

# Renew Yourself By Teaching Math in Other Countries

....a continuation of a presentation/discussion created and sponsored by the USNCMI  
(US National Commission on Mathematics Instruction)

Hawaii International Conference on Education  
Honolulu, Hawai'i January 2015

CMC-North at Asilomar, CA December 2013  
ICRSME at Granada, Nicaragua, March 2013  
CMC-North at Asilomar, CA December 2011  
NCTM Indianapolis, IN, April 2011  
AMTE at Irvine, CA, January 2011  
NCTM San Diego, CA, April 2010  
AMTE at Irvine, CA, January 2010  
NCTM at Washington DC, April 2009  
CMC-North at Asilomar, CA December 2008  
ICME in Monterrey, Mexico July 2008  
NCTM at Salt Lake City, April 2008

# Panelists

HERE AT the Hawaii International Conference on Education:

- Kristen Raymond,, Santa Cruz, CA
- Carol Langbort, Professor Emerita, San Francisco State University
- Stuart Moskowitz, Humboldt State University, Arcata, CA

- **PREVIOUS SESSIONS:**

- Susan Hillman, Saginaw Valley State University
- Cathy Seeley, Senior Fellow, Dana Center, Univ. of TX
- Ann Lawrence, US National Commission on Math Instruction
- Robert Stein, California State University San Bernardino
- Sybilla Beckman, University of Georgia
- Diane Schnellhammer, Ramstein Air Base, Germany
- Barbara Garii, SUNY, Oswego (in absentia)
- Brian Lim, Sacramento, CA
- Joe Rosenstein, New Brunswick, NJ
- Krista Miller, Arcata, CA
- Rick Scott, Director of P-20 Policy, NM Higher Ed Dept.

# U.S. National Commission on Math Instruction (USNC-MI)

- Addresses international aspects of mathematics education
  - Plans, recommends & encourages projects
- Advises the National Academies of Sciences on the International Commission on Math Instruction (ICMI) and
- Chairs the committee to plan for The International Congress on Math Ed (ICME)

# THE FULBRIGHT PROGRAM

- is the flagship international educational exchange program sponsored by the U.S. government and is designed to increase mutual understanding between the people of the United States and the people of other countries.
- is sponsored by the U.S. Department of State, Bureau of Educational and Cultural Affairs, it provides funding for students, scholars, teachers and professionals to undertake graduate study, advanced research, university teaching, and teaching in elementary and secondary schools.



# SENATOR J. WILLIAM FULBRIGHT

This program was established by the U.S. Congress in 1946, under legislation introduced by then-Senator J. William Fulbright of Arkansas.

- prominent and gifted American statesman of the 20<sup>th</sup> century
- 1942 elected to U.S. Congress; 1944 elected to U.S. Senate and served there until 1974
- 1949, member of the Senate Foreign Relations Committee; chairman from 1959 – 1974

# J. WILLIAM FULBRIGHT

- He received numerous awards from governments, universities, and educational organizations around the world for his efforts on behalf of education and international understanding .
- In 1993 he was presented the Presidential Medal of Freedom by President Clinton.
- On February 9, 1995, Senator J. William Fulbright died in Washington, DC at the age of 89.

# CORE FULBRIGHT SCHOLAR PROGRAM

- [WWW.CIES.ORG/US\\_SCHOLARS/](http://WWW.CIES.ORG/US_SCHOLARS/)

This program sends 800 U.S. faculty and professionals abroad each year. Grantees lecture and conduct research in a wide variety of academic and professional fields.

# FULBRIGHT PROGRAMS

Specialist  
Program

Scholars in a  
Changing World

Post-Doctoral  
Early Career

Grants for  
Teachers



# POSTDOCTORAL/EARLY CAREER AWARDS

- The Fulbright program is eager to engage **postdoctoral and early career academics**, offering opportunities in a range of countries and fields. These awards present an excellent opportunity for scholars to deepen their expertise, to acquire new skills, to work with additional resources and to make connections with others in their fields.

# GRANTS FOR TEACHERS

- <http://www.fulbrightteacherexchange.org/>
- **The Fulbright Teacher Exchange Program** seeks to improve mutual understanding among teachers, their schools and communities in the U.S. and abroad through two programs – the **Fulbright Classroom Teacher Exchange Program** and the **Distinguished Fulbright Awards in Teaching Program**.

# INTERNATIONAL CLASSROOM EXCHANGES FOR TEACHERS

- **The Fulbright Classroom Teacher Exchange Program** offers educators the opportunity to exchange teaching positions with a teacher from another country for one semester or academic year.

# INDEPENDENT STUDY ABROAD FOR TEACHERS

- The Distinguished Fulbright Awards in Teaching Program allows teachers to go abroad for three to six months to take classes at an international university, observe classes and offer seminars in local schools and complete a project of their own design.



# FULBRIGHT SCHOLARS IN A CHANGING WORLD

- **Program Innovations To Increase Flexibility, Impact And Scope**
- **Fulbright Flex Awards** In order to engage U.S. scholars currently unable to spend extended periods of time abroad, the Fulbright Program welcomes applications from scholars who propose multiple stays of **one to three months in the host country over a period of two to three years.**

# FULBRIGHT SPECIALIST PROGRAM

- **The Fulbright Specialist Program** is designed to provide short-term academic opportunities (2 to 6 weeks) for U.S. faculty and professionals.
- Applications are accepted on a rolling basis throughout the year.
- Eligible activities include short-term lecturing, conducting seminars, teacher training, special conferences or workshops, as well as collaborating on curriculum planning, institutional and/or faculty development.

# HOW IT WORKS



Qualified U.S. Applicants apply throughout the calendar year for candidacy on the **Fulbright Specialist Roster**.

CIES builds rosters of candidates in each program field and facilitates matching of Specialist with program request.

Overseas degree granting academic institutions submit requests throughout the calendar year for Fulbright Specialist via Fulbright commission or U.S. Embassies.



# FULBRIGHT SPECIALIST PROGRAM GUANAJUATO, MEXICO





# GUANAJUATO



# WHERE IS GUANAJUATO?





# CIMAT – CENTER FOR THE INVESTIGATION OF MATHEMATICS



# CIMAT FROM PANORAMICA







CIMAT  
Centro de Investigación Matemática

\$ TEL-73 473 55  
73 711 55 ext. 1000  
Pacifico



# VALENCIANA CHURCH



# HOUSING AT CIMATEL





# I TAUGHT A COURSE AT CIMAT

- The class was for math professors who were responsible for professional development for classroom teachers.



# ELEMENTARY SCHOOL

- I visited an elementary school in Santa Rosa, a town about 30 minutes away.
- I met the principal, Rosa, in a Salsa class in Guanajuato, and she invited me to visit her school.
- There was no running water there.





No running water at this school– but,  
Computer projection systems hanging from the ceilings  
in the classrooms.





# SCHOOL CHILDREN SANTA ROSA



# SAN LUIS POTOSI







# Benemérita y Centenaria Escuela Normal del Estado

## TALLER

“El Material Concreto: Mediador en  
la Construcción del Conocimiento  
Matemático”

Dra. Carol R. Langbort

Licenciatura en Educación Secundaria  
con especialidad en Matemáticas



5 y 16 de noviembre de 2006.





# 3-DAY WORKSHOP



# PARADE IN GUANAJUATO





# PARADE



# A DAY SHOPPING IN LÉON





# DAY OF THE DEAD



# DAY OF THE DEAD





# DAY OF THE DEAD



# AT THE CEMETERY





# CERVANTINO FESTIVAL CLIPS (PERU)



# CERVANTINO FESTIVAL SPAIN



# VALENCIANA CHURCH





# CERVANTINO FESTIVAL ENGLAND



# CERVANTINO FESTIVAL MEXICO



# CERVANTINO FESTIVAL CUBA





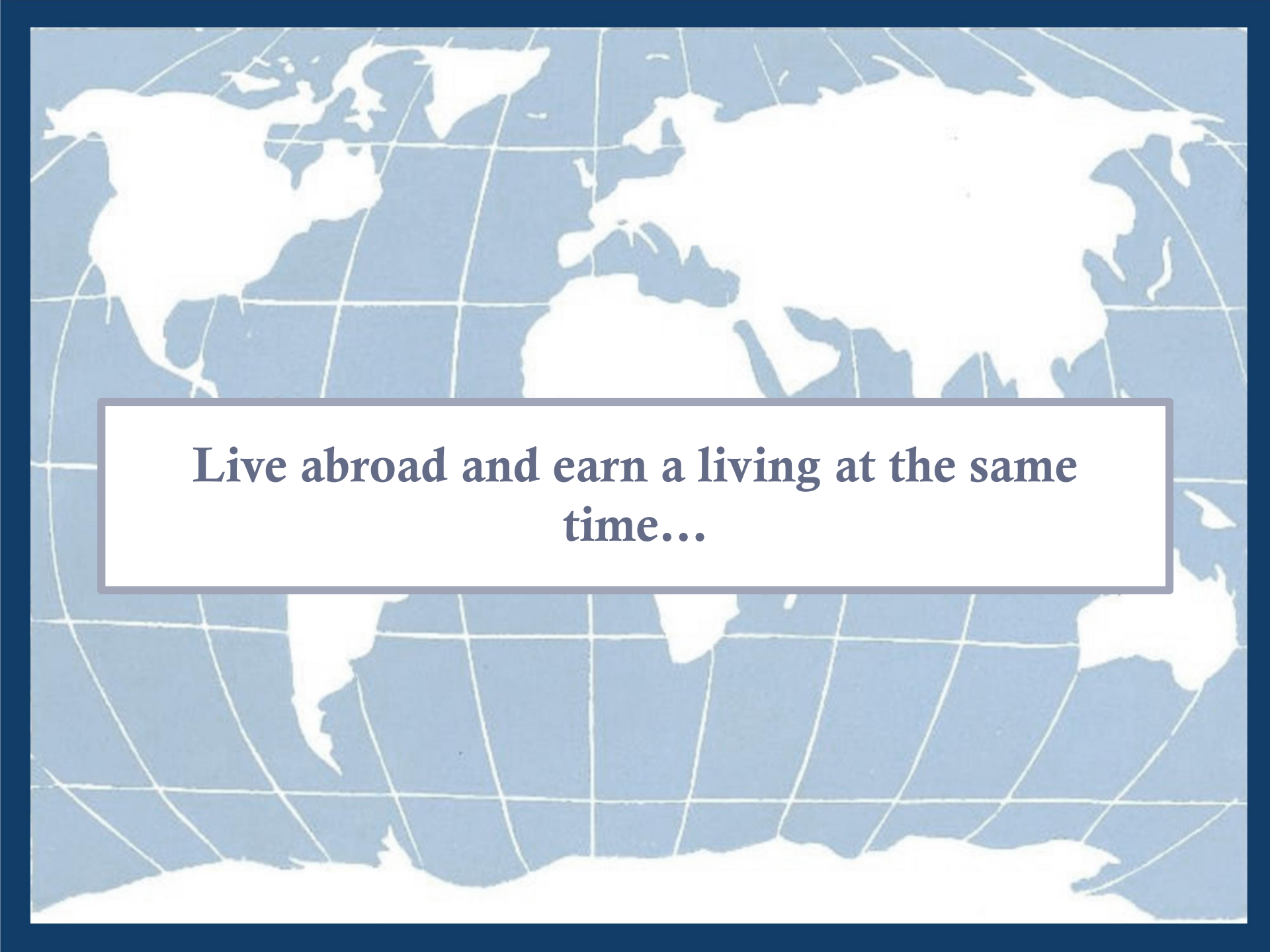
# LINKS TO FULBRIGHT

- [WWW.CIES.ORG/US SCHOLARS/](http://WWW.CIES.ORG/US_SCHOLARS/)
- [WWW.CIES.ORG/SPECIALISTS](http://WWW.CIES.ORG/SPECIALISTS)
- [WWW.CIES.ORG/](http://WWW.CIES.ORG/)
- <http://www.fulbrightteacherexchange.org/>

# CAROL LANGBORT, PH.D.

- Professor Emerita, San Francisco State University
- Department of Elementary Education
- [clangbo@sfsu.edu](mailto:clangbo@sfsu.edu)





**Live abroad and earn a living at the same  
time...**







A light blue world map with white grid lines is visible in the background. The map shows the continents of North and South America on the left, and Europe and Africa on the right.

## Organizations and links:

- Council of International Schools

[www.cois.org/](http://www.cois.org/)

- Search Associates

[www.searchassociates.com/](http://www.searchassociates.com/)



# Bringing Technology to African Classrooms

Stuart Moskowitz  
Humboldt State University





# THE BINDURA PROJECT

- Acquiring 'obsolete' technology from the US
- Educating teachers in Africa about the potential use of technology in the mathematics teaching environment
- Providing technology for teachers and schools with continued professional development





# Where is Bindura, Zimbabwe?



Bindura

Shamva

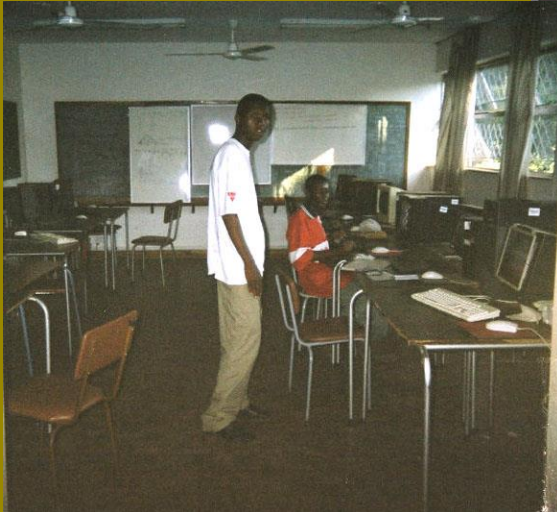


# Cape Town, South Africa



# BINDURA UNIVERSITY OF SCIENCE EDUCATION

- College of UZ
- Math and Science Education
- Enrollment



# BUILDING A LASTING RELATIONSHIP





# First Workshop in Aug 2002

- Educated 100 mathematics

teachers and student teachers in

Zimbabwe at the Bindura University of Science Education



- Distributed over 100 donated calculators to teachers



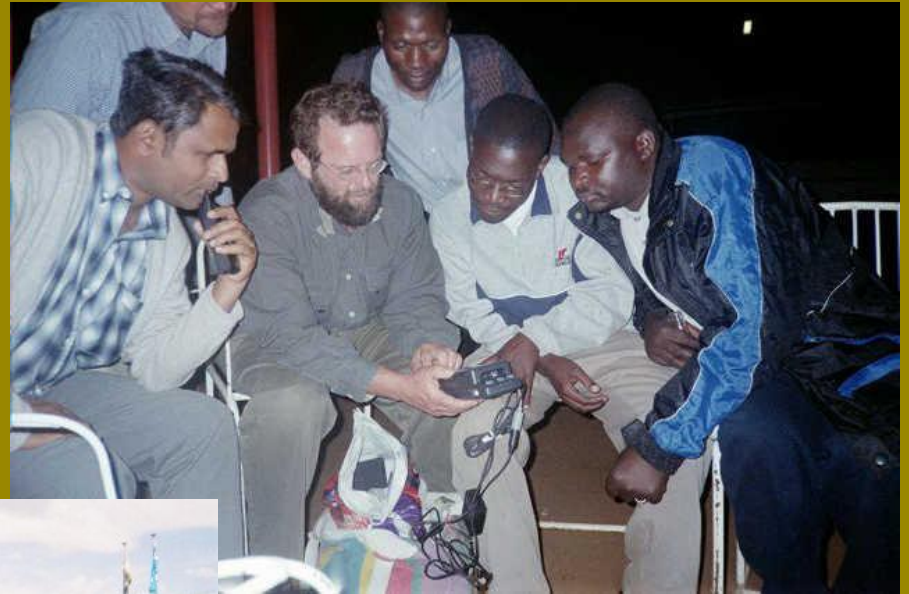
# Zimbabwean School Visits

## GNEIMER PRIMARY SCHOOL





# ZIMBABWE: TIME IN BINDURA





# SECOND SET OF WORKSHOPS IN JANUARY 2004

- Trained 59  
mathematics  
Teachers
- \* 38 Teachers in  
Zimbabwe
- \* 21 Teachers  
in South Africa at  
University of  
Western Cape



# 3rd Series of Workshops

## July 2004

- One week in South Africa to continue the training with the same group of teachers
- In Zimbabwe, we bring the workshops to teachers in remote areas





# Bringing the Calculators to Remote Sites--July 2004

- Bindura University
- Harare Girl's High School
- Marondara High School
- Mutare Teacher's College
- Six of us traveled in a rented VW Caravan
  - 3 Zimbabweans
  - 1 **Mauritian**
  - 2 Americans





Lovemore Nyaumwe  
Education Professor



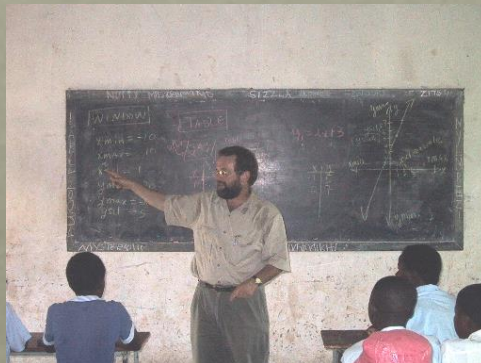
Ravi Bappoo  
Maths Dept Chair



Claudious Dzambara  
High School Maths  
Teacher



Maria Mbasa  
Maths Dept  
Secretary



Stuart Moskowitz

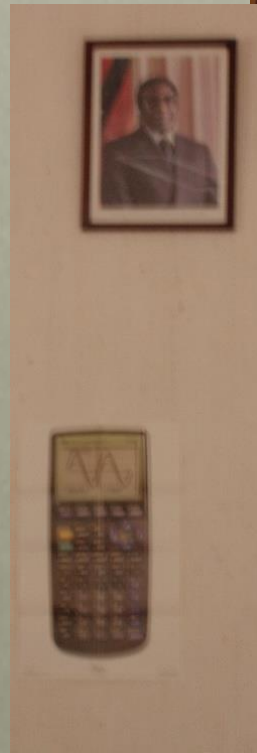


Jim Tarvin



# Two Days at Girl's High School in Harare

- 65 Teachers attending.
- Ministry of Education sends officials to see what we are doing.
- More formal setting.



# Two Days in Marondara

- We're 5 hours late on a Sunday due to car problem.
- 65 teachers wait for us!
- No desks, small room.

It doesn't matter.



## SCIENCE EDUCATION INSERVICE TRAINING

- |  |                         |
|--|-------------------------|
| 1 Integrated Research & Evaluation         | 2 ZimSciNet             |
| 3 Production of Local Curriculum Materials | 4 Post Graduate Diploma |
| 5 Science and Mathematics Centres          | 6 Technical Support     |

PROMOTING QUALITY IN SCIENCE & MATHEMATICS EDUCATION



# LODGING AT AN ORGANIC FARM





# One Day Workshop at Mutare Teacher's College



- We learn the day before that no advertising had occurred.
- We visit 2 schools and contact one teacher leader.
- 60 teachers and students attend with one day notice.



# Mutore Primary School on a knoll in the Bvumba Mountains



# 4<sup>TH</sup> GRADE MATHS

Addition: plus, add, increase  
altogether, the  
sum of.

Subtraction: minus, subtract.  
the difference between  
take away.

Multiplication: times(x), multiply  
by, the product of.

Division: divide by, into ✓

26.  $408 + 70 + 7$  is  
A 478 B 475 C 485 D 458

27.  $3^3 - 3 \times 2$  when simplified  
is A 3 B 12 C 0 D 18

28.  $\frac{3}{4}$  of 56 = A 46 B 64 C 49  
D 80

29.  $\frac{3}{5}$  of a number is 18.  
The number is - A 9 B 21 C 45 D 27

30.  $\frac{3}{4} \times 48$  ☐  $6^2$  A > B < C = D ≠

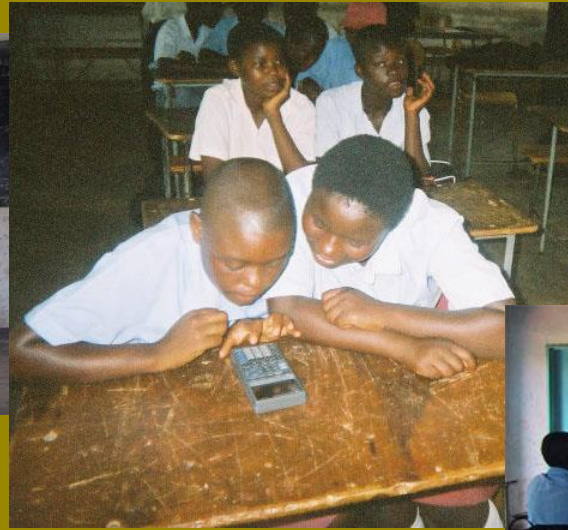
31. The divisor is 0.4, the  
dividend is 2, the quotient  
is A 5 B 0.52 C 0.05 D 5.02

32. A farmer has 325  
workers. 12% of them  
were absent one of the  
days. How many workers  
were present?





# Shamva Secondary School



# Email from Shamva

On Fri, 12 Mar 2004, Tatira, Benjamin wrote:

> I extend my warm greetings to you and your loved ones in the US. Here we  
> are fine.  
> Right, one of the fruits of your visit to my school in Shamva has been the  
> birth of a Club, the Technology Club. It is composed of the very pupils  
> that you addressed that time when you came. I am surely happy to be  
> associated with it. Its focus is on Computers and Graphics Calculators as  
> pertaining to Mathematics education. We have a PC for each of the 8  
> members, but only a teacher's TI92 and the school's TI85 for all members.  
> Despite, we have made so much progress both in computers and calculators.  
> I may send more details for the Club if it is necessary. I will also post  
> some of it on the school's website; "www.wadzanai.ac.zw". The boys are  
> quite  
> taken by the experiences they are going through in technology. Most of  
> their  
> mathematics content is covered by the mighty TI92.



# African Cultural Acclimatization

- Tengenenge
- Victoria Falls
- Mana Pools
- Cape Town, SA



# A BEAUTIFUL COUNTRY

- Wonderful Destination
- Unique Terrain
- Farms Everywhere
- Incredible Music
- Talented Artists
- Stone Sculptures





# Tengenenge Artists Colony for Stone Sculpture





# Victoria Falls

ONE OF 7 NATURAL WONDERS OF  
THE WORLD

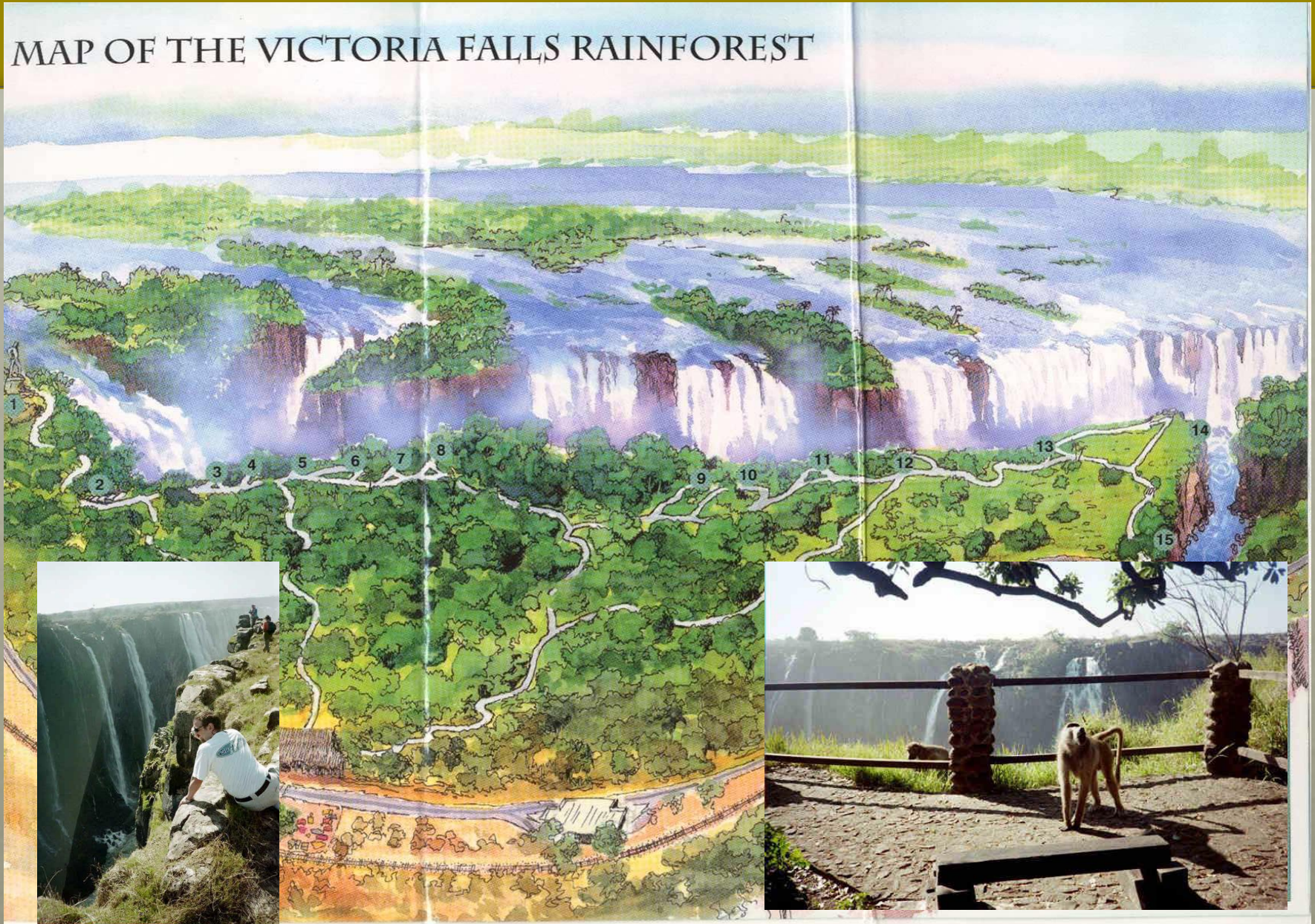




# VICTORIA FALLS

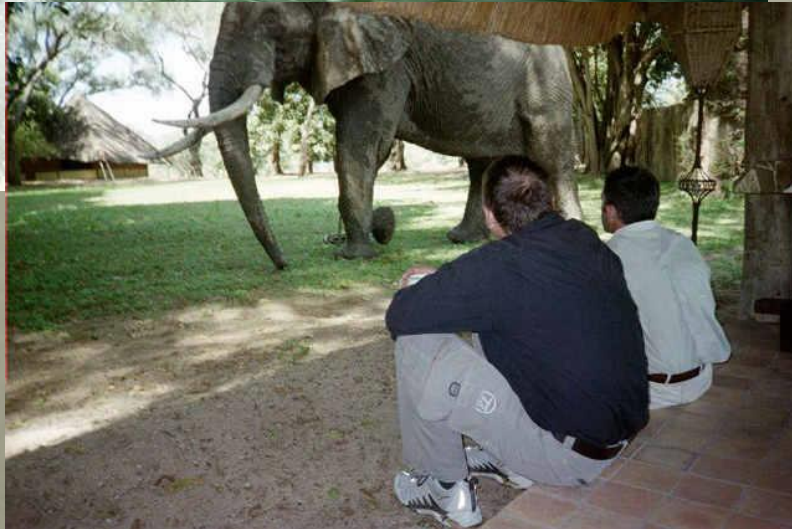
One of the 7 Natural Wonders of the World

MAP OF THE VICTORIA FALLS RAINFOREST





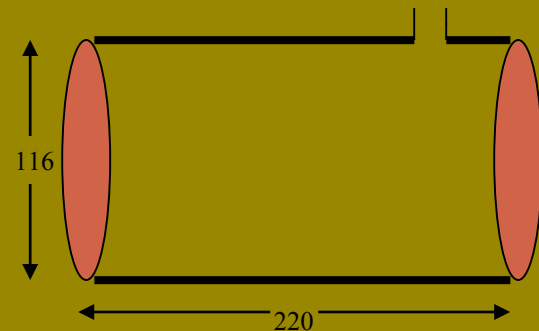
# MANA POOLS NATIONAL PARK





# 'I NEEDED MY TI-83, EVEN WHILE ON THE ZAMBEZI'

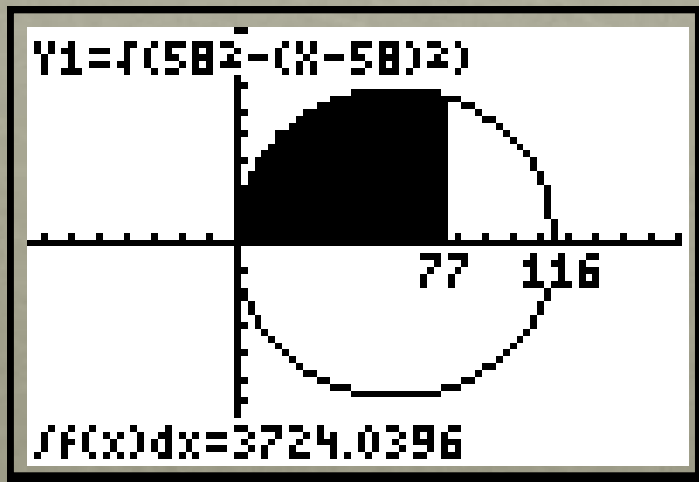
- Safari camp manager asks for help
- The fuel tank has no gauge



- How should the dipstick be calibrated?

# TI – 83 Program and Results

- PROGRAM TANK
- For(A,1,116)
- $\text{fnInt}(\sqrt{(58-(X-58)^2}), X, 0, A) \times 2 \times 220 / 1000 \rightarrow L_1(A)$
- End

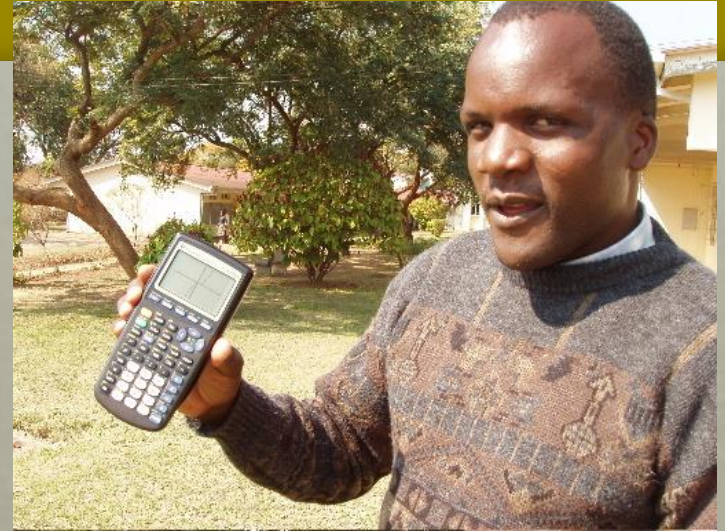


depth	volume		
116	2325	78	1662.6
115	2321.9	77	1638.6
114	2316.1	76	1614.4
113	2308.7	75	1590.1
112	2300	74	1565.6
111	2290.2	73	1541
110	2279.3	72	1516.3
109	2267.6	71	1491.5
108	2255	70	1466.6
107	2241.7	69	1441.5
106	2227.7	68	1416.4
105	2213.1	67	1391.3
104	2197.9	66	1366
103	2182	65	1340.7
102	2165.7	64	1315.4
101	2148.8	63	1290
100	2131.4	62	1264.5
99	2113.6	61	1239
98	2095.3	60	1213.5
97	2076.6	59	1188
96	2057.6	58	1162.5
95	2038.1	57	1137
94	2018.3	56	1111.5
93	1998.1	55	1086
92	1977.6	54	1060.5
91	1956.7	53	1035.1
90	1935.6	52	1009.7
89	1914.2	51	984.3
88	1892.5	50	959
87	1870.5	49	933.8
86	1848.3	48	908.6
85	1825.8	47	883.5
84	1803.1	46	858.5
83	1780.2	45	833.6
82	1757	44	808.7
81	1733.7	43	784
80	1710.2	42	759.4
79	1686.5	41	735
		40	710.6
		39	686.5
		38	662.4
		37	638.5
		36	614.8
		35	591.3
		34	568
		33	544.9
		32	521.9
		31	499.2
		30	476.8
		29	454.5
		28	432.6
		27	410.9
		26	389.4
		25	368.3
		24	347.5
		23	327
		22	306.8
		21	286.9
		20	267.5
		19	248.4
		18	229.7
		17	211.4
		16	193.6
		15	176.2
		14	159.4
		13	143
		12	127.2
		11	111.9
		10	97.3
		9	83.3
		8	70
		7	57.4
		6	45.7
		5	34.9
		4	25
		3	16.3
		2	8.9
		1	3.2



# Thank you for your help.

- We brought TI-83+'s for each attendee and classroom sets to give to the training centers.
- Thank you to Texas Instruments for providing used TI-83+'s
- Thank you to Eveready Batteries for providing AAA batteries
- Thank you to the US Embassy for helping us with shipping the equipment overseas.



# Interested in Creating Your own Project?

What you can do...



# How To Make it Happen:

- Meet teachers from foreign countries by attending international conferences (and attending sessions like this one).
- Offer to come to their schools; they will always say yes!
- Start your planning by contacting the Public Affairs Officer at the US Embassy or Consulate closest to the schools you will visit.

# HOW TO MAKE IT HAPPEN:

- The Embassy Public Affairs Officer can also help to connect you with local schools.
- Collect discarded books, technology, manipulatives, etc. from schools here at home.
- Ship them overseas using the mail/shipping services of the US Embassy.



# How To Make it Happen: FUNDING!

- Go to the web page for Fulbright information.
- The Embassy can help with grants for travel expenses.
- Your district and/or teacher organization may have travel grants.
- Rotary and other civic orgs. have grants for educational & international projects.
- And yes, ask your rich friends and colleagues for help, too.

**Good Luck! Be creative!**

# TEACHING IS A PLEASURE, LET THE PLEASURE BE YOUR'S

- Where will you go?
- What will you do?
- How will it make a difference?
- Who will benefit?





# Some helpful links...

- Peace Corps: [peacecorps.gov](http://peacecorps.gov)
- Fulbright Program: [fulbright.state.gov](http://fulbright.state.gov)
- Department of Defense Dependent Schools: [dodea.edu](http://dodea.edu)
- US Embassies: [usembassy.gov](http://usembassy.gov)



**WHAT ARE YOUR  
EXPERIENCES??**





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stuart@humboldt.edu

Thank you!