Engineering is Elementary®
Just Passing Through: Designing Model Membranes

Repurposed for Mandarin immersion by the Minnesota Mandarin Immersion Collaborative (MMIC)
MMIC Engineering is Elementary® "Model Membrane" Unit

Lesson Summary Chart

Science Topic: Organisms (Bess Beetle, Crayfish), Basic Needs
Engineering Field: Bioengineering
Storybook (Cultural Context): *Juan Daniel's Fútbol Frog* (El Salvador)
Immersion Model: Early Total
Grade Level: 3

MMIC Engineering is Elementary® "Model Membrane" Unit Lesson Summary Chart

<table>
<tr><th>1</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>Prep Lesson: Engineering and Technology

*Associated with EiE® Prep Lesson</td><td>160 minutes</td><td rowspan="4">• Analyze structure of characters to infer meaning of words such as "engineering," "technology," and other professions</td><td rowspan="4">• Analyze everyday objects by type of material and use/function
• Classify everyday objects as natural and human-made
• Hypothesize about the object in the mystery bag (material made of, problem it solves)
• Recognize "technology" as everyday objects made by people to solve a problem or meet a need
• Justify concept of "technology" with examples and non-examples in daily life
• Define the role of an engineer in the world
• Recognize a relationship between "engineering" and nearly everything we use, work with, or wear

Math Objectives</td><td rowspan="4">• Classify pictures of workers from three types of professions: engineers, technicians, artisans
• Give reasons for classification decisions
• Recognize that the ancient Chinese also used technology to solve problems and meet basic needs with objects such as chopsticks, the paperweight and the Chinese writing/painting brush.</td></tr>
<tr><td colspan="2">Lesson Topic</td></tr>
<tr><td colspan="2">What are engineering and technology?</td></tr>
<tr><td colspan="2">Evidence of Learning</td></tr>
<tr><td colspan="2">• Completed handouts:
  • MMIC 1-1: Who is the engineer?, one per group
  • MMIC 1-3 (adaptation of Technology Around Us, EiE® {P-1}), one per group
  • MMIC 1-4: (adaptation of Working with Technology, EiE® {P-2}), one per student
• Observation of participation in large and small-group activities</td></tr>
<tr><td colspan="3">Chinese Language Objectives (CO)</td><td colspan="3">Chinese Language Objectives (CC)</td></tr>
<tr><td colspan="3">• State or identify what/who something is or is not
• Support ideas/opinions using compound sentences with adverb 因此
• Describe attributes of something/someone using nominalization within a 是 ….的 sentence structure
• Identify and construct semantic radicals as separate characters or as part of another character
• Describe attributes of something/someone using a predicative adjective(s) construction with the main noun modified by a relative clause
• State use/function of something using nominalization and purpose verb phrase, 来 + verb + object
• Distinguish between the roles and responsibilities of various professionals</td><td colspan="3">• Express a personal opinion and request agreement
• Express agreement/disagreement</td></tr>
</table>

2	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives

"Game Day"
 	
*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 1
	230 minutes	• Use story pictures to infer and make predictions about the story *Juan Daniel*
		• Synthesize inferences from two pictures and report summary predictions
		• Give reasons for inferences and predictions
		• Listen for key words and relevant information
		• Confirm/disconfirm predictions
		• Generate and answer literal questions to demonstrate understanding of story characters and setting as presented in Chapter 1
		• Write a sentence in the past tense about events of Chapter 1
			• Analyze everyday objects by type of material and use/function
			• Classify everyday objects as natural and human-made
			• Hypothesize about the object in the mystery bag (material made of, problem it solves)
			• Recognize "technology" as everyday objects made by people to solve a problem or meet a need
			• Justify concept of "technology" with examples and non-examples in daily life
			• Define the role of an engineer in the world
			• Recognize a relationship between "engineering" and nearly everything we use, work with, or wear
			
			Math Objectives
			
			• Compare and contrast the population and size of El Salvador, US, and China using appropriate units of measurement
				• Recall what they know and identify what they want to know about the country of El Salvador in the following categories: geography, climate, food, sports
				• Make predictions about El Salvador, Salvadoran people and culture
				• Make cross-cultural connections between El Salvador, US and China
				• Use map reading vocabulary and skills (map title, map key or legend, cardinal rose, map scale, latitude and longitude, equator)
				  • to locate a country (El Salvador/US/China) and its coordinates
				  • to identify a variety of geographic features
				  • to make comparisons between location of Minnesota, El Salvador and China (proximity to equator, continent, nearby ocean(s), etc.)
				• Estimate size of these countries by using a map scale and measuring length and height of approximate country "rectangle" (**Challenge activity)

Lesson Topic Exploring the cultures and geography of El Salvador				

Evidence of Learning
 	
• Completed handouts:
  • MMIC 2-2: *Look, Think, Guess*
  • Student-created Venn diagram or Double Bubble
  • MMIC 2-5: *Key Word Summary*
  • MMIC 2-6: *Chapter 1: Reading for Meaning*
  • MMIC 2-7: *The Common Language of Maps*
  • MMIC 2-8A and B: *Map of El Salvador*
  • MMIC 2-9: *Learning with Maps*
• Informal observation of cross-cultural chart discussion				

2 "Game Day"

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 1

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Make inferences based on visual clues • Support ideas/opinions using compound sentences with adverb 因此 • Identify similarities and differences between two things using topic as noun/verb phrase at sentence beginning • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Identify and construct semantic radicals as separate characters or as part of another character • State or identify what/who something is or is not • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Describe attributes of persons/places/things using modifying phrases • Ask and answer questions using question words • Express location using 在 [zài] in a locative phrase	• Express agreement/disagreement • Negotiate to reach consensus • Accept feedback/advice/idea • Ask for clarification about feedback/advice/idea • Negotiate turn-taking

3	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
"Benched" *Associated with EiE® *Juan Daniel's Fútbol Frog*, Chapter 2	190 minutes	• Accurately interpret character meaning and select answers to multiple choice questions about Chapter 1 using known and new vocabulary about the story setting, characters and events • Skim and scan Chapter 1 story text for specific information in support of multiple choice answers • Match written characters with visuals and oral text of new soccer vocabulary • Interpret meaning of new soccer-related vocabulary from video of soccer game • Listen selectively for words and phrases that relate to or describe *El Imposible* and "el campo de fútbol" and write the words using characters or pinyin as needed in a T-chart • Demonstrate comprehension of teacher read-aloud by sequencing a series of action pictures • Listen selectively to check accuracy of listening comprehension skills • Read for meaning • Match a series of sentence strips to corresponding action pictures • Retell main events, including narrative elements: characters, setting, problem-solution, and a variety of sequencing words and phrases for the main story events	• Apply understanding of the "basic needs" of living things to different contexts by identifying "basic needs" of a soccer game (e.g., goal, soccer field, team, players, captain, goalie, ball, etc.), a student (e.g., pencil, markers, paper, books, backpack, etc.), and a baby (caregiver, water, milk, blanket, diaper, pacifier, etc.) • Make predictions about the relationship between living things (animals, insects, plants) and their environment (rain forest, desert, tropical, etc.) • Become familiar with the rain forest environment, its animals/insects/plants, and their habitat **Math Objectives**	• Distinguish the geographic and climatic differences between "rain forest" and "a hot, dry place" and give the reasons why certain kinds of animals, plants and insects live in these areas • Use background knowledge to describe geography and climate of Minnesota/US and make connections between known and new examples of national parks/ rain forests in the US, China and El Salvador's *El Imposible* rain forest preserve • Expand cultural understanding El Salvador (geography, climate, food, sports)
Lesson Topic The basic needs of players in a soccer game				
Evidence of Learning • Oral responses to the multiple choice activity reviewing *Juan Daniel*, Chapter 1 • Matching characters and pictures in the soccer bag vocabulary activity • Oral responses matching insects and animals to their habitats • Oral contributions to the T-chart discussion comparing *El Imposible* and "el campo de fútbol" • Correct sequencing of picture cards and sentence strips • Oral retelling of Chapter 2 using story pictures (card game)				

3 "Benched"

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 2

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Recognize and interpret characters that form words and phrases adhering to character structure rules and stroke order guidelines • Recognize and interpret semantic radicals as separate characters or as part of another character • State or identify what/who something is or is not • State use/function of something using purpose verb phrase, 来 + verb + object • Express location using 在 [zài] in a locative phrase • State or identify attributes of something using predicative adjective(s) construction • State or identify attributes of something/someone using a predicative construction with the main noun modified by a relative clause • Support ideas/opinions using compound sentences with adverb 因此 • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Order a series of events using sequencing adverbs	• Express a personal opinion • Express a personal opinion and request agreement • Express agreement/disagreement • Ask for clarification about feedback/advice/idea • Negotiate turn-taking

<table>
<tr><th>4</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>“A Fútbol Frog”

*Associated with EiE® story Juan Daniel’s Fútbol Frog, Chapter 3</td><td>135 minutes</td><td rowspan="3">• Correctly identify text genre and structural elements (setting, characters, problem, solution)
• Skim and scan Chapter 2 Juan Daniel story text for specific information
• Apply knowledge of structural elements of narrative and skimming and scanning skills to demonstrate comprehension of Juan Daniel Chapter 2
• Identify main ideas with key-words/phrases from Juan Daniel Chapter 3
• Demonstrate comprehension of Juan Daniel Chapter 3 read-aloud by orally responding to questions
• Demonstrate comprehension of Juan Daniel Chapter 3 by using key-words/phrases for retelling the main chapter events in sequence</td><td rowspan="3">• Analyze characteristics, behaviors and basic needs of a frog and a soccer player using a compare/contrast chart or tree map
• Identify commonalities in characteristics, behaviors and basic needs of a frog and a soccer player
• Orally recall characteristics and basic information about rain forests

Math Objectives</td><td rowspan="3">• Compare El Salvador, Minnesota and China’s capital cities, sports idols, and rain forests</td></tr>
<tr><td colspan="2">Lesson Topic</td></tr>
<tr><td colspan="2">What does a fútbol frog have in common with Juan Daniel?</td></tr>
<tr><td colspan="2">Evidence of Learning</td><td colspan="3"></td></tr>
<tr><td colspan="2">• Completed handouts:
  • MMIC 4-1a: Living Things Compare/Contrast Chart or MMIC 4-1b: Living Things Tree Map
• Oral responses to Chapter 2 comprehension questions
• Informal observation of discussion of additions to cross-cultural wall chart
• Oral responses to Chapter 3 comprehension questions
• Written key words on post-its
• Use of sequencing words and key words in the oral retell of Chapter 3</td><td colspan="3"></td></tr>
</table>

4 "A Fútbol Frog"

*Associated with EiE® story *Juan Daniel's Fútbol Frog,* Chapter 3

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Ask and answer questions using question words • Express location using 在 [zài] in a locative phrase • Describe attributes of person/place/thing using modifying phrases • Describe emotional states of main characters using adjectives or adverbs • Describe actions of main characters using verb + resultative complements (directional) • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Describe attributes of something/someone using a predicative adjective(s) construction with the main noun modified by a relative clause • Order a series of events using sequencing adverbs • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence	• Express a personal opinion • Express agreement/disagreement • Negotiate to reach consensus

<table>
<tr><th>5</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>Pre-Reading for “A Helpful Visit”

*Associated with EiE® story Juan Daniel’s Fútbol Frog, Chapter 4</td><td>120 minutes</td><td rowspan="5">• Recall main events of a story
• Read and comprehend written statements about the basic needs of humans/frogs/ crayfish/Bess beetles and the different ways each organism meets those needs</td><td rowspan="5">• Identify the match between descriptive statements to organism described
• Identify the responsibilities of scientists and biologists
• Identify the responsibilities of engineers

Math Objectives</td><td rowspan="5">• Distinguish between the roles and responsibilities of various professional community members, e.g., an engineer, a bioengineer and a scientist
• Compare and contrast the roles and responsibilities of several story characters and professionals such as biologist, engineer, teacher, etc.</td></tr>
<tr><td colspan="2">Lesson Topic</td></tr>
<tr><td colspan="2">Making connections between the Juan Daniel story characters and their jobs and the basic needs of humans and animals in preparation for reading Juan Daniel, Chapter 4 during Lesson 6</td></tr>
<tr><td colspan="2">Evidence of Learning</td></tr>
<tr><td colspan="2">• Oral responses to “Numbered Heads Together” questions about Juan Daniel, Chapters 2-3
• Correct matches and use of Mandarin only in the people + what they do activity
• Oral contributions to the basic needs chart discussion
• Correct matches and use of Mandarin only in the Four Corners activity
• Oral reporting of Four Corners statements of how each animal meets its basic needs</td></tr>
</table>

5 Pre-Reading for "A Helpful Visit"

*Associated with EiE® story *Juan Daniel's Fútbol Frog,* Chapter 4

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Ask and answer questions using question words • Express location using 在 [zài] in a locative phrase • Describe attributes of person/place/things using modifying phrases • State use/function of a thing or an action using purpose verb phrase, 来 + verb + object • Describe emotional states of main characters using adjectives or adverbs • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • State or identify what/who something is or is not • Describe attributes of something/someone using a predicative adjective(s) construction with the main noun modified by a relative clause • Recognize and interpret characters that form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • State use/function of something using nominalization and purpose verb phrase, 来 + verb + object • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Support ideas/opinions using compound sentences with adverb 因此	• Express a personal opinion and request agreement • Express agreement and disagreement • Negotiate to reach consensus • Negotiate turn-taking

6	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
"A Helpful Visit" *Associated with EiE® story *Juan Daniel's Fútbol Frog,* Chapter 4	155 minutes	• Actively listen for the main idea in a text • Summarize with one written sentence the main idea in a text • Infer meaning of complex vocabulary	• Observe the visible characteristics of various biological membranes • Identify the properties and functions of a membrane • Compare properties of 4 common household objects to the properties of a natural membrane • Make connection between the property of "blocking" in membranes and the act of "blocking" in soccer • Co-construct a definition of the concept of "membrane" • Infer the meaning of "anti microbial properties," "bacteria," "viruses," and "vaccines" • Recognize the discovery of "antimicrobial properties" (science) and the later invention of "vaccines" (bioengineering) as an example of bioengineering technology that helps people solve health problems	• Identify cultural symbols, practices and perspectives of luck in El Salvador, China and the US
Lesson Topic Defining "membrane" and summarizing Chapter 4			**Math Objectives**	
Evidence of Learning • Highlighted key words and phrases from *Juan Daniel*, Chapter 4 • Completed Circle Map of "membrane" • Oral co-construction of the definition of "membrane" • Class definition of "membrane" recorded in science journal • Completed handouts: • MMIC 6-1: *Describing 6 Objects* • Oral sentence summaries of six sections of *Juan Daniel,* Chapter 4 • Written sentence summaries of six sections of *Juan Daniel*, Chapter 4 • Whole-class written summary of *Juan Daniel*, Chapter 4 • Informal observation of cross-cultural chart discussion of symbols of luck • Role-play performance of *Juan Daniel*, Chapter 4				

6 "A Helpful Visit"

*Associated with EiE® story *Juan Daniel's Fútbol Frog,* Chapter 4

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Identify similarities and differences between two things using topic as noun/verb phrase at sentence beginning • State use/function of something using purpose verb phrase, 来 + verb + object • Predict degree of probability of something using auxiliary "helping" verbs • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Describe attributes of person/place/thing using modifying phrases • State or identify what/who something is like/ is not like using a stative verb phrase 像……一样 • Support ideas/opinions using compound sentences with adverb 因此 • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Recount events using action verbs and dependent time phrase/clause in complex sentenced • Report events in past time using adverbs of time • Describe actions of main characters using verb + resultative complements (directional) • Distinguish the superlative degree among two or more things/ideas within a topic using a locative phrase 在…里/在…中 to identify the whole topic, and the superlative verb 最 • Identify and construct semantic radicals as separate characters or as part of another character • Order a series of events using sequencing adverbs	• Express a personal opinion • Ask for clarification about feedback/advice/idea • Negotiate turn-taking • Express a personal opinion and request agreement • Express agreement/disagreement • Accept feedback/advice/idea • Give a command using serial verb construction • Give an example • Negotiate to reach consensus

7	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
Biology Meets Technology *Associated with EiE® *Lesson* 2	190 minutes	• Recall and use story text to define character traits • Skim and scan paragraphs for specific information	• Recall information about the basic needs of humans, frogs, crayfish, and Bess beetles • Identify the functions of familiar animal body parts and plant structures • Become familiar with tropical rain forest animals, insects, mammals and plants • Distinguish between objects found in the natural world and those designed by humans • Compare and contrast the functions of objects found in the natural world with human-designed technologies • Recognize that bioengineers look to the natural world to get ideas for technologies that they design • Recall features of "technology" as previously discussed in Prep Lesson 1	• Compare and contrast functions of several common objects used in the US and China
Lesson Topic Comparing and contrasting the natural world with human-made technology			**Math Objectives**	
Evidence of Learning • Oral exchanges role-playing rain forest animals, body parts and their functions using picture cards • Oral contributions to the co-construction of the definition of "technology" • Correct matches and use of Mandarin in the matching card activity • Completed handout: • MMIC 7-3: *Technology Match-Up Homework*				

7 Biology Meets Technology

*Associated with EiE® *Lesson* 2

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Identify something using numbers and appropriate classifiers • State use/function of something using nominalization and purpose verb phrase, 来 + verb + object • State use/function of a thing or an action using purpose verb phrase, 来 + verb + object • State or identify what/who something is or is not • Describe attributes of something/someone using nominalization within a 是 ….的 sentence structure • Describe attributes of something/someone using a predicative construction with the main noun modified by a relative clause • Express location using 在 [zài] in a locative phrase • Identify similarities and differences between two things using topic as noun/verb phrase at sentence beginning • Support ideas/opinions using compound sentences with adverb 因此 • Ask and answer questions using question words	• Express agreement/disagreement

8	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
"A Trip to the Rain Forest" *Associated with EiE® story *Juan Daniel's Fútbol Frog*, Chapter 5	160 minutes	• Discriminate between Chapter 4 event statements as true or false • Rewrite false statements to be true • Co-construct questions about what might happen in Chapter 5 • Use listening and reading comprehension skills to comprehend main events from Chapter 5 • Use context and character structure analysis to infer meaning of unfamiliar words • Use glossaries to understand meaning of new words • Generate and answer literal and inferential story questions	• Analyze role of the five senses as tools for identifying characteristics of rain forests • Acquire vocabulary associated with a particular ecosystem (rain forest) • Analyze the role of the five senses as tools for solving everyday problems • Recognize how observation of natural environments can inform human-made biotechnologies • Distinguish water as friend or foe of living organisms **Math Objectives** • Calculate the relative percentage or fraction of El Salvador and of China that is rain forest	• Identify the national birds of El Salvador, the US and China
Lesson Topic Taking a trip to the rain forest				

Evidence of Learning
 	
• Completed handouts:
  • MMIC 8-1: *Chapter 4 True-False*
  • Student-created Bubble Map about the rain forest
• Prediction questions for *Juan Daniel*, Chapter 5, written on index cards
• Oral contributions to the "Water: Friend or foe?" Double Bubble Map
• Color-coded words and phrases highlighted in each paragraph of Chapter 5, identifying the feature of the rain forest (noun) that is the focus of the paragraph, the words and phrases that tell more about the feature of the rain forest (adjectives), and the senses-related words that are in the paragraph
• Informal observation of cross-cultural chart discussion
• Written additions to cross-cultural chart (national birds)				

8 "A Trip to the Rain Forest"

*Associated with EiE® story *Juan Daniel's Fútbol Frog*, Chapter 5

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Recount events using action verbs and dependent time phrase/clause in complex sentence • Ask and answer questions using resultative complements • Describe attributes of person/place/thing using modifying phrases • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Support ideas/opinions using compound sentences with adverb 因此 • Predict degree of probability of something using auxiliary "helping" verb • Ask and answer questions using question words • State approximate amount of a country's land area that is rain forest using fractions with units of measurement or relative percentages • Order a series of events using sequencing adverbs • Give reasons for actions/choices/preferences using preposition 为了	• Negotiate turn-taking • Express a personal opinion and request agreement • Make inferences based on visual clues • Express agreement/disagreement • Negotiate to reach consensus

9	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
Exploring Membranes, Part 1 *Associated with EiE® Lesson 3, Part 1	195 minutes	• Call attention to word relationships: synonyms and antonyms	• Compare and contrast how some organisms meet their basic needs of air, water, food, and shelter • Identify and relate steps of the Scientific Method to learning about raisin skin • Recall the concepts and characteristics of "membrane" • Identify examples and non-examples of a membrane • Distinguish features, characteristics and functions of a natural membrane • Classify a raisin's properties under three categories: texture, color and size • Observe and describe the properties and functions of a natural membrane: raisin skin	
Lesson Topic				
Exploring the properties of biological membranes				
Evidence of Learning			**Math Objectives**	

• Completed handouts:
  • MMIC 9-1: *True-False Listening Comprehension Charts*
  • MMIC 9-3: *Membrane: Fill in the Blanks*
  • MMIC 9-5: *Describing Raisins*
  • MMIC 9-6 (EiE® {3-1}): *Exploring Membranes: Raisin Skin*
• Written compare and contrast sentences for review of four basic needs and participation in oral presentation and identification of false statements
• Oral contributions to the "Can I pass Through?" interactive game about membranes
• Oral comparisons of Raisins 1-4 using comparative and superlative structures
• Science notebook entries
• Oral contributions to the discussion comparing human fingers and raisins that have been soaked in water				

9 Exploring Membranes, Part 1

*Associated with EiE® Lesson 3, Part 1

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• State a contrast using contrastive clauses and adverbs of quantity or frequency • Make comparison between two things using "A + 比 (comparison marker) + B + (更) + adjective" structure • State use/function of something using nominalization and purpose verb phrase, 来 + verb + object • Support ideas/opinions using compound sentences with adverb 因此 • State or identify what/who something is like/is not like using a stative verb 像……一样 construction • State or identify what/who something is or is not like • Ask and answer questions using question words • Describe attributes of person/place/thing using modifying phrases • State a contrary outcome using compound sentences with adverbial connectors 虽然/尽管 (although/even though)，但是/可是 (but/still) • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Predict cause-effect relationship using hypothetical conditional sentence structure with 如果/要是……, (那么)…… and the adjectival verb 可能 • Distinguish the superlative degree among two or more things/ideas within a topic using a locative phrase 在…里/在…中 to identify the whole topic, and the superlative adverb 最	• Express agreement and disagreement • Use interjections • Negotiate to reach consensus • Give an example

<table>
<tr><th>10</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>“Modeling a Membrane”

*Associated with EiE® story Juan Daniel’s Fútbol Frog, Chapter 6</td><td>240 minutes</td><td rowspan="3">• Summarize a story’s setting, characters, and problem
• Write a statement about membranes
• Make predictions about Juan Daniel, Chapter 6
• Demonstrate reading comprehension by answering literal, inferential, and interpretive questions
• Skim and scan Juan Daniel, Chapter 6 for information about the Engineering Design Process
• Identify correct usage and functions of punctuation such as period, question marks, quotation marks, and exclamation points</td><td rowspan="3">• Relate the Scientific Method to the raisin experiment
• Sequence the steps of the Engineering Design Process
• Compare and contrast the Scientific Method and Engineering Design Process
• Relate the five steps of the Engineering Design Process to a series of events described in Juan Daniel, Chapter 6
• Identify characteristics of “model”
• Define “model”
• Use a compare-contrast chart to organize key information

Math Objectives</td><td rowspan="3">• Compare cultural practices for greeting and leave-taking in El Salvador, the US and China
• Understand how to use a well and carrying vessel (tecomate or 葫芦)
• Explain the importance of water conservation in El Salvador
• Compare water carrying vessels across Chinese, Salvadoran, and US cultures</td></tr>
<tr><td colspan="2">Lesson Topic</td></tr>
<tr><td colspan="2">Learning about the engineering design process, the scientific method, and Juan Daniel’s engineering design process</td></tr>
<tr><td colspan="2">Evidence of Learning</td><td colspan="3"></td></tr>
<tr><td colspan="2">• Completed handouts:
  • MMIC 10-2: Chapter 5 Summary Paragraph
  • MMIC 10-4: Chapter 6 Paragraph on the Engineering Design Process
  • MMIC 10-5: Juan Daniel and the Engineering Design Process
• Oral contributions to the “Scientists/Engineers” Compare-contrast chart discussion
• Oral answers to Juan Daniel, Chapter 6 comprehension questions
• Oral contributions to brainstorming of possible materials for model membranes
• Informal observation of cross-cultural chart discussion</td><td colspan="3"></td></tr>
</table>

10 "Modeling a Membrane"

*Associated with EiE® story *Juan Daniel's Fútbol Frog*, Chapter 6

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Identify and construct semantic radicals as separate characters or as part of another character • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Ask and answer questions using question words • Give reasons for actions/choices/preferences using preposition 为了 • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Order a series of events using sequencing adverbs • Describe attributes of person/place/thing using modifying phrases • Predict degree of probability of something using auxiliary "helping" verbs • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Support ideas/opinions using compound sentences with adverb 因此 • State purpose/function of a thing or an action using purpose verb phrase 来 + verb + object • State use/function of someone using nominalization and purpose verb phrase, 来 + verb + object • State or identify what/who something looks like • Recognize and interpret semantic radicals as separate characters or as part of another character	• State or identify what/who something is or is not • Express a personal opinion and request agreement • Express agreement/disagreement • Negotiate to reach consensus • Make inferences based on visual clues • Ask for clarification about feedback/advice/idea • Negotiate turn-taking • Give an example

<table>
<tr><th>11</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>Exploring Membranes, Part 2

*Associated with EiE® Lesson 3, Part 2</td><td>195 minutes</td><td rowspan="5">• Analyze and apply morphological knowledge about characters to infer the meaning of unfamiliar characters
• Use character writing skills and knowledge of pinyin to predict new vocabulary
• Apply writing skills to record findings and observations in science notebooks
• Synthesize information from a concept map to construct a definition</td><td rowspan="5">• Describe the properties and functions of a natural membrane
• Identify similarities among properties of a natural membrane and certain household objects
• Give examples and non-examples of a “model”
• Predict, observe, analyze and compare the performance of six model membrane materials
• Construct reasonable explanations based on evidence
• Recognize the relationship between a model/engineer and an experiment/scientist
• Identify specific steps in the Engineering Design Process
• Observe, maintain records and monitor an engineering activity

Math Objectives</td><td rowspan="5"></td></tr>
<tr><td colspan="2">Lesson Topic</td></tr>
<tr><td colspan="2">Exploring materials that could be used to make model membranes</td></tr>
<tr><td colspan="2">Evidence of Learning</td></tr>
<tr><td colspan="2">• Completed handouts:
  • MMIC 11-1: Frayer Model Concept Map
  • Venn Diagram or Double-Bubble map
  • MMIC 11-2: Model Membrane Materials Mystery Bag
  • MMIC 11-3 (EiE® {3-3}): Testing Model Membrane Materials
• Correct matches of testing materials to their characters
• Completed science notebook entry</td></tr>
</table>

11 Exploring Membranes, Part 2

*Associated with EiE® Lesson 3, Part 2

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • State use/function of something using nominalization and purpose verb phrase, 来+ verb + object • State an analogy using preposition/coverb "对" (to) and parallel "A + B" structure • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Describe attributes of person/place/thing using modifying phrases • Describe attributes of something/someone using nominalization within a 是 ….的 sentence structure • State or identify attributes of something/someone using a predicative construction with the main noun modified by a relative clause • State or identify what/who something is like/ is not like using a stative verb phrase 像……一样 • Identify a design constraint • Predict degree of probability of something using auxiliary "helping" verbs • State quantities of materials using numbers and appropriate classifiers	• State or identify what/who something is or is not • Support ideas/opinions using compound sentences with adverb 因此 (as a result, therefore) • Express agreement/disagreement • Negotiate to reach consensus • Make a request using different degrees of politeness • Make inferences based on visual clues • Give an example

12	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives

Designing a Model Membrane
 	
*Associated with EiE® Lesson 4, Part 1
	220-230 minutes	• Retell key elements of a story
		• Apply writing composition skills
			• Apply scientific understandings gained through prior analyses of natural membrane properties (raisin skin experiment) and properties of model membrane materials (testing materials experiment) to design of a model membrane
			• Implement the steps of the Engineering Design Process
			  • "Imagine" model membrane designs and select one design to "create" and "test"
			  • Select materials for a model membrane design
			  • Draw and label a model membrane design plan with detailed diagrams and materials lists
			  • "Create" and test model membrane designs using established criteria
			• Offer a rationale for model membrane design, specifically referencing the quantities and properties of testing materials	

Lesson Topic				
Designing a model membrane using knowledge of the properties of membranes, the properties of model membrane materials, and the Engineering Design Process				
Evidence of Learning			**Math Objectives**	

• Completed handouts:
  • MMIC 12-2 (EiE® {4-4}): *Designing a Model Membrane: Ask!*
  • MMIC 12-3 (EiE® {4-5*}): Designing a Model Membrane: Imagine!*
  • MMIC 12-4 (EiE® {4-6}): *Designing a Model Membrane: Plan!*
• Oral contributions to story retell using pictures from Chapters 1-6 from *Juan Daniel*
• Oral contributions to "Show and Tell" with model membrane materials and review of the findings from the testing materials experiment
• Use of Mandarin only in small group work
• Oral description of the group's completed model to the teacher
• Oral description and explanation of the group's completed model to a partner
• Completed science notebook entry
			• Apply knowledge of decimals/fractions and measuring units to report water volume
			• Identify that cup and milliliter are different measuring units of liquid volume	

12 Designing a Model Membrane

*Associated with EiE® Lesson 4, Part 1

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Ask and answer questions using question words • Describe attributes of person/place/thing using modifying phrases • Describe emotional states of main characters using adjectives or adverbs • Express location using 在 [zài] in a locative phrase • Recount events in past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Describe actions of main characters using verb + resultative complements (directional) • State use/function of something using nominalization and purpose verb phrase, 来 + verb + object • Order a series of events using sequencing adverbs • Support ideas/opinions using compound sentences with adverb 因此 • Report about things, actions, or events in past time using action verbs with 了 (temporal marker) and adverbs of time • Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是 ……, (那么)…… and the adjectival verb 可能 • State quantities of materials using numbers and appropriate classifiers • Suggest an alternative idea using serial verb construction with pivotal noun phrase • Predict degree of probability of something using auxiliary "helping" verbs • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Distinguish the superlative degree among two or more things/ideas within a topic using a locative phrase 在…里/在…中 to identify the whole topic, and the superlative adverb 最 • Make comparison between two things using A + 比 (comparison marker) + B + (更) + adjective structure • Give reasons for actions/choices/preferences using preposition 为了 • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text	• Make inferences based on visual clues • State or identify what/who something is or is not • Express a personal opinion • Express agreement/disagreement • Report events in past time using adverbs of time • Ask for clarification about feedback/advice/idea • Make a request using different degrees of politeness • Give a command using serial verb construction • Negotiate to reach consensus

13	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
Exploring Membranes *Associated with EiE® Lesson 4, Part 2	245 minutes	• Adhere to grade-level appropriate speaking conventions • Listen to student presentations, looking for specific criteria • Write a sentence in past tense about why student groups chose to use certain materials in their design	• Test and report results of a model membrane design test • Evaluate a model membrane design using established criteria • Implement steps of the engineering design process to improve results of a model membrane (re-ask, re-imagine, re-plan, and re-create) • Draw and label an engineering plan **Math Objectives** • Use tools to measure how much water has passed through a model membrane • Use decimals or fractions and measuring units to report water volume • Identify that cup and milliliter are different measuring units of liquid volume	
Lesson Topic Presenting and improving model membranes				

Evidence of Learning
 	
• Completed handouts:
  • MMIC 13-1 (EiE® {4-8})
  • MMIC 13-2 (EiE® {4-10})
  • MMIC 13-3: *Group Feedback Form*
  • MMIC 13-4: *Numbers, Classifiers and Volume*
  • MMIC 13-5: *Self-Assessment of Group Work*
  • Oral presentation of the first model membrane design
  • MMIC IPA 1-1: Presentational (Oral) Scoring Rubric
• Groups' feedback (oral) on how the presenters could improve their design in the future
• Improved model membrane design
• Oral articulation (in response to teacher questions) of the improved model membrane design
• Science journal entries				

13 Exploring Membranes

*Associated with EiE® Lesson 4, Part 2

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• State quantities of materials using numbers and appropriate classifiers • State exact amount of liquids using fractions/decimals with units of measurement • Describe attributes of something/someone using the existential verb 有 with a modifying noun phrase • Ask and answer questions using question words • Report on things, actions, or events in past time using action verbs with 了 (temporal marker) and dependent time phrase • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the construction and placing the direct object before the verb • Support ideas/opinions using compound sentences with adverb 因此 • Give reasons for actions/choices/preferences using preposition 为了 • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Order a series of events using sequencing adverbs • Describe attributes of materials using modifying phrases • Make comparison between two things using "A + 比 (comparison marker) + B +(更) + adjective" structure • Suggest an alternative idea using serial verb construction with pivotal noun phrase • Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是 ……, (那么)…… and the adjectival verb 可能	• Ask for clarification about feedback/advice/idea • Express a personal opinion • Express agreement/disagreement • Report events in past time using adverbs of time • Give a command using serial verb construction • Negotiate turn-taking • Negotiate to reach consensus • Request feedback • Make a request using different degrees of politeness

IPA 1	Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
Presentational Task (Oral) *Associated with EiE® Lesson 4	90-125 minutes, plus time for presentations	• Adhere to grade-level appropriate speaking conventions • Listen to student presentations, looking for specific criteria • Write a sentence in past tense about why student groups chose to use certain materials in their "improved" design	• Test and report results of "improved" model membrane design test • Evaluate "improved" model membrane design using established criteria • Point out and explain key design changes between base group's models 1 and 2 • Hypothesize additional solutions to further improve other groups' model membrane designs **Math Objectives** • Use tools to measure how much water has passed through a model membrane • Use decimals or fractions and measuring units to report water volume • Identify that cup and milliliter are different measuring units of liquid volume	
Assessment Topic How can we learn from our mistakes? Evaluating and presenting the improved model membrane designs.				

Evidence of Learning
 	
• Completed handouts:
  • MMIC 13-1 (EiE® {4-8})
  • MMIC 13-2 (EiE® {4-10})
  • MMIC 13-3: *Group Feedback Form*
  • MMIC 13-4: *Numbers, Classifiers and Volume*
• Oral presentation of the improved model membrane design
• MMIC 13-6/IPA 1-1: Presentation (Oral) Scoring Rubric (teacher evaluation)
• MMIC 13-6/IPA 1-1: Presentation (Oral) Scoring Rubric (student self-assessment)
• Groups' feedback (oral) on how the presenters could improve their design in the future
• Improved model membrane design				

IPA 1 Presentational Task (Oral)

*Associated with EiE® Lesson 4

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• State quantities of materials using numbers and appropriate classifiers • State exact amount of liquids using fractions/decimals with units of measurement • Describe attributes of something/someone using the existential verb 有 with a modifying noun phrase • Use a locative phrase 在…里/在…中 to identify the topic • Ask and answer questions using question words • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Report about things, actions, or events in past time using action verbs with 了 (temporal marker) and adverbs of time • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Give reasons for actions/choices/preferences using preposition 为了 • Make comparison between two things using "A + 比 (comparison marker) + B +(更) + adjective" structure • Support ideas/opinions using compound sentences with adverb 因此 • Describe attributes of persons/place/things using modifying phrases • Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是……, (那么)…… and the adjectival verb 可能 • Suggest an alternative idea using serial verb construction with pivotal noun phrase	• Negotiate turn-taking • Express a personal opinion • Express agreement/disagreement • Report events/results in past time using adverbs of time • Accept feedback/advice • Ask for clarification about feedback/advice • Give a command using serial verb construction

<table>
<tr><th>IPA 2</th><th>Time to Complete</th><th>Chinese Language Arts Objectives</th><th>Science and Engineering Objectives</th><th>Social Studies and Culture Objectives</th></tr>
<tr><td>Interpretive Tasks

*Associated with EiE® Juan Daniel's Fútbol Frog, Chapter 7</td><td>150 minutes</td><td rowspan="3">• Actively listen to and accurately interpret the main idea and relevant details of a short passage
• Recall and use prior learning to prepare for listening and reading comprehension tasks
• Actively engage in the reading process
• Comprehend grade-appropriate text (that has not been previewed)
• Distinguish between use of two homophones, 的 and 得, in written text
• Use context cues and character analysis to infer meaning of unfamiliar words
• Identify key words and construct a written chapter summary in a few sentences
• Demonstrate reading comprehension by answering literal, inferential, interpretive and evaluative questions
• Make and evaluate predictions about a story</td><td rowspan="3">• Analyze the relationship between the engineering design process and Juan Daniel's game strategy

Math Objectives

• Use tools to measure how much water has passed through a model membrane
• Use decimals or fractions and measuring units to report water volume
• Identify that cup and milliliter are different measuring units of liquid volume</td><td rowspan="3"></td></tr>
<tr><td colspan="2">Assessment Topic

What methods do engineers use to solve problems? How can what we learn in one situation help us in another? What listening and reading strategies can we use to help us understand a new chapter?</td></tr>
<tr><td colspan="2">Evidence of Learning

• Scored copies of IPA 2-1: Listening Comprehension Assessment
• Scored copies of IPA 2-2: Reading Comprehension Assessment
• Informal observation of Met's modified think-pair-share activity
• Circle map
• Cross-cultural chart</td></tr>
</table>

IPA 2 Interpretive Tasks

* Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 7

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Express location using 在 [zài] in a locative phrase • Ask and answer questions using question words • Order a series of events using sequencing adverbs • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Identify and construct semantic radicals as separate characters or as part of another character • Predict degree of probability of something using auxiliary "helping" verbs • Describe emotional states of main characters using adjectives or adverbs • Describe actions of main characters using verb + resultative complements (directional)	• Report events/results in past time using adverbs of time • Make inferences based on visual clues • Express a personal opinion • Accept feedback/advice/idea • Ask for clarification about feedback/advice/idea • Negotiate turn-taking

IPA 3

Time to Complete	Chinese Language Arts Objectives	Science and Engineering Objectives	Social Studies and Culture Objectives
265 minutes	• Actively engage in the reading-for-global-meaning process • Infer meaning of unfamiliar words • Adhere to grade-level appropriate writing conventions • Demonstrate understanding of the differences between degrees of formality in written Chinese • Collaboratively compose an email using the appropriate format given audience and purpose • Edit and revise a first draft of group email using peer feedback • Evaluate Juan Daniel's decision to return his frog to the rain forest • Recall, confirm/disconfirm, and justify predictions using evidence from the text • Hypothesize about what they would have done with the frog had they been in Juan Daniel's situation • Use journal entries, handouts and classroom print environment to help them "mine" chunks of language that they can use as they write	• Evaluate "improved" model membrane design using established criteria • Sequence the steps of the engineering design process • Report materials used and test results of "improved" model membrane design • State and give reasons for key design changes between initial and "improved" models • State and give reasons for "favorite" step selection	• Distinguish between formal and informal email writing styles in Chinese, specifically differences in greeting, personal pronoun use and closing

Presentational Task (Written)

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 8

Assessment Topic

How do we jointly construct an appropriate email to thank a professional and recount the model membrane design experience? How do we provide peers with helpful feedback during the writing process?

Evidence of Learning

- Informal observation of confirming predictions about Ch. 8 of *Juan Daniel* with support from text and whole class discussion of making a personal connection with the chapter
- First drafts of email
- Informal observation of participation in the co-construction of the sample email (teacher + whole class)
- Completed Handouts:
- MMIC IPA 3-1: *Ms. Peters Email Section Strips*
- MMIC IPA 3-2: *Visiting Engineer Email Section Strips*
- MMIC IPA 3-3: *Email Peer Feedback Checklist*
- MMIC IPA 3-4/4-1: *Presentational (Written) Scoring Rubric (teacher evaluation)*

Math Objectives

- Use tools to measure how much water has passed through a model membrane
- Use decimals or fractions and measuring units to report water volume
- Identify that cup and milliliter are different measuring units of liquid volume

IPA 3 Presentational Task (Written)

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 8

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• Predict degree of probability of something using auxiliary "helping" verbs • Describe emotional states of main characters using adjectives or adverbs • Report about things, actions, or events in past time using action verbs with 了 (temporal marker) and adverbs of time • Ask and answer questions using question words • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Support ideas/opinions using compound sentences with adverb 因此 • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是……, (那么)…… and the adjectival verb 可能 • Draft an email using the appropriate organizational structure and style • Express location using 在 [zài] in a locative phrase • State quantities of materials using numbers and appropriate classifiers • State exact amount of liquids using fractions/decimals with units of measurement • Describe attributes of something/someone using the existential verb 有 with a modifying noun phrase • Describe attributes of persons/place/things using modifying phrases • Use a locative phrase 在…里/在…中 to identify the topic • Report on things, actions, or events in past time using action verbs with 了 (temporal marker) and dependent time phrase • Give reasons for actions/choices/preferences using preposition 为了 • Suggest an alternative idea using serial verb construction with pivotal noun phrase • Make comparison between two things using "A + 比 (comparison marker) + B + (更) + adjective" structure • Distinguish the superlative degree among two or more things/ideas within a topic using a locative phrase 在…里/在…中 to identify the whole topic, and the superlative adverb 最 • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines	• Express a personal opinion • Accept feedback/advice • Ask for clarification about feedback/advice • Negotiate turn-taking • Express agreement/disagreement • Negotiate to reach consensus • Express gratitude • Request feedback • Report events in past time using adverbs of time

IPA 4

Interpersonal Tasks

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 8

Time to Complete: 130-145 minutes

Assessment Topic

How do scientists and engineers do their work using the scientific method and the engineering design process? In what ways are Salvadoran, US and Chinese cultures similar and different? What text-to-self connections can you make with the Juan Daniel story?

Evidence of Learning

- Completed MMIC IPA 4-2: *El Salvador-China-US Cross-cultural Comparisons*
- Completed "Chattanooga ChooChoo" flipchart posters
- Final version of email, ready to send to the engineer
- Recordings of interpersonal tasks, Parts 1 and 2
- Completed scoring rubrics
- MMIC IPA 3-4/4-1: Presentational (Written) Scoring Rubric (teacher evaluation)
- MMIC IPA 4-4: Interpersonal Scoring Rubric (teacher evaluation)

Chinese Language Arts Objectives

- Adhere to grade-level appropriate speaking and writing conventions
- Engage in spontaneous informal conversation to negotiate and achieve consensus
- Recall and evaluate elements (e.g., characters, setting, events, problem, solution) of the Juan Daniel story
- Make text-to-self connections with Juan Daniel story and discuss surprises, likes, and/or dislikes
- Collaboratively compose final version of email using earlier drafts along with peer and teacher feedback

Science and Engineering Objectives

- Identify and order steps of the scientific method and engineering design process
- State and give reasons for a "favorite" step of the scientific method or engineering design process
- Make connections between a "favorite" step and what occurred during that step in either the raisin experiment (scientific method, Lesson 9) or model membrane design process (engineering design process, Lessons 11-13)
- Report test results and materials used for first and "improved" model membrane designs
- Give reasons for key design changes between initial and "improved" models
- Evaluate changes in "improved" model membrane design

Math Objectives

- Use tools to measure how much water has passed through a model membrane
- Use decimals or fractions and measuring units to report water volume
- Identify that cup and milliliter are different measuring units of liquid volume

Social Studies and Culture Objectives

- Use information about El Salvador, the US and China on cross-cultural chart to identify and justify travel and other personal interests/preferences
- Compare and contrast places/products/practices found in El Salvador, China and US
- Distinguish between formal and informal email writing styles in Chinese, specifically differences in greeting, personal pronoun use and closing

IPA 4 Interpersonal Tasks

*Associated with EiE® *Juan Daniel's Fútbol Frog,* Chapter 8

Chinese Language Objectives (CO)	Chinese Language Objectives (CC)
• State or identify attributes of something/someone using a predicative construction with the main noun modified by a relative clause • Identify similarities and differences between two things using topic as noun/verb phrase at sentence beginning • Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb • Express location using 在 [zài] in a locative phrase • Support ideas/opinions using compound sentences with adverb 因此 • Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines • Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text • Ask and answer questions using question words • Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence • Describe attributes of person/place/thing using modifying phrases • Describe emotional states of main characters using adjectives or adverbs • Distinguish the superlative degree among two or more things/ideas within a topic using a locative phrase 在…里/在…中 to identify the whole topic, and the superlative adverb 最 • Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是 ……, (那么)…… and the adjectival verb 可能	• Express a personal opinion • Express agreement/disagreement • Negotiate to reach consensus • Negotiate turn-taking • Request feedback • Accept feedback/advice/idea • Ask for clarification about feedback/advice/idea • Order a series of events using sequencing adverbs • Express gratitude