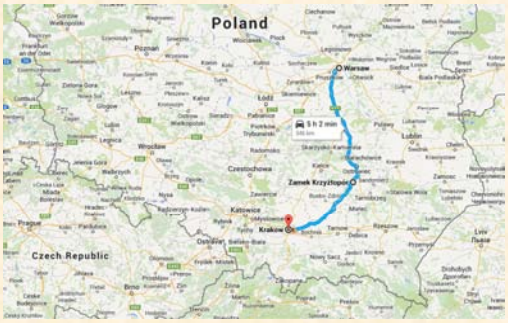
The height of the Palace of Culture and Science in Warsaw is .....meters.
The height of the Empire State Building in New York City is .....meters.
The height of the Burj Khalifa, known as Burj Dubai in Dubai is .....meters.

c) What is the difference between your estimates and between the real dimensions?

The difference of the approximate height and real dimension of the Palace of Culture and Science in Warsaw is .....meters.
The difference of the approximate height and real dimension of the Empire State Building in New York City is .....meters.
The difference of the approximate height and real dimension of the Burj Dubai in Dubai is .....meters.

d) Convert real dimensions of the height of the skyscrapers in meters to inches? (1 meter = 3.28084 feet)

TRIP2: WARSAW – UJAZD- KRAKOW



Welcome to UJAZD!

Ujazd is a village in the administrative district of Gmina Iwaniska, within Opatów County, Świętokrzyskie Voivodeship, **in south-central Poland. It was once famous for horse breeding (horses were broken in there and hence the name of the village).** With Reformation becoming more and more popular in the 16th century, a wooden church in Ujazd, dating back 1403, was converted into an Arian house of prayer. It was recovered in 1614 thanks to the efforts of Sebastian Lęgęza, the then owner of the Iwaniska property.

Further fate of **Ujazd is connected with the family of Ossolińscy.** At the beginning of the 17th century, for a short period of time it belonged to Jan Zbigniew Ossoliński, landlord in Ossolina, who handed over the property to his son, Krzysztof, as a wedding present Ossolinie in 1587. Accepting Iwaniska, Krzysztof resigned from a property in Mielec which was in turn granted to his brother, Maksymilian, and finally became the owner of Iwaniska and Ujazd in 1619.

Krzyztopor Castle in Ujazd

Krzyztopor Castle erected by Wawrzyniec Senes in the years 1621–1644 in Ujazd had been the largest castle in Europe until the Versaille castle was built. Krzysztof Ossoliński, the voivode of Sandomierz and a founder of the "palazzo in fortezza" – a palace in the fortress – wanted to impress his contemporaries. Therefore he erected the monumental complex of palaces **built in a pentagon modeling on a calendar. The castle had bastion fortress as many windows as there are days in a year, as many chambers as there are weeks, as many rooms as there are months and as many towers as there are seasons of the year. Horses in stables had marble troughs and looked at themselves in crystal mirrors.** In one of the rooms an aquarium with exotic fish functioned as a ceiling. **Ossoliński spent the amount of 3 million Polish zlotys on the castle** with its cubic capacity of 70 000 m3 and covering the area of 1.3 hectares. Presently Krzyztopor Castle ruins enchant with their beauty and magnitude and they once again start to live during numerous tournaments and knight fight shows held there.

INTERESTING FACTS

Krzyztopor Castle

CASTLE'S DIMENSIONS:

- Capacity – 70,000 cubic meters
- Total area of the castle – 1.3 hectare
- Total length of walls – 600 meters
- Total area of walls – 3,730 square meters
- Total area of gardens – 1.6 hectare
- Dimensions of the complex: north-south axis – 120 meters,east-west – 95 meters.

MATERIALS USED FOR CONSTRUCTION:

- 11,000 tonnes of local quartzite sandstone,
- 300 cubic meters of kunowski sandstone,
- 30,000 roofing tiles,
- 200,000 bricks,
- 500 tonnes of burnt lime,
- 5,000 cubic meters of sand as well as marble, alabaster and exotic wood; **1 million egg whites was used to make waterproof mortar**.

- **The dining room situated in the tower had a glass ceiling through which visitors could see an aquarium with exotic fish.**
- **In the cellars of this tower, there is a spring with water of unusual taste and therapeutic properties called Krzyżtopożanka.**
- **In one of the underground rooms, there are small stalactites and stalagmites built over a long period of time due to rain waters dripping through the vault.**

Palace interiors near the ellipse courtyard.

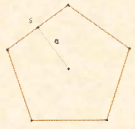
SAMPLE MATH PROBLEMS

1. The castle was built according to the calendar. How many windows, chambers, rooms and towers does the Krzyztopor Castle have?

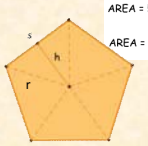
The Krzyztopor Castle has …… windows, ……rooms, ……chambers and ……towers.

2.The construction plan of this defensive Krzyztopor castle is unique – it comprises a bastion inscribed in a pentagon.

a) What is the length of one wall of the castle if total length of walls is 600 meters?



b) Calculate the area of the castle. The length of radius is 75 m. Provide your answer in hectares.



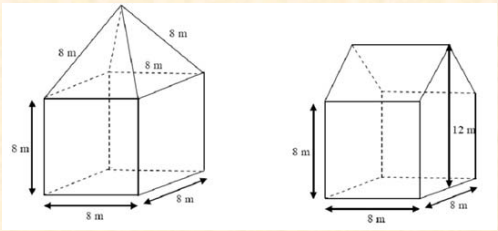
$$AREA = 5 \cdot \left(\frac{1}{2} \cdot s \cdot h\right)$$

$$AREA = \frac{1}{2} \cdot 5s \cdot h$$

c) What is the area of the gardens if the total area of the castle and garden is 2.95 ha.

7th grade

3. Roofs of all 4 Krzyztopor castle towers have conical shape. If they had built pitched roofs, would they have saved money on roofing tiles? Which roof has a larger surface? Write down the calculations.



8th grade

Welcome to KRAKOW!

Kraków also Cracow, or Krakow **is the second largest and one of the oldest cities in Poland. Situated on the Vistula River** (Polish: Wisła) in the Lesser Poland region, the city dates back to the 7th century. Krakow has traditionally been one of the leading centers of Polish academic, cultural, and artistic life and is one of Poland's most important economic hubs. **It was the capital of Poland from 1038 to 1569.**

Attractions in Krakow

The Cloth Hall (Polish: Sukiennice) in Kraków, Lesser Poland, dates to the Renaissance and **is one of the city's most recognizable icons.** It is the central feature of the main market square in the Kraków Old Town (listed as a UNESCO World Heritage Site since 1978).

Church of Our Lady Assumed into Heaven (also known as **St. Mary's Church**; Polish: Kościół Wniebowzięcia Najświętszej Maryi Panny (Kościół Mariacki)) **is a Brick Gothic church** re-built in the 14th century (originally built in the early 13th century), **adjacent to the Main Market Square in Kraków, Poland. It is particularly famous for its wooden altarpiece carved by Veit Stoss (Wit Stwosz).**

On every hour, a trumpet signal—called the Hejnał mariacki—is played from the top of the taller of St. Mary's two towers. The plaintive tune breaks off in mid-stream, to commemorate the famous 13th century trumpeter, who was shot in the throat while sounding the alarm before the Mongol attack on the city. The noon-time hejnał is heard across Poland and abroad broadcast live by the Polish national Radio 1 Station.

Wawel is a fortified architectural complex erected on the left bank of the Vistula river in Kraków, Poland, at an altitude of 228 metres above sea level **The Wawel Royal Castle and the Wawel Hill** constitute the most historically and culturally important site in Poland. **For centuries the residence of the kings of Poland** and the symbol of Polish statehood, the Castle is now one of the country's premier art museums.

Smocza Jama (Polish for "**dragon's den**") **is a limestone cave in the Wawel Hill in Kraków.** Owing to its location in the heart of the former Polish capital and **its connection to the legendary Wawel Dragon, it is the best known cave in Poland.**

The Wawel Dragon (Polish: Smok Wawelski), also known as the Dragon of Wawel Hill, is a famous dragon in Polish folklore. His lair was in a cave at the foot of Wawel Hill on the bank of the Vistula River. In some stories the dragon lived before the founding of the city, when the area was inhabited by farmers.

The Legend of Smok Wawelski

Many, many years ago, when Krakow was still the capital of Poland, there lived in the castle on the Wawel mountain King Krak with his daughter Wanda. All the citizens in Krakow loved their kind-hearted King and the loving Wanda. For many years everyone lived peacefully and provided for the well-being of their town. Amongst them lived one of the cobbler's family, a capable and hard-working apprentice by the name of Dratewka.

One day the **in a cave in the Wawel mountains, an evil dragon had settled.** He had three heads and his body was covered in scales. When he was angry he went into such a rage that the mountains shook and he breathed fire and smoke from his mouth. **He made the whole town afraid. In order to calm him down the people put a sheep in front of his cave everyday. But this was not enough for him. Once a year even a small girl had to be sacrificed.**

Many of the citizens tried to fight against the dragon. However, no-one was able to beat him. The council of elders spent days and nights trying to find a solution but they couldn't find one. At long last there were no more girls left in Krakow, only Princess Wanda. The dragon became more and more impatient. Since there were no other girls to be found everyone knew that it was the king's daughter's turn. There was great mourning all over Krakow. **The king announced to the whole country that he was looking for a brave knight who could defeat the dragon.** Many courageous knights came and fought without success against the beast. Most were killed in their fight. When all hope had been abandoned, **the cobbler's apprentice, Dratewka, appeared before the King.** He asked for permission to fight the dragon. The king listened and agreed to what he was intending to do. The young man got to work on his plan straight away.

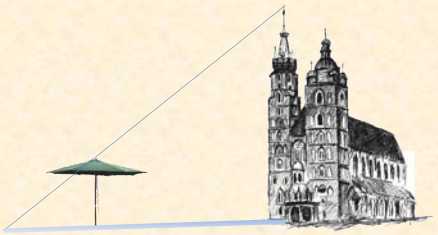
From the butcher he got himself a sheepskin. From all the citizens he collected brimstone, salt, pepper and pitch. He filled the sheepskin with these and sewed it up tightly so it looked like a real sheep. At night he put the "sheep" in front of the entrance to the cave. The next morning **the hungry dragon came out of the cave and ate up the sheep straight away. Shortly afterwards he felt a terrible burning all over his body. He tried to stop the burning by drinking massive amounts of water.** He drank so much that the bed of the Vistula river could be seen. He carried on drinking until eventually **he exploded with an enormous bang.** There was great joy throughout Krakow. **Dratewka married Wanda and they lived happily together for a very long time to come.**

SAMPLE MATH PROBLEMS

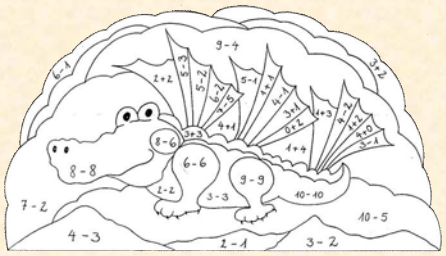
1. If the trumpeter played the trumpet signal from the top of the tower of St. Mary's Church only when both hands of the clock are perpendicular, how many times would you be able to hear it in 24 hours?

A. 8 times
B. 4 times
C. 22 times
D. 44 times

2. Calculate the height of the higher tower of the St. Mary's Church in Krakow. The length of the shadow is 123 m and at the same time the length of the shadow of a 2-meter umbrella in the vertical position is 3m.



3. Subtract to find the differences and add to find the sum.
Color the Wawel Dragon.



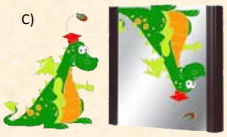
0 = green 2 = red 4 = pink 6 = yellow
1 = brawn 3 = orange 5 = blue

4. Select the correct reflection in the mirror.

A)

B)

C)



D)

5. Pictures of the kings and princes of Poland appear on the Polish banknotes.

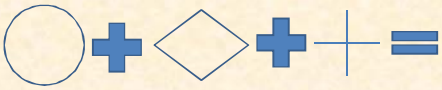
Å200 zl features Zygmunt I Stary (reign:1506 – 1548)

Å100 zl note has Wladyslaw Jagiello (reign:1386 – 1434)

- 50 zl note has Kazimierz the Great (reign:1333 – 1370)
- 20 zl note portrays Boleslaw I the Brave (reign:992 – 1025)
- 10 zl note depicts first ruler of Poland, Price Meszko I (reign:963 – 992)

The figures on the left side: square, circle, diamond, plus sign, and triangle, are embossed, so the individuals with visual impairments have no trouble indentifying them.

a) How much zloty is it?



b) Which sign makes the statement true?

A) B) C)

Third Grade

c) Write this number using words.

d) Code the number by the figures on Polish banknotes.

1, 005, 020

Fourth Grade

e) How long did Zygmunt I Stary, king of Poland, reign? The result write in Roman numerals.

f) Create a list, ordered by length of reign, of the kings and princes of Poland appear on the Polish banknotes, 200 zl , 100zl , 50zl , 20 zl ,10 zloty.

Fourth Grade