Bringing Math & Environment into Culture
Rich World Language Curriculum

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STARTALK-Endorsed Principles for Language Learning & Teaching

• Implementing a Standards-Based and Thematically Organized Curriculum
• Facilitating a Learner-Centered Classroom
• Using the Target Language and Providing Comprehensible Input for Instruction
• Integrating Culture, Content, and Language in a World Language Classroom
• Adapting and Using Age-Appropriate Authentic Materials
• Conducting Performance-Based Assessment
Integration of Language, Culture, and Content: Two Examples

- Springfield Public School (Mass) STARTALK Program—Dr. Mei-Ju Hwang

- Cape Henlopen School District (Delaware) STARTALK Program—Ms. Chiachyi Chiu
Springfield Chinese Dragon’s Math Maze

Learning Math through STARTALK Chinese Immersion Summer Program

Mei-Ju Hwang, Ed. D
Springfield Public Schools, MA
Introduction

• Chinese Language and Culture Immersion Program
• 98 students completed the program in 2011: Grades 1-8 (K-1; 2-3; 4-5; and 6-8)
• 60% from SPS and 40% from neighboring communities
• Non-residential
• 11 days, 6 hours per day
• Teachers, junior aides, technology specialist, martial artist & volunteers
Building & Facilities
Program’s Goal

To create an unique learning environment for students in urban Springfield, MA and neighboring communities to learn math and Chinese, important key skills for the 21st century global economy.
Objectives

• Generate students’ interest in Chinese language and culture
• Provide a unique experiential, culturally enriched, age-appropriate and standard-based learning program
• Improve students’ math skills through meaningful activities in a carefully planned Chinese environment
• Encourage the neighboring communities to offer Chinese
Program Theme:
Chinese Dragon's Math Maze

A mathematics content-based curriculum that fosters interdisciplinary connections
Sample of Can Do Statements

• I can count and write the numbers 1-20 in Chinese.
• I can use abacus to add and subtract using numbers up to 25.
• I can tell what time I come to the camp
• I can measure objects around us and record the measurement in Chinese.
• I can make quantity/size /temperature comparisons in Chinese.
• I can name simple geometric shapes in Chinese.
A Thematically Organized Curriculum

• Unit 1: Let’s discover numbers around us: numbers, size, age, dates and time
• Unit 2: Let’s measure things around us: length, weight, capacity and temperature
• Unit 3: Let’s go shopping: monetary units, value & currency exchange
• Unit 4: Let’s enjoy the beautiful world: shapes and colors
The curriculum units and lesson plans follow:

• Massachusetts Mathematics Learning Standards

• Springfield (MA) Public Schools Mathematics Instructional Guides

• National Foreign Language Standards: 5 Cs and 3 communication modes
Unit 1: Let’s Discover Numbers Around Us

• Lesson 1: Greetings, Class routines, Introduce yourself
• Lesson 2: Number Senses and Operations
• Lesson 3: Dates, Time and Days of the week
Can Do Statements

• I can count and write the numbers in Chinese.
• I can use abacus to operate numbers
• I can calculate fraction and interpret in Chinese
• I can tell what day is today and today’s date
• I can tell what time I come to the camp
A Sidewalk Writer

Math operations
Smart board practice
Unit 2: Let’s Measure Things Around Us

• Lesson 1: Introducing the measuring tools around us: thermometer, rulers, measuring tapes, measuring cups, scales, .....  
• Lesson 2: Measuring things around us: length, weight, capacity & temperature  
• Lesson 3: Create a group project
Can Do Statements

• I can measure objects around us and record the measurement in Chinese.

• I can make quantity/size/height/temperature/speed comparisons in Chinese.
Measurement & Fractions
Unit 3: Let’s go shopping

• Lesson 1: Monetary units and value in China, Taiwan & US; currency exchange

• Lesson 2: Let’s go shopping: Interact with the cashier, clerk, or waiter; Simulate shopping through role play

• Lesson 3: Let’s create a menu for a restaurant
Can Do Statements

• I can tell Chinese monetary units
• I can ask and tell price
• I can calculate how much I spent
• I can make a comment on the price with “tai gui le”
Unit 4: Let’s enjoy the beautiful world: shapes and colors

• Lesson 1: There are beautiful colors everywhere

• Lesson 2: There are different shapes around you

• Lesson 3: Let’s enjoy the beautiful world: shapes, colors and math (sort, count, make a chart, graph....)
Can Do Statements

• I can name different colors in Chinese.
• I can name simple geometric shapes in Chinese.
• I can use tangram shapes to create and name a bird, fish, a house or a picture.
Assessment

• Pre-test & post-test assessment
• I can statements
• Performance based assessment
• LinguaFolio online assessment
Pre- & Post-Test

- Listening comprehension on greetings, classroom expression, etc.
- Math concepts for numbers, colors, shapes, measurement and etc.
Listening Comprehension

1. 你好！
2. 再见！
3. 你叫什么名字？
4. 谢谢！
III. Match the numbers by drawing lines:

五 十 二十 三 十二 二十七 二十五 八

IV. Math Concepts:

1. 现在三点。

V. Math at work:

1. 一加七等于 _______ 十五加三等于 _______

2. 二十减五等于 _______ 九十六减四十等于 _______

3. 二乘三等于 _______ 三十除五等于 _______

4. 十元加五元等于 _______ 八斤减四斤等于 _______
## I Can Statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>On my own</th>
<th>With help</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can make quantity/size comparisons in Chinese.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can use an abacus to add and subtract using numbers up to 25.</td>
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<tr>
<td>I can measure objects around us and record the measurements in Chinese.</td>
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</tbody>
</table>
Performance Assessment:
Dragon Boat Race
Springfield STARTALK Website

http://www.sps.springfield.ma.us/startalk

Springfield Startalk Blog

springfieldstartalk.wordpress.com
Thank you

谢谢！谢谢！

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Delaware

Sea Dragon King
STARTALK Camp

Chiachyi Chiu
Location and Community

- Beach
- Nature center, museum
- Governor’s support
- Community volunteers
- Afterschool Chinese program after STARTALK summer camp

An essential element: IT specialist support
A Student-Teacher Combo Program

• A collaborative effort: Cape Henlopen School District, Delaware Department of Education, University of Delaware

• Student Component:
  – Two weeks for 64 elementary school students (K-5th grade)
  – Two classes with lead instructors
Teacher program
Teacher Component

• Three weeks for 10 in-service and pre-service teachers seeking K-12 certification in teaching Chinese
  – One week training prior to the student program;
  – two weeks practicum
  – One instructor for teacher training and one for practicum

• A program coordinator who was also an IT specialist
Teacher Practicum
Theme: Life at the Seashore

• Enduring Understanding: The ocean is the place that we all need to protect.

• Capitalize on the local surroundings and facilitate connections to target language learning.

• Through instruction delivered only in Chinese, students will learn that the ocean is a place we all must protect, both in Delaware and in China.
Communication Standards: Expected Outcomes

Interpretive
- act out in a short skit based on the Sea Dragon King Story and other stories about marine lives that teacher read.
- Answer questions related to a story about coastal area.

Interpersonal
- Take on the role of their sea creature and interview each other about the information they have learned and written on their posters.

Presentational
- Identify and describe important sea creatures and plants using basic sentence patterns.
- Discuss environmental issues related to these resources using simple cause-and-effect statements.
An Example:
Interpersonal communication
Cultural Standards: Expected Outcomes

Cultural Practices
- Fan dance
- Chinese Yo-Yo
- Gong Fu

Products
- origami
- Calligraphy
- Spring rolls
- Quilt

Perspectives
- understand the Chinese notion about the relationship between people and nature, using the example of a Shanshui painting.
We love learning Chinese gongfu!
Chinese Yo-Yo is fun!
I know how to make an origami crab.
我会做螃蟹。
Look at my beautiful calligraphy!
The quilt we made: Save the Ocean
Connection, Comparison, & Community Standards: Expected Outcomes

**Connections**
- understand the role of natural resources found in coastal areas and their impact on human life.

**Comparisons**
- Compare real and legendary sea creatures found in Chinese and American societies.
- Compare beach activities people do in China and in Delaware.
- Compare environmental protection efforts done at the beaches at Lewes and in Shanghai.

**Community**
- make a pledge in front of their family and community members about changing behaviors in daily life as an effort to protect the ocean
<table>
<thead>
<tr>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
<th>Unit 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>What can I learn about the ocean through myths and legends?</td>
<td>What’s in the Ocean?</td>
<td>What do people do at the beach? What can I find at the beach? Why is water important in our life?</td>
<td>How does the ocean affect our lives both in Delaware and in China? How do my actions affect the ocean?</td>
<td>What can I do to protect the ocean?</td>
</tr>
</tbody>
</table>
Unit 1: What can I learn about the ocean?

myths and legends

Sea Dragon King

Sun Wu-Kong story

China
Unit 2: What’s in the Ocean?

- Sea life
  - Body parts
  - Sea creatures
  - Numbers
  - Sizes
  - Colors
  - I have...
  - I like...
I can count in Chinese. It’s fun!
We learned about body parts and created a monster with 4 eyes and 9 legs!
I know how to say and write "big and small".
See how small I can be.
I can use chopsticks to eat different colors of M&M. Yummy. 😊
Unit 3: What do people do at the beach? Why is water important in our life?
We are **swimming** in the ocean.
I know how to crawl like a crab.
This is the way we wash our clothes.
Unit 4: How does the ocean affect our lives both in Delaware and in China? How do my actions affect the ocean?

Compare Lewes and Shanghai

Maps

Weather

Sea creatures

Activity at the beach
shàng hǎi
上海
上海没有马蹄蟹

莱斯特有马蹄蟹

莱斯特没有马蹄蟹
Měi guó rén xǐ huān diào yú.
美国人喜欢钓鱼。

Zhōng guó rén yě xǐ huān diào yú.
中国人也喜欢钓鱼。
Unit 5: What can I do to protect the ocean?

Save the ocean

I will...

Reduce

Recycle

Reuse
Reuse the things we found on the beach to make artwork.
Reuse things we found at home to make artwork.
Let’s save the ocean!
We signed a pledge to protect our ocean!
## I Can Statement

<table>
<thead>
<tr>
<th>I CAN…</th>
<th>Yes</th>
<th>Not Yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand and follow basic classroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>expressions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Say my favorite sea animal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Say my favorite color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Say my favorite beach activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## I Can Statement

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<tr>
<th>I CAN…</th>
<th>Yes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Suggest 3 things that can be reduced, reused, or recycled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggest 1 way to protect the ocean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sing 3 Chinese songs (greeting song, weekday song, color song, the way we wash our faces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use iPad to make my little book</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parents and community members were invited to the Sea Dragon Chinese Summer Camp Celebration!
Let’s make eggrolls for our family!
我有二个水母
我有十章鱼。
我喜欢蓝色
我喜欢海豚
Samuel and Emily singing Head, Shoulders Song
A Big Performance!
Other Special Features

- Family and community involvement
- Use I-Pad from Day 1
- Smart board
- Seaside Nature Center at Cape Henlopen State Park
We love eating cookies. Thanks, Bella!
Chinese food is delicious, but you have to speak Chinese to get it!
I can type Chinese on iPad!
我会做鲸鱼。
We can write Chinese characters on iPad!
Working on my “I can” statement on iPad.
Guest Visitors from the Nature Center
We learned so much about horseshoe crab. Do you know it has 10 eyes?!
Fieldtrip to the Nature center and the Beach
We caught a puffer fish!
We learned how to say horseshoe crab, blue crab, and fish, so we can say hello to them in Chinese.
Yummy lunch on the Beach!
Field trip is so much fun!
And we do all of these in CHINESE!
Thank you for listening to our story!
谢谢！ Thank you

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